



## 132 Lions Drive, Mudgee, NSW

### Preliminary Site Investigation

**Ref: P1834-PSI-001-Rev0**

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**Project Details**

<b>Site Address:</b>	132 Lions Drive, Mudgee, NSW	
<b>Project Type:</b>	Preliminary Site Investigation	
<b>Project No.</b>	<b>Report Type</b>	<b>Report No.</b>
P1834-PSI-001-Rev0	PSI	1

We confirm that the following report has been produced for Bunnings Group Limited, based on the described methods and conditions within.

For and on behalf of **Valley Civilab Pty Ltd**,

[REDACTED]

**Karl Dawes**  
General Manager

## Executive Summary

Valley Civilab Pty Ltd (Valley Civilab) was engaged by Bunnings Group Limited to undertake a Preliminary Site Investigation (PSI) with limited sampling at the site located at 132 Lions Drive, Mudgee, NSW NSW (herein referred to as the site).

The site is currently proposed to be developed into a new commercial warehouse with associated carparks. The Preliminary Site Investigation is required for due diligence purposes as part of the development application.

This PSI includes the following elements:

- Review of historical aerial images of the site and surrounding area;
- Compilation of a historical title summary;
- Review of a Section 10.7 Planning Certificate;
- Review of publicly available environmental databases and legislative instruments;
- Site inspection and interview with knowledgeable site representative (if available);
- A preliminary Conceptual Site Model (CSM) with an assessment of source-pathway-receptor linkages; and
- Recommendations for further investigation, any management requirements and/or any ongoing management, monitoring or remedial works that may be required.

Limited soil sampling was also conducted to supplement the desktop assessment for contamination including

- Collection of 24 samples including two duplicate samples for QA/QC purposes
- A Trip Spike/Trip Blank sample as part of the QA/QC program

The detailed desktop review of available information and thorough site inspection including shallow soil investigation have enabled the development of a preliminary conceptual site model allowing assessment of potential health and environmental issues relating to the site. Key findings were:

- 1) Potential contamination sources at the site are limited based on historical land use;
- 2) Visible signs of gross contamination were not observed during the site inspection and intrusive works; and
- 3) Contamination in shallow soils was not identified at any of the sampling locations.

In summary, based on the desktop study and limited intrusive sampling conducted on the Site, no indication of gross contamination has been identified which would constrain the development of the Site for its proposed commercial land use.

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# 1 Introduction

## 1.1 Background

Valley Civilab Pty Ltd (Valley Civilab) was engaged by Bunnings Group Limited to undertake a Preliminary Site Investigation (PSI) with limited sampling at the site located at 132 Lions Drive, Mudgee, NSWNSW (herein referred to as the site).

The site is currently proposed to undergo the construction of a new Commercial Development – Replacement Store consisting of a warehouse with hardstand areas and pavement access areas/car parking (total site area of 54,377.11m<sup>2</sup>). The Preliminary Site Investigation is required for due diligence purposes as part of the development application.

A Site Locality Plan and Site Features Plan are presented as *Figure 1 of Annex A*.

## 1.2 Objectives

The objectives of this PSI were to investigate potential contaminant sources, pathways and receptors in relation to the site as well as inform preliminary consideration of potential risks to human health and/or the environment within the context of the proposed site land use. The Site is intended to have a new Commercial Development. For the purpose of the investigation, HIL D criteria have been adopted as the proposed site land use.

This report has been prepared in general accordance with provisions for a PSI as defined within the *National Environment Protection Measure (NEPC 2013)*, *AS 4482.1-1997 Guide to the sampling and Investigation of potentially contaminated soil* and the *Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA 1997)*.

All information collected informed the development of the preliminary conceptual site model which provides a representation of potential contamination sources, receptors and exposure pathways between these sources and receptors.

## 1.3 Scope of Works

### 1.3.1 Preliminary Site Investigation

This PSI includes the following elements:

- Review of historical aerial images of the site and surrounding area;
- Compilation of a historical title summary;
- Review of a Section 10.7 Planning Certificate;
- Review of publicly available environmental databases and legislative instruments;
- Site inspection and interview with knowledgeable site representative (if available);
- A preliminary Conceptual Site Model (CSM) with an assessment of source-pathway-receptor linkages; and

- Recommendations for further investigation, any management requirements and/or any ongoing management, monitoring or remedial works that may be required

### 1.3.2 Soil Sampling

Soil sampling for contamination assessment including:

- Collection of 24 samples including two duplicate samples for QA/QC purposes
- A Trip Spike/Trip Blank sample as part of the QA/QC program



## 2 Site Description

### 2.1 Site and Lot identification

The site is located at 132 Lions Drive, Mudgee NSW, legally identified as Lot 2 on Deposited Plan (DP) 1079362. The site forms an irregular shaped block of approximately 54,377m<sup>2</sup> adjacent to Castlereagh Highway along the northernmost boundary (SIX Maps, 2019).

A summary of the site information is provided in **Table 1** below.

**Table 1: Site Identification**

<b>Item</b>	<b>Description</b>
Current Site Owner	Simon Vincent Rayner Jennifer Anne Freeman
Site Address	132 Lions Drive, Mudgee, NSW
Current Zoning	RU4 Primary Production Small Lots
Proposed Land Use	Commercial
Legal Description	Lot 2 DP1079362
Local Government Authority	Mid-Western Regional Council
Site Area	54,377m <sup>2</sup>
Elevation	474m Above Sea Level (ASL)
Geographical Location (GDA94-MGA56)	149°36'16.72"E 32°36'50.84"S

Review of the Mid-Western Regional Local Environmental Plan (LEP) 2012 together with the Planning Certificate under Section 10.7 Part 2 and 5 of the Environmental Planning and Assessment Act 1979 (attached as *Annex B*) provides the following information:

- 1) The site is not affected by heritage items;
- 2) The site and/or adjacent lots are not affected by land reserved for acquisition;
- 3) The site is not affected by environmentally sensitive land or critical habitat;
- 4) The site and/or adjacent lots are not subject to flood planning constraints; and
- 5) There are no prescribed matters under section 59(2) of the Contaminated Land Management Act 1997 to be disclosed.

Review of the CSIRO Acid Sulfate Resource Information Service (ASRIS, 2008) identifies the site as being within an area of low probability acid sulfate occurrence.

### 2.2 Surrounding Land Use

The site is located predominantly within a commercial area of Mudgee. Review of satellite imagery identified surrounding land uses as summarised in **Table 2** below.

*Table 2: Summary of surrounding land uses*

<b>Direction</b>	<b>Land Use</b>	<b>Distance</b>
North	Residential dwelling Commercial Buildings	Adjacent 20m
East	Residential dwelling Vacant Land	Adjacent 45m
South	Vacant Land	Adjacent
West	Commercial Buildings Residential dwellings	15m 120m

### 3 Background Data Review and Database Searches

#### 3.1 Summary of ownership and site use

Historical title searches completed for the site provide a summary of ownership as described in **Table 3** below.

**Table 3: Summary of site ownership**

	<b>(Lot 2 DP 1079362)</b>
2005 – to date	Simon Vincent Rayner Jennifer Anne Freeman
	<b>(Lot D DP 164723 – Area 13 Acres 1 Rood 19 Perches – Conv Book 4449 No. 523)</b>
2005 – 2005	Simon Vincent Rayner Jennifer Anne Freeman
2004 – 2005	Simon Vincent Rayner / executor Jennifer Anne Freeman/executor Alice Emily Rayner, estate
	<b>(Lot D DP 164723 – Area 13 Acres 1 Rood 19 Perches – Conv Book 2852 No. 834)</b>
1967 – 2004	Vincent Arthur Rayner, grazier Alice Emily Rayner, his wife
	<b>(Lot D DP 164723 – Area 13 Acres 1 Rood 19 Perches – Conv Book 2662 No. 208)</b>
1963 – 1967	Andrew Alexander Pirie, stock and station agent Melva Elaine Pirie, his wife
	<b>(Lot D DP 164723 – Area 13 Acres 1 Rood 19 Perches – Conv Book 2447 No. 837)</b>
1958 – 1963	Grace Broadhead, wife of Charles Andrew Broadhead
	<b>(Part Portion 182 Parish Mudgee – Area 148 Acres – Conv Book 2101 No. 490)</b>
1949 – 1958	Geoffrey Charles Cox, grazier

	<b>(Part Portion 182 Parish Mudgee – Area 148 Acres – Acknowledgement Book 1745 No. 949)</b>
1936 – 1949	William Jones, carrier/executor George Arthur Jones, carrier/executor Robert Percival Jones also known as Robert Jones, estate
	<b>(Part Portion 182 Parish Mudgee – Area 148 Acres – Conv Book 1069 No. 532)</b>
1915 – 1936	Robert Jones, carrier

Historical title supporting documents sourced as part of this assessment are presented as *Annex C*.

### 3.2 Historical Photographs

Historical aerials and satellite images dating 1964 – 2009 provide a summary of development at the site and within the surrounding area. Historical images are presented as part of *Annex D* and a summary of the review in **Table 4** below.

**Table 4: Historical Aerial Review**

Date	Summary
1964	The image dated 1964 is an excerpt from a low resolution black and white aerial photograph depicting the site and surrounding area. At this time, the site and surrounding area is unoccupied and consists of vacant land and some roads.
1971	The image dated 1971 is an excerpt from a low resolution black and white aerial photograph depicting the site and surrounding area. The residential dwelling that stands currently at the site is seen to be developed on the north-western boundary. A dam is also depicted to the south-east of the site. A residential dwelling is depicted immediately adjacent to the eastern site boundary.
1980	The image dated 1980 is an excerpt from a low resolution black and white aerial photograph depicting the site and surrounding area.  Major features at the site and surrounding area remain consistent with the 1971 image with some further residential development adjacent to the south-western corner of the site boundary.
1988	The image dated 1988 is a low resolution black and white aerial image depicting the site and surrounding area. Major features at the site and surrounding area remain

Date	Summary
	consistent with the 1980 image. Development of the now Mudgee Holiday Park is seen to the far of the aerial image.
1994	The image dated 1994 is a high-resolution colour aerial image depicting the site and surrounding area. Site features appear consistent with those observed in the 1988 image. Some commercial development can be seen adjacent to the north-western site boundary.
2003	The image dated 2003 is a high-resolution colour satellite image depicting the site and surrounding area. Site features appear consistent with those observed in the 1994 image. Some further development to the commercial building to the north of the site boundary is visible along with the initial development of the Mudgee Water Treatment Plant to the north-east of the site. Castlereagh Highway appears to have been upgraded/ resurfaced.
2009	The image dated 2009 is a high-resolution colour satellite image depicting the site and surrounding area. Site features appear consistent with those observed in the 2003 image. The current Mudgee Bunnings Warehouse can be seen developed opposite to the northern site boundary across Lions Drive.

### 3.3 Site Setting

#### 3.3.1 Topography and hydrology

The topography of the area is characterised by undulating low hills and rises and gently inclined side slopes. Review of Google Earth Pro (2019) indicates the site slightly slopes from 475m Above Sea Level (ASL) in the west to 474m ASL in the east. The closest surface water body identified is the Sawpit Gully located approximately 100m to the north-west of the site.

#### 3.3.2 Lithology and Geology

Review of the NSW Office of Environment and Heritage soil-landscape database– indicates that the site falls within the Craigmores Soil Landscape.

Review of the Department of Finance, Services & Innovation 2019; Mudgee 1:250,000 Geological Sheet indicates that the site lies on the border of units of Carbonaceous siltstone, quartz-lithic sandstone, conglomerate, coal lenses and units of Alluvial silt, clay and sand.

### 3.3.3 Hydrogeology

Review of the NSW Department of Primary Industries – Office of Water / Water Administration Ministerial Corporation database identified three registered bores within 500m of the site. Bore details are presented in **Table 5** below.

**Table 5: Groundwater Bore Details**

Bore ID	Construction Date	Location	Depth (mbgl)	Purpose
GW053136	01/12/1980	241m South West	60.90	Irrigation
GW048444		263m South	28.40	Domestic, Stock
GW048537	01/05/1978	413m South	12.20	Not Known

Groundwater data for the identified bores were not available for review at the time of this report.

### 3.4 Chemical storage and waste production/disposal

The results of the SafeWork Dangerous Goods Search were not considered necessary. The review of historical aerial imagery indicates no significant infrastructure has ever been present on the site during its historical use. As the site has remained undeveloped, no licensed dangerous goods have been stored within the site.

### 3.5 Environmental incident history/register

Sources to inform consideration of potential environment incidents at the site were not identified as part of this investigation.

### 3.6 Environmental Significance

A search of the Australian Department of Environment Protected Matters Search Tool (PMST) was completed to inform consideration of environmental receptors at or surrounding the site. The PMST report identified three threatened ecological communities, twenty-seven threatened species and eleven listed migratory species that may be potentially applicable to the site. The PMST report is presented as *Annex E*.

### 3.7 Online Database Searches

#### 3.7.1 Environment Protection Licenses

Review of the NSW EPA *Protection of the Environment Operation Act* Public Register completed 22<sup>nd</sup> July 2019 did not identify any Environment Protection Licenses applicable to the site or immediate surrounding areas. Environmental Protection Licences were found for railway systems activities for John Holland Rail Pty Ltd; operating 544m to the North.

### 3.7.2 Heritage

Review of the Heritage Data Source - Planning & Environment, indicates the site is not affected by heritage items. The closest registered heritage item is Burrundulla Station and homes situated 606m North of the Site. Registered heritage items within the area are described in **Table 6** below.

**Table 6: Heritage Item Summary**

<b>Heritage Item Number</b>	<b>Description</b>	<b>Approximate Distance from Site</b>
1402	Burrundulla Station and homes	606m North

A figure detailing locations of heritage items listed above is presented within Lotsearch Report in *Annex D*.

### 3.7.3 Contaminated Land Records

A review of the NSW EPA Contaminated Land Record of Notices was completed on 22<sup>nd</sup> July 2019. This review identified that the site is not subject to regulation by the NSW EPA under Section 60 of the *Contaminated Land Management (CLM) Act 1997* and similarly that there are no sites within the surrounding area subject to regulation under the *CLM Act 1997*.

A review of the NSW EPA List of Contaminated Sites was completed 8<sup>th</sup> July 2019. This review identified that the site has not been notified to the EPA as a contaminated site and similarly that there are no sites within the surrounding area that have been notified. The findings of these reviews indicate that the site is unlikely to be impacted by contamination known to the EPA.

### 3.7.4 Unexploded Ordnance (UXO)

A review of the Department of Defence (DoD) UXO Map was completed on 3<sup>rd</sup> July 2019. This review indicates that the closest known location of UXO is located over 80km south of the site within Clear Vale where the DoD indicates the slight occurrence of UXO area.

### 3.7.5 Naturally Occurring Asbestos

NSW Department of Industry, Resources & Energy (2016) identifies that the site does not fall in an area known to contain naturally occurring asbestos.

## 4 Site Inspection

Two experienced Valley Civilab environmental scientists visited the site on the 10<sup>th</sup> of July 2019 to consolidate the desktop review described in the sections above. The site visit included a detailed visual inspection of the site surface and infrastructure. Key findings are presented below.

The site is adjacent to Castlereagh Highway to the north and Lions Drive to the west. One residential building is located within the site, and a dam to the south-eastern corner. Otherwise, the site is vacant undeveloped grass land.

Site topography was observed to be flat with a slight slope up to Lions drive along the western boundary.

## 5 Soil Investigation

As stated in Section 1.3, a soil investigation was commissioned following desktop review of information. The sampling density and analytical schedule generated as part of this intrusive investigation is only intended to supplement findings from the desktop review of information and is not intended to meet the minimum requirements of a Detailed Site Investigation (DSI) as outlined within the *NSW Office of Environment and Heritage: Guidelines for Consultants Reporting on Contaminated Sites (2011)*.

All works were conducted in accordance with Valley Civilab's relevant Standard Operating Procedures (SOPs). Methodologies are outlined in the following sub-sections. Borelogs are presented in *Annex F*, respectively. Soil Investigation locations are presented in *Figure 1 of Annex A*.

### 5.1 Soil sampling

Limited soil sampling for contamination assessment including;

- Collection of 24 soil samples including two duplicate samples for QA/QC purposes;
- A Trip Spike/Trip Blank sample as part of the QA/QC program.

### 5.2 Assessment Criteria

Tier 1 assessment criteria relevant to the proposed land use<sup>1</sup> have generally been adopted from the NEPM (NEPC, 2013). Specifically, this includes:

- 1) The CRC CARE (2011) health screening levels (HSLs) for petroleum hydrocarbons at 0 to <1m below ground level in clay, adopted to assess potential vapour risks to human receptors;
- 2) The ASC NEPM (2013) health investigation levels (HILs), adopted to evaluate potential direct contact risks associated with the presence of other contaminants of potential concern (CoPCs) in soil (i.e. metals and PAH);
- 3) The CRC CARE (2011) assessment criteria for direct contact with petroleum hydrocarbons by future receptors;
- 4) The ASC NEPM (1999) ecological investigation levels (EILs) for inorganics to assess risks to ecological receptors; and
- 5) The ASC NEPM (1999) ecological screening levels for coarse soil for hydrocarbon compounds to assess risks to ecological receptors.

All criteria adopted along with their associated values are displayed in *Tables 1 – 3 of Annex G*.



### 5.3 Field Observations

Inspection of boreholes and soil cuttings across the investigation area infers the presence of natural silty sand/sandy silt followed by weathered sandstone. No visual or olfactory evidence of gross contamination were observed within any at any of the investigation locations.

Borelogs recorded during the intrusive investigation are provided as *Annex F*.

### 5.4 Analytical Results

A total of twenty-two (22) primary samples were submitted for chemical analysis for a range of Contaminants of Concern including Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Xylene and Ethylbenzene (BTEX), Polyaromatic Hydrocarbons (PAH) including Benzo(a)Pyrene (BaP), 8 Heavy Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel & Zinc), Organophosphorus Pesticides (OPP), Organochlorine Pesticides (OCP) and Polychlorinated Biphenyls (PCBs).

The results of the analysis of the twenty-two (22) primary soils samples indicate that all analytes were below the Limit of Reporting (LOR) for TRH, BTEX, PAH, OCP, OPP and PCB. All heavy metals results were below the HIL-D criteria.

Soil analytical results are included in *Tables 1 – 3 of Annex G*. All samples returned results which were below applicable assessment criteria for site land use.

## 6 Analytical Data Quality Assessment

The quality of analytical data presented within this report has been assessed with reference to the following issues:

- 1) Sampling technique;
- 2) Preservation and storage of samples upon collection and transport to the laboratory;
- 3) Sample holding times;
- 4) Analytical procedures;
- 5) Laboratory limit of reporting (LOR);
- 6) Laboratory quality assurance (QA) procedures; and
- 7) The occurrence of apparently unusual or anomalous results.

A review of these items was conducted to assess data in terms of completeness, representativeness, comparability, accuracy and precision. A discussion of the data quality assessment related to the items listed above is provided in the subsections that follow.

### 6.1 Sample Collection, Storage, Transport and Analysis

#### 6.1.1 General

Samples were collected, stored and transported to the laboratory in accordance with Valley Civilab's standard operating procedures which are consistent with guidelines provided in the ASC NEPM (2013). All samples were collected in appropriate containers provided by the laboratory.

#### 6.1.2 Holding Times

Laboratory analysis was undertaken within specified holding times in accordance with Schedule B3 of the ASC NEPM (2013) and using NATA accepted analytical procedures.

#### 6.1.3 Sample Transport and Storage temperature

In accordance with Schedule B3 of the ASC NEPM (2013), all samples were chilled during transport to the laboratory and evidence of chilling was recorded on the sample receipt documentation for the laboratory.

Trip Spike and Trip blank samples were submitted with primary samples as part of the field sampling program. The field trip blank sample returned no detections of any contaminants. The field trip spike sample was stored with the samples collected in the field and forwarded on to the laboratory for analysis. The recoveries were within the allowable range indicating transport of samples was adequate to maintain QA/QC.

### 6.2 Field Intra-Laboratory Duplicate Assessment

Relative Percentage Differences (RPDs) were calculated between the primary sample concentration and its corresponding intra-laboratory duplicate. As stipulated by the NEPM, the RPD acceptance criteria is 30% however it is noted that higher variations can be expected for organic analysis, samples with low

analyte concentrations or non-homogenous samples (NEPC, 2013). As such, the primary laboratory RPD acceptance criteria were used and are as follows:

- 1) Results <10 times the LOR: No Limit;
- 2) Results between 10-20 times the LOR: RPD must lie between 0-50%; and
- 3) Results >20 times the LOR: RPD must lie between 0-30%

One intra-laboratory duplicate sample was collected as part of this investigation. Given that the purpose of the sampling works was to provide preliminary indications as to the presence/absence of contamination, collection of 1 field duplicate per 10 primary samples was considered appropriate.

All RPD results were within the acceptable range. The field QA/QC is considered acceptable for the investigation. Sample and RPD results are included in *Table 3 of Annex G*.

### **6.3 Laboratory Quality Assurance and Quality Control**

Laboratory QA/QC procedures and results are detailed in the certified laboratory results contained in *Annex H*. The analytical methods implemented by the laboratories were reported to be consistent with the scope of their NATA accreditation and consistent with Schedule B3 of the ASC NEPM (2013). The laboratory generally reported an adequate range and frequency of data quality information (including laboratory duplicates and control samples).

The reported laboratory data quality was considered acceptable to meet the objectives of this assessment.

### **6.4 Data Quality Summary**

Overall, the data from this investigation is considered to be of sufficient quality to serve as a basis for interpretation as part of this assessment.

## **7 Preliminary Conceptual Site Model**

A CSM is a representation of site-related information regarding contaminant sources, exposure pathways and receptors. A CSM facilitates consideration of risks to human health and the environment associated with site contamination through assessment of source – pathway – receptor linkages. A preliminary CSM based on the understanding of site history and soil-landscape environmental setting is presented in the following sections.

### **7.1 Potential Sources and Associated Contaminants of Concern**

Analytical results from the intrusive investigation did not indicate any Contaminants of Potential Concern (CoPC).

Off-site sources of contamination with the potential to affect the site were considered unlikely taking into consideration information discussed in Section 2.7 of this report.

### **7.2 Potential Receptors and Pathways**

The following receptors have been identified based on current site setting and proposed future development:

- 1) Construction workers associated with the proposed development;
- 2) Current and future site users (including secondary students and workers);
- 3) Future on-site intrusive maintenance workers; and
- 4) Terrestrial flora and fauna.

Pathways by which the contamination may affect the receptors presented above includes:

- 1) Direct contact (dermal contact, incidental ingestion and dust inhalation);
- 2) Ecological uptake.

### **7.3 SPR Linkage Assessment**

A source-pathway-receptor (SPR) linkage is present when a pathway links a source with a receptor. These linkages are considered complete where risk to the identified receptors may exist, now or in the future. Given that soil analytical results were reported below the adopted screening criteria (HIL/HSL A) for the identified receptors via the relevant pathway (direct contact), this SPR linkage is incomplete. Therefore, a potential exposure risk is considered unlikely.

## 8 Conclusions

The detailed desktop review of available information and thorough site inspection including shallow soil investigation have enabled the development of a preliminary conceptual site model allowing assessment of potential health and environmental issues relating to the site. Key findings were:

- 4) Potential contamination sources at the site are limited based on historical land use;
- 5) Visible signs of gross contamination were not observed during the site inspection and intrusive works; and
- 6) Contamination in shallow soils was not identified at any of the sampling locations.

In summary, based on the desktop study and limited intrusive sampling conducted on the Site, no indication of gross contamination has been identified which would constrain the development of the Site for its proposed commercial land use.

If you have any further questions about this report, please contact the undersigned.

For and on behalf of

Valley Civilab Pty Ltd



**Jake Duck**  
**Environmental Scientist**



**Malcolm Adrien**  
**Environmental Services Manager**

## REFERENCES

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<https://trade.maps.arcgis.com/apps/PublicInformation/index.html?appid=87434b6ec7dd4aba8cb664d8e646fb06> accessed 25/7/19.

Lotsearch (2019) Enviro Professional, *Reference: LS007510 EP - 22 Jul 2019 16:10:07*

## **LIMITATIONS**

This report was prepared in accordance with the scope of work outlined within this report and subject to the applicable cost, time and other constraints. Valley Civilab performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental profession. Valley Civilab makes no warranty concerning the suitability of the site for any purpose or the possibility of any use, development or re-development of the site. Except as otherwise stated, Valley Civilab's assessment is limited strictly to identifying specified environmental conditions associated with the subject site and does not evaluate structural conditions of any buildings on the subject site. Lack of identification in the report of any hazardous or toxic materials on the subject site should not be interpreted as a guarantee that such materials do not exist on the site.

This assessment is based on site inspection conducted by Valley Civilab personnel, sampling and analysis described in the report, and information provided by Bunnings Group Limited or other people with knowledge of the site conditions. All conclusions and recommendations made in the report are the professional opinions of the Valley Civilab personnel involved with the project and, while normal checking of the accuracy of data has been conducted, Valley Civilab assumes no responsibility or liability for errors in data obtained from such sources, regulatory agencies or any other external sources, nor from occurrences outside the scope of this project.

Valley Civilab is not engaged in environmental consulting and reporting for the purpose of advertising, sales promoting, or endorsement of any client interests, including raising investment capital, recommending investment decisions, or other publicity or investment purposes.

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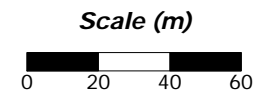
# Annex A





Note:  
(1) The scale bar is approximate.  
(2) Base layer sourced from Sixmap, Mudgee, NSW.  
Accessed 4th July 2019.

**Figure 1 - Site Features Plan**





# Annex B



MID-WESTERN REGIONAL COUNCIL

PO Box 156, MUDGEE NSW 2850

86 Market Street, Mudgee | 109 Herbert Street, Gulgong | 77 Louee Street, Rylstone

T 1300 765 002 or 02 6378 2850 | F 02 6378 2815

E council@midwestern.nsw.gov.au

## Planning Certificate

made under Section 149 Environmental Planning and Assessment Act 1979

### APPLICANT

Lotsearch Pty Ltd  
Level 3  
68 Alfred Street  
MILSONS POINT NSW 2061

### OWNER (as recorded by Council):

Ms JA Freeman & Mr SV Rayner  
290 Burrundulla Road  
BURRUNDULLA NSW 2850

<b>Certificate No:</b>	PC0055/2020
<b>Receipt No:</b>	425178
<b>Date:</b>	25 July 2019
<b>Property No:</b>	5989
<b>Customer Ref:</b>	LS007510
<b>Property Address:</b>	134 Lions Drive BURRUNDULLA NSW 2850
<b>Property Description:</b>	Lot 2 DP 1079362

The Environmental Planning and Assessment Act 1997 commenced operation on the 1 July 1998. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Amendment) Regulation 1998, Environmental Planning and Assessment (Further Amendment) Regulation 1998 and Environmental Planning and Assessment (Savings and Transitional Regulation 1998).

### SECTION A: INFORMATION PROVIDED PURSUANT TO SECTION 149(2) OF THE ACT:

#### MID-WESTERN REGIONAL LOCAL ENVIRONMENTAL PLAN 2012

This planning instrument was published 10 August 2012 on the NSW Legislation website and applies to all the land within Mid-Western Region Local Government Area.

#### AMENDMENTS TO MID-WESTERN REGIONAL LOCAL ENVIRONMENTAL PLAN 2012

Amendment No.1 - Temporary Workers' Accommodation - Published 10 August 2012 on the NSW Legislation website

**Currently the land is zoned:**

RU4 Primary Production Small Lots

Note: where two or more zones appear the property is affected in part by each zone.

**Land use Zoning Table:**

The following land use zoning table(s) apply to the land the subject of this Certificate.

**Zone RU4 Primary Production Small Lots**

2 Permitted without consent

Environmental protection works; Extensive agriculture; Home businesses; Home occupations; Intensive plant agriculture; Roads; Water reticulation systems.

3 Permitted with consent

Cellar door premises; Dwelling houses; Farm buildings; Home industries; Plant nurseries; Roadside stalls; Any other development not specified in item 2 or 4.

4 Prohibited

Air transport facilities; Amusement centres; Attached dwellings; Backpackers' accommodation; Boarding houses; Boat building and repair facilities; Boat launching ramps; Boat sheds; Car parks; Cemeteries; Charter and tourism boating facilities; Child care centres; Commercial premises; Crematoria; Exhibition homes; Exhibition villages; Freight transport facilities; Group homes; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Hostels; Hotel or motel accommodation; Industrial retail outlets; Industrial training facilities; Industries; Intensive livestock agriculture; Jetties; Livestock processing industries; Marinas; Mooring pens; Moorings; Mortuaries; Multi dwelling housing; Passenger transport facilities; Places of public worship; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Residential flat buildings; Respite day care centres; Restricted premises; Sawmill or log processing works; Semi-detached dwellings; Seniors housing; Service stations; Sex services premises; Shop top housing; Signage; Stock and sale yards; Storage premises; Transport depots; Vehicle body repair workshops; Vehicle repair stations; Warehouse or distribution centres; Waste disposal facilities; Wholesale supplies.

**SECTION B: OTHER PRESCRIBED INFORMATION PURSUANT TO SECTION 149(2) OF THE ACT:**

As at the date of this Certificate the following State Environmental Planning Policies, Development Control Plans, Directions under Environmental Planning and Assessment Act and other Special Provisions apply.

State Environmental Planning Policy (Affordable Rental Housing) 2009

This policy aims to facilitate the effective delivery of new affordable rental housing by providing incentives by way of expanded zoning permissibility, floor space ratio bonuses and non-discretionary development standards.

#### State Environmental Planning Policy BASIX 2004

The purpose of the SEPP is to encourage sustainable residential development. An application for a development consent, complying development certificate or construction certificate in relation to certain kinds of residential development must be accompanied by a list of commitments by the applicant as to the manner in which the development will be carried out, and the carrying out of residential development pursuant to the resulting development consent, complying development certificate or construction certificate will be subject to a condition requiring such commitments to be fulfilled.

#### State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

The aim of this policy is to provide streamlined development processes for development that complies with specific development standards.

It identifies exempt and complying development codes that have state wide application including the General Exempt Development Code, the General Housing Code, Housing Internal Alterations Code and General Commercial and Industrial Code.

#### State Environmental Planning Policy (Infrastructure) 2007

The aim of this policy is to facilitate the effective delivery of infrastructure across the state and repeals a number of other previous SEPP's.

It provides development controls related to air transport, correctional centres, educational establishments, electricity generating works, electricity transmission and distribution, flood mitigation, forestry, emergency services facilities, gas transmission or distribution, health services facilities, housing and group homes and many other facilities.

#### State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007

This policy is to ensure that suitable provision is made for ensuring safety of persons using temporary structures and encourage the protection of the environment at such locations.

#### State Environmental Planning Policy (Rural Lands) 2008

The aim of this policy is to facilitate the orderly and economic use and development of rural lands for rural and related purposes.

It identifies rural planning principles and rural subdivision principles, will implement measures designed to reduce land use conflict, identifies state significant agricultural land and amends provisions of other environmental planning instruments relating to concessional lots in rural subdivisions.

#### SEPP (Mining, Petroleum Production and Extractive Industries) 2007

The SEPP consolidates and updates many existing planning provisions related to mining, petroleum production and extractive industries as well as introducing new provisions to ensure that potential environmental and social impacts are adequately addressed during the assessment and determination of development proposals.

#### State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004

This policy aims to increase availability and to provide a wider choice of residential accommodation for seniors or people with a disability. The policy establishes development standards and requirements for support services.

#### SEPP No 15 - 9 April 1998 - Rural Landsharing Communities

This Policy aims to encourage and facilitate development of rural landsharing communities to collectively manage land in an environmentally sensitive and sustainable manner and to provide for low cost housing. The Policy establishes criteria for rural landsharing community development, matters for Council consideration, environmental considerations, site analysis and management requirements for development proposed under the Policy.

#### SEPP No 21 - Caravan Parks

This Policy outlines requirements for development consent principally in relation to long term use of sites in caravan parks and for subdivision by long leases.

Development Consent is not required for installation or placement of moveable dwellings on sites in lawfully operating caravan parks.

#### SEPP No 30 - 8 December 1989, Amended 28 August 1993, 24 February 1995 and 11 June 1999 - Intensive Agriculture

This Policy requires development consent for cattle feedlots having a capacity of 50 or more head of cattle, piggeries having a capacity of 200 or more pigs or 20 or more breeding sows. This Policy also aims to extend the definition of the term "rural industry" where used in environmental planning instruments so as to include within the meaning of that term composting facilities and works, including facilities and works for the production of mushroom substrate.

#### SEPP No 33 - 13 March 1992 - Hazardous and Offensive Development

This Policy redefines hazardous and offensive developments and specifies that such proposals be advertised, be well documented and that Council consider any measures taken to mitigate their impact.

#### SEPP No 36 - 16 July 1993 - Manufactured Homes Estates

This Policy aims to facilitate the establishment of well designed and properly serviced manufactured home estates in suitable locations as an alternative to traditional housing.

#### SEPP No 44 - Koala Habitat Protection

This Policy aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas.

The Policy applies to all land with an area of more than one hectare to which a Development Application has been made.

#### SEPP No 55 - Remediation of Land

This Policy aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. The Policy applies to the whole state, to ensure that remediation is permissible development and is always carried out to a high standard. It specifies when consent is required for remediation and lists considerations that are relevant when rezoning land and determining development applications.

### SEPP No 62 - Sustainable Aquaculture

The aims and objectives of this Policy are to encourage sustainable aquaculture, including sustainable oyster aquaculture, in the State, namely, aquaculture development which uses, conserves and enhances the community's resources so that the total quality of life now and in the future can be preserved and enhanced.

### SEPP No 64 - Advertising Signage

This Policy provides controls which will improve the quality of outdoor advertising and our environment.

### SEPP No 65 - 26 July 2002 - Design Quality of Residential Flat Development

This Policy aims to improve the design quality of residential flat developments in New South Wales.

### State Environmental Planning Policy (State and Regional Development) 2011

The purpose of the SEPP is to identify development that is State significant development, State significant infrastructure and critical State significant infrastructure. It also confers functions on joint regional planning panels to determine development applications.

### State Environmental Planning Policy (Major Development) 2005

The purpose of the SEPP is to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant sites for the benefit of the State.

### Mid-Western Regional Development Control Plan 2013

This plan provides guidelines for all types of development within the Mid-Western Regional Council Local Government Area. It replaces all of the separate Development Control Plans and includes standards for Residential, industrial, commercial, wind farm, temporary workers accommodation, signage and other forms of development.

### Land Not Within Conservation Area

The land the subject of this Certificate is **not** within a Heritage Conservation Area as identified in the Mid-Western Regional LEP 2012.

### Not an Item of Environmental Heritage

The land the subject of this certificate is **not** identified in Schedule 5 of the Mid-Western Regional LEP 2012 as an item of Environmental Heritage.

### Dwelling Houses - RU4 Primary Production Small Lots Zone

Mid-Western Regional Local Environmental Plan 2012 specifies a minimum lot size of 20 hectares for the erection of a dwelling in this zone. Please note that there may be other provisions in the LEP that may apply if the land does not meet the minimum allotment size.

Approval must be obtained either through the Development Application or Complying Development Certificate process prior to the erection of a dwelling on this land.

### The Land is Not Subject to Road Widening

Council's records indicate that the land the subject of this Certificate is NOT affected by any road widening or road re-alignment under:

- 1) Division 2 of the Roads Act, 1993;
- 2) Section 262 of the former Local Government Act, 1919;
- 3) Any Environmental Planning Instrument
- 4) Any resolution of Council.

### Coastal Protection

Council has not been notified, by the Department of Public Works, that the land the subject of this Certificate is affected by the operation of Section 38 or 39 of the Coastal Protection Act, 1979.

### Risk of Land Slip or Subsidence

No information available re land slip or subsidence. Land is not within a Proclaimed Mine Subsidence District.

### Identified Critical Habitat

The land the subject of this Certificate does not contain any identified critical habitats.

### No Acquisition by Public Authority

The land the subject of this certificate is NOT subject to acquisition by a public authority under a planning scheme or a draft planning instrument.

### State Significant Development - Land is not Subject

The land the subject of this Certificate is not the subject of an order by the Minister for Planning and Infrastructure regarding State Significant development pursuant to Section 89C(3).

### SEPP (Exempt & Complying Development Codes) 2008

Complying Development may be carried out on this land under the State Environmental Planning Policy SEPP (Exempt and Complying Development Codes) 2008.

Note: For land that is bushfire prone or a flood control lot MUST satisfy additional requirements of the SEPP (Exempt & Complying Development Codes) 2008. Please contact Council to discuss these requirements.

### Section 94 Development Contributions Plan

Council's Section 94 Plan applies to future commercial/ retail/ industrial development within the Mudgee Town Centre and subdivision within the Mid-Western Regional Council Local Government Area. Contact Council's Planning Department for any queries regarding this matter.



Section 94A Development Contributions Plan

Council's Section 94A Plan applies to future commercial/ retail/ industrial/ tourism development outside of the Mudgee Town Centre and Residential Development within the Mid-Western Regional Council Local Government Area. Contact Council's Planning Department for any queries regarding this matter.

Land May be Subject to Flood Management Plan

The land the subject of this certificate is not within the Flood Risk Precincts identified by the Mudgee Floodplain Management Study. The provisions of the Floodplain Management Plan may also apply to land that is affected by localised flooding.

Land is Not Bushfire Prone

The land the subject of this certificate has not been identified as being bush fire prone in accordance with the Environmental Planning and Assessment Act 1979 and Mid-Western Regional LGA Bush Fire Prone Land map.

**SECTION C: ADDITIONAL INFORMATION PURSUANT TO SECTION 149(5) OF THE ACT:**

Development Consent Has Not Been Granted

Council's records indicate that Development Consent with respect to the land the subject of this Certificate has NOT been granted within the last five years.

Tree Preservation Order

The land the subject of this Certificate may be affected by a Tree Preservation Order. An application is required from Council for removal of trees that are listed on Council's significant tree register.

For further information please contact  
Planning & Development Section



CUSTOMER SERVICE OFFICER

Certificate No. 1492 1342720



# Annex C

# **ADVANCE LEGAL SEARCHERS PTY LTD**

(ACN 147 943 842)

ABN 82 147 943 842

18/36 Osborne Road,  
Manly NSW 2095

Telephone: +612 9977 6713

Mobile: 0412 169 809

Email: [search@alsearchers.com.au](mailto:search@alsearchers.com.au)

19<sup>th</sup> July 2019

**LOTSEARCH PTY LTD**  
**Level 3, 68 Alfred Street,**  
**MILSONS POINT, NSW 2061**

**Attention: Rosemary Hulak,**

**RE:**

**132 – 134 Lions Drive,  
Mudgee  
Reference: LS007510\_EP**

## **Current Search**

Folio Identifier 2/1079362 (title attached)

DP 1079362 (plan attached)

Dated 19<sup>th</sup> July 2019

Registered Proprietor:

**SIMON VINCENT RAYNER**

**JENNIFER ANNE FREEMAN**

**Title Tree**  
**Lot 2 DP 1079362**

Folio Identifier 2/1079362

CA 91249

Conveyance Book 4449 No. 523

Declaration Book 2852 No. 834

Conveyance Book 2662 No. 208

Conveyance Book 2447 No. 837

Conveyance Book 2101 No. 490

Acknowledgement Book 1745 No. 949

Conveyance Book 1069 No. 532

\*\*\*\*

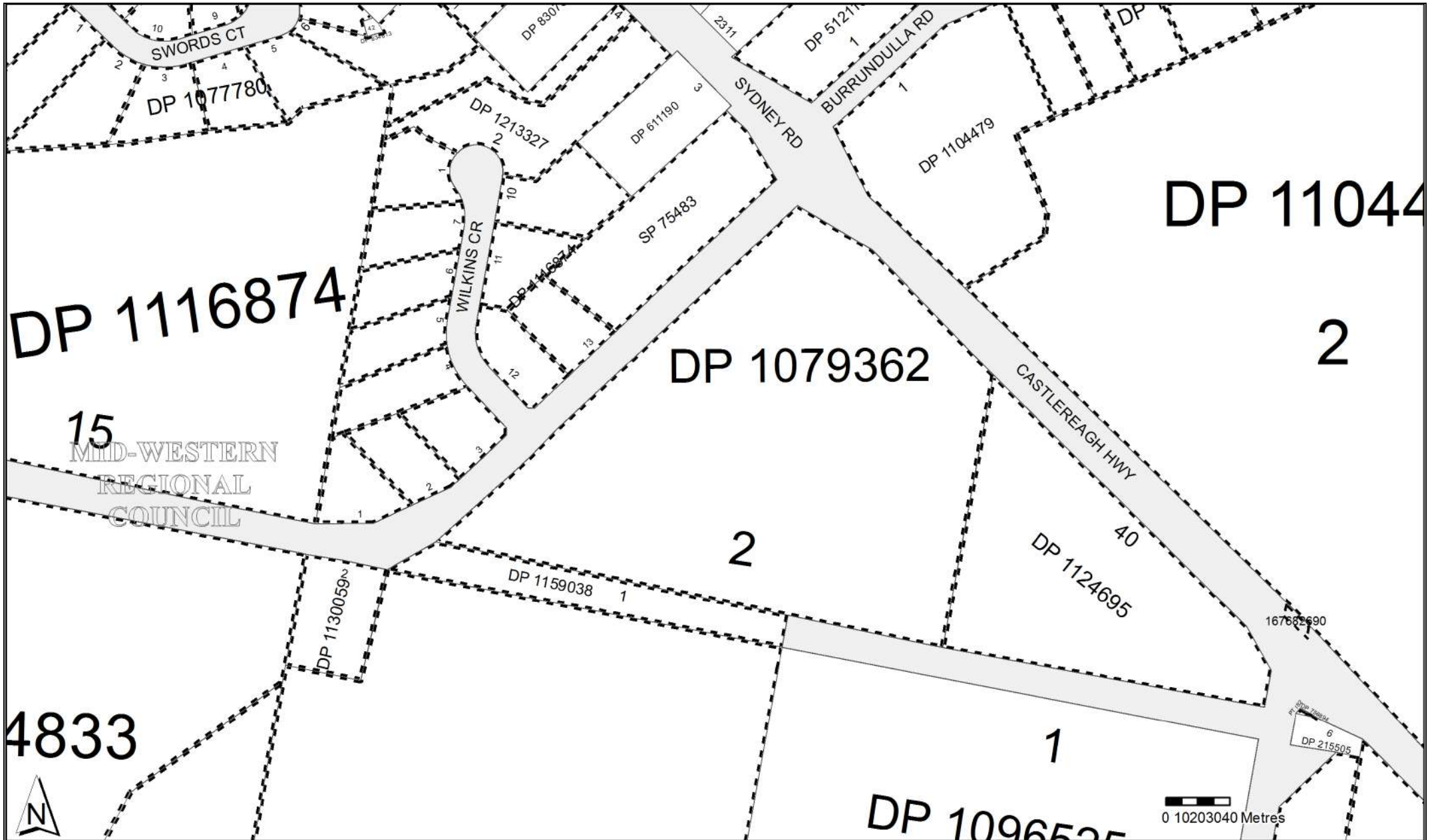
**Part Portion 182 Parish Mudgee**  
Granted to George Cox dated 8<sup>th</sup> April 1834




























\*\*\*\*

**Summary of proprietor(s)  
Lot 2 DP 1079362**

Year	Proprietor(s)
	<b>(Lot 2 DP 1079362)</b>
2005 – todate	Simon Vincent Rayner Jennifer Anne Freeman
	<b>(Lot D DP 164723 – Area 13 Acres 1 Rood 19 Perches – Conv Book 4449 No. 523)</b>
2005 – 2005	Simon Vincent Rayner Jennifer Anne Freeman
2004 – 2005	Simon Vincent Rayner / executor Jennifer Anne Freeman / executor Alice Emily Rayner, estate
	<b>(Lot D DP 164723 – Area 13 Acres 1 Rood 19 Perches – Conv Book 2852 No. 834)</b>
1967 – 2004	Vincent Arthur Rayner, grazier Alice Emily Rayner, his wife
	<b>(Lot D DP 164723 – Area 13 Acres 1 Rood 19 Perches – Conv Book 2662 No. 208)</b>
1963 – 1967	Andrew Alexander Pirie, stock and station agent Melva Elaine Pirie, his wife
	<b>(Lot D DP 164723 – Area 13 Acres 1 Rood 19 Perches – Conv Book 2447 No. 837)</b>
1958 – 1963	Grace Broadhead, wife of Charles Andrew Broadhead
	<b>(Part Portion 182 Parish Mudgee – Area 148 Acres – Conv Book 2101 No. 490)</b>
1949 – 1958	Geoffrey Charles Cox, grazier
	<b>(Part Portion 182 Parish Mudgee – Area 148 Acres – Acknowledgement Book 1745 No. 949)</b>
1936 – 1949	William Jones, carrier / executor George Arthur Jones, carrier / executor Robert Percival Jones also known as Robert Jones, estate
	<b>(Part Portion 182 Parish Mudgee – Area 148 Acres – Conv Book 1069 No. 532)</b>
1915 – 1936	Robert Jones, carrier





	Status	Surv/Comp	Purpose
DP512115 Lot(s): 1	 DP1253651	REGISTERED	SURVEY
			SUBDIVISION
DP756894 Lot(s): 182	 UNCONVERTIBLE OLD SYSTEM RESIDUE. FEE APPEARS TO REMAIN IN CONVEYANCE BOOK 2423 NO. 761. CERTIFICATE OF TITLE CREATION WILL REQUIRE A DEPOSITED PLAN OF SURVEY AND A PRIMARY APPLICATION BASED UPON ADVERSE POSSESSION		
DP1051128 Lot(s): 100, 101	 DP611190	HISTORICAL	SURVEY
			SUBDIVISION
DP1051504 Lot(s): 2	 DP1117044	REGISTERED	SURVEY
			EASEMENT
Lot(s): 2, 3, 4, 5, 6, 7	 DP248983	HISTORICAL	SURVEY
	 DP1013363	HISTORICAL	SURVEY
	 DP1031670	HISTORICAL	SURVEY
			OLD SYSTEM CONVERSION
			RESUMPTION OR ACQUISITION
			SUBDIVISION
DP1069441 Lot(s): 3	 DP756894	HISTORICAL	COMPILATION
			CROWN ADMIN NO.
Lot(s): 4	 DP445944	HISTORICAL	COMPILATION
			UNRESEARCHED
DP1077780 Lot(s): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11	 DP834613	HISTORICAL	SURVEY
	 DP1077777	HISTORICAL	SURVEY
			SUBDIVISION
			SUBDIVISION
DP1079362 Lot(s): 2	 CA91249 - LOT 2 DP1079362		
DP1104479 Lot(s): 1	 DP1117044	REGISTERED	SURVEY
			EASEMENT
Lot(s): 1, 2	 DP248983	HISTORICAL	SURVEY
	 DP445944	HISTORICAL	COMPILATION
	 DP1013363	HISTORICAL	SURVEY
	 DP1031670	HISTORICAL	SURVEY
	 DP1051504	HISTORICAL	SURVEY
	 DP1064045	HISTORICAL	SURVEY
			OLD SYSTEM CONVERSION
			UNRESEARCHED
			RESUMPTION OR ACQUISITION
			SUBDIVISION
			SUBDIVISION
			SUBDIVISION
DP1116874 Lot(s): 7	 DP1228039	REGISTERED	SURVEY
			EASEMENT
Lot(s): 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15	 DP834613	HISTORICAL	SURVEY
	 DP1077777	HISTORICAL	SURVEY
			SUBDIVISION
			SUBDIVISION
DP1124695 Lot(s): 40	 CA119565 - LOT 40 DP1124695		
DP1130059 Lot(s): 2, 3	 DP577656	HISTORICAL	COMPILATION
	 DP756894	HISTORICAL	COMPILATION
	 CA88303 - LOT 41 DP756894		
			SUBDIVISION
			CROWN ADMIN NO.
DP1159038 Lot(s): 1	 NSW GAZ. 25-03-2011 Folio : 2289 CLOSED ROAD LOT 1 DP1159038. ERRATUM GAZ. 1-4-2011 FOL. 2398		

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



	Status	Surv/Comp	Purpose
DP1164833			
Lot(s): 4, 5			
 DP756894	HISTORICAL	COMPILATION	CROWN ADMIN NO.
Lot(s): 5			
 DP577656	HISTORICAL	COMPILATION	SUBDIVISION
DP1171194			
Lot(s): 4, 5, 8			
 DP731165	HISTORICAL	SURVEY	SUBDIVISION
 DP1077777	HISTORICAL	SURVEY	SUBDIVISION
DP1213327			
Lot(s): 1			
 DP1228039	REGISTERED	SURVEY	EASEMENT
Lot(s): 1, 2			
 DP834613	HISTORICAL	SURVEY	SUBDIVISION
 DP1077777	HISTORICAL	SURVEY	SUBDIVISION
 DP1116874	HISTORICAL	SURVEY	SUBDIVISION
Road			
Polygon Id(s): 167682690			
 CA110982 - LOT 3 DP1013363			
 NSW GAZ.	01-06-2012		Folio : 2317
DEDICATED PUBLIC ROAD			
LOT 3 DP1013363			
SP75483			
 DP831326	HISTORICAL	SURVEY	SUBDIVISION
 SP95287	REGISTERED	COMPILATION	STRATA SUBDIVISION PLAN

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Plan	Surv/Comp	Purpose
DP164694	SURVEY	UNRESEARCHED
DP215505	SURVEY	ROAD OR MOTORWAY
DP512115	SURVEY	SUBDIVISION
DP611190	SURVEY	SUBDIVISION
DP756894	COMPILATION	CROWN ADMIN NO.
DP830762	SURVEY	SUBDIVISION
DP834613	SURVEY	SUBDIVISION
DP868161	SURVEY	SUBDIVISION
DP873477	SURVEY	SUBDIVISION
DP1051128	SURVEY	SUBDIVISION
DP1051504	SURVEY	SUBDIVISION
DP1069441	SURVEY	SUBDIVISION
DP1077780	SURVEY	SUBDIVISION
DP1079362	COMPILATION	LIMITED FOLIO CREATION
DP1096525	SURVEY	CONSOLIDATION
DP1104479	SURVEY	SUBDIVISION
DP1116874	SURVEY	SUBDIVISION
DP1124695	COMPILATION	LIMITED FOLIO CREATION
DP1130059	SURVEY	SUBDIVISION
DP1159038	SURVEY	ROADS ACT, 1993
DP1164833	SURVEY	SUBDIVISION
DP1171194	SURVEY	SUBDIVISION
DP1213327	SURVEY	SUBDIVISION
SP75483	COMPILATION	STRATA PLAN

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**LAND AND PROPERTY INFORMATION New South Wales**  
 1 Prince Albert Road, Queens Square, Sydney 2000  
 Telephone 02 9228 6877



**BK 4449 NO 523**

CA NUMBER  
**91249**

**DEEDS INDEX  
 PARTICULARS**

**PRIVACY NOTE: this information is legally required and will become part of the public record**

(A) Delivery Box Name, Address/DX

**28A** LLPN: **THOMSON**  
**124247U** **LAWPOINT GALLOWAYS**  
 Phone: (02) 9233 1011  
 DX 340 SYDNEY

Telephone no  
 Reference **DEAR RAYNER**

(B) Nature of Instrument Date of Instrument

DEED OF ACKNOWLEDGEMENT 20 December 2004

(C)

Locality of the land	LINK CONVEYANCE-for old system land			PRINCIPAL DEED
	Book	Number	Whole/Part	
Mudgee	2852	834	Whole	Conveyance
LOCAL GOVT. AREA Mid-Western Regional	PARISH Mudgee		COUNTY Wellington	

NOTING

**NOTING**

(D)

Entry	GIVEN NAMES/COMPANY NAME	FAMILY NAME
V	SIMON VINCENT	RAYNER
V	JENNIFER ANNE	FREEMAN
P	SIMON VINCENT	RAYNER
P	JENNIFER ANNE	FREEMAN
V	ALICE EMILY	RAYNER (DECEASED)

(E) I, Geoffrey Keith Dear of 70 Market Street, Mudgee

certify that for the purposes of section 184D(3) of the Conveyancing Act 1919 that:

- the registration copy is a true copy of the original and
- the above index particulars of the original instrument [and on the annexure(s)] are complete and correct.

Signed [Redacted] Date 24 January 2005

N.S.W. STAMP DUTY \$10 — PAID

ACKNOWLEDGMENT made this 20th day of December

Two Thousand and Four under the Wills Probate & Administration Act 1898 between SIMON VINCENT RAYNER of 290 Burrundulla Road Mudgee in the State of New South Wales and JENNIFER ANNE FREEMAN of 146 Cherry Road, Eleebana in the said State Executors of the duly proved Will of ALICE EMILY RAYNER late of 66 Castlereagh Highway, Mudgee in the said State, Widow, deceased of the One Part AND the said SIMON VINCENT RAYNER and JENNIFER ANNE FREEMAN Devisees under the Will of the Other Part WHEREAS the said Deceased by her Will dated 25 May, 1993 gave devised and bequeathed the whole of her estate both real and personal of whatsoever nature and wheresoever situate unto her Executors upon trust for her said son and her said daughter as should survive her in equal shares

AND WHEREAS the said son and said daughter did not predecease the Deceased

AND WHEREAS Probate thereof Number 112149/04 was granted to the Executors by the Supreme Court of New South Wales on 28 July, 2004

AND WHEREAS the Deceased was seised of an estate in fee simple in the land set out in the Schedule hereto

AND WHEREAS the Executors have completed their executorial duties

NOW THIS DEED WITNESSETH and acknowledges that the said Devisees now hold the said lands in equal shares as tenants in common

THE SCHEDULE HEREINBEFORE REFERRED TO

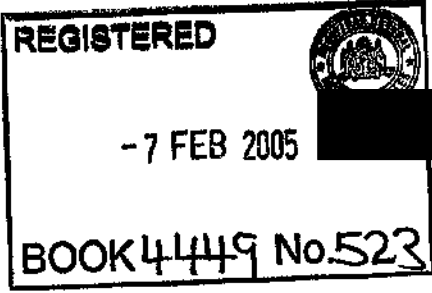
ALL THAT piece or parcel of land situate in the Mid-Western Regional Local Government Area and State of New South Wales containing by

admeasurement THIRTEEN ACRES ONE ROOD NINETEEN PERCHES  
being part of Portion 182 Parish of Mudgee and County of Wellington and  
being Lot D in Plan registered number 62835(L) COMMENCING on the  
southwestern side of Trunk Road No. 55 from Mudgee to Sydney at the  
northeastern corner of the land comprised in Conveyance Registered No. 490  
Book 2101 and bounded thence on the east by the eastern side of the land  
comprised in the said Conveyance bearing 179°51' for 865.1 links bounded  
thence on the south by the northern side of a road of variable widths bearing  
270°54'20" for 1607.4 links bounded thence on the northwest by the  
southeastern side of a proposed road 100 links wide and variable bearing  
36°23' for 1619.3 links bounded thence on the northeast by part of the said  
south western side of Trunk Road No. 55 bearing 125°45' for 793.3 links to the  
point of commencement EXCEPTING THEREOUT land resumed for Main  
Roads purposes under the Public Works Act 1912 and the Main Roads Act  
1924-1960 described as Lot 3 in Deposited Plan No. 215505.

IN WITNESS WHEREOF the said SIMON VINCENT RAYNER and  
JENNIFER ANNE FREEMAN have hereunto affixed their hands and seals on  
the day and year first hereinbefore written.

SIGNED SEALED AND DELIVERED)

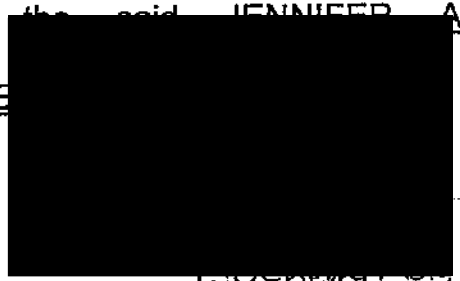
by the said SIMON VINCENT  
RAYNER in the presence of:



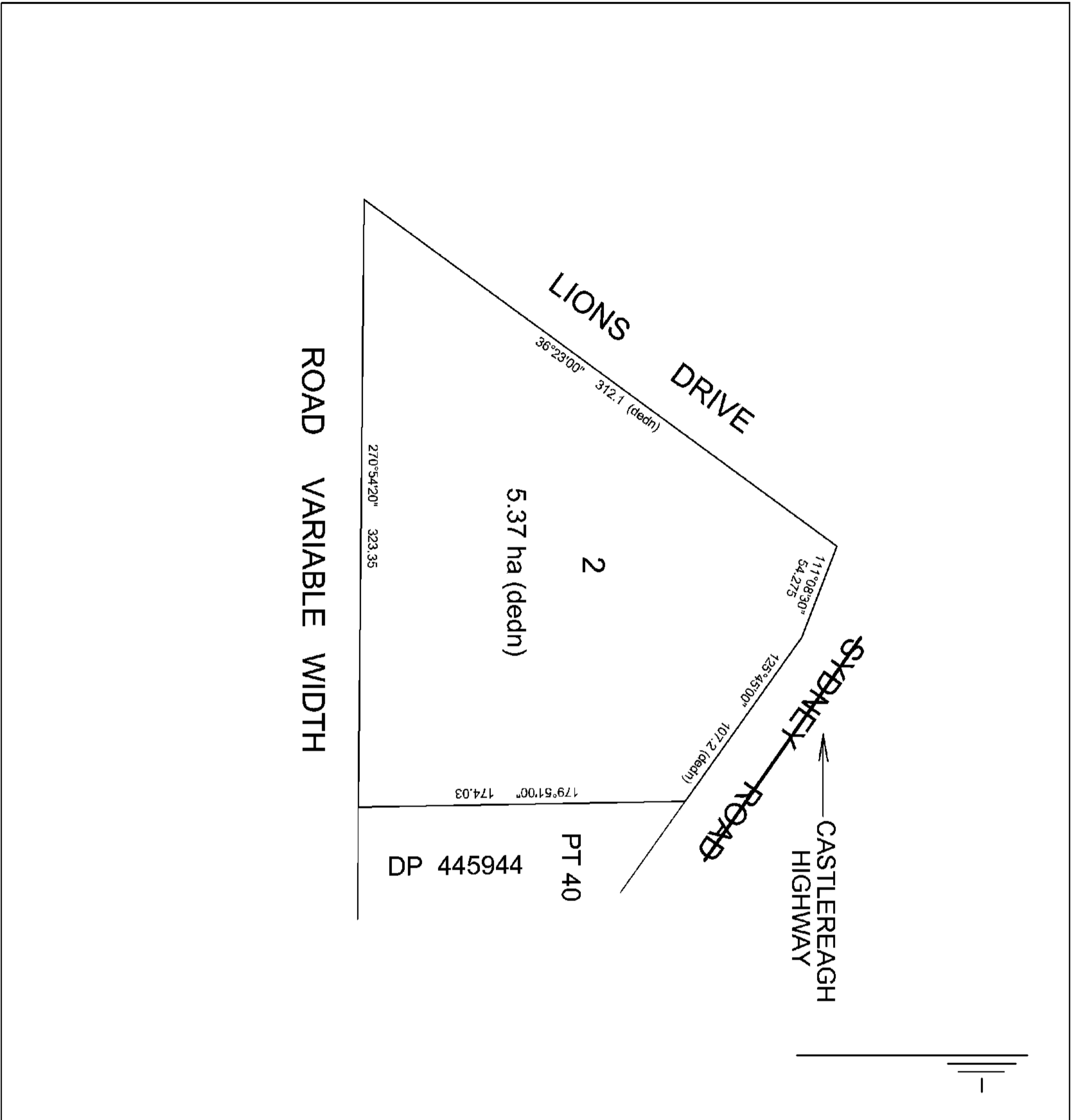
*Geoffrey Keith Dean 70 Madral St Mudgee*  
SIGNED SEALED AND DELIVERED

by the said JENNIFER ANNE  
FREEMAN

*Jennifer Freeman*



(witness)  
150 Channing St, Eleebang, 2282



e-departmental

**DP 1079362** (E)

Registered:  16.2.2005

Title System: OLD SYSTEM

Purpose: LIMITED TITLE CREATION

Ref. Map: P5487-44; PARISH #

Last Plan: DP 164723

C.A. 91249

PLAN OF LAND COMPRISED IN

DEED BK. 4449 NO. 523

BEING PART OF LOT D IN DP 164723  
 AFTER ROAD ACTION

Lengths are in metres. Reduction Ratio - NTS

Sheet 1 of 1 sheet(s)

L.G.A. MID-WESTERN REGIONAL

LOCALITY: BURRUNDULLA

PARISH: MUDGEE

COUNTY: WELLINGTON (32)

THIS PLAN WAS PREPARED SOLELY TO  
 IDENTIFY THE LAND IN THE ABOVE DEED  
 AND THE BOUNDARIES HAVE NOT BEEN  
 INVESTIGATED BY THE REGISTRAR GENERAL

THIS PLAN IS NOT A CURRENT PLAN IN TERMS OF  
 S.7A CONVEYANCING ACT 1919.

PLAN USED FOR COMPILATION:

DP 215505

LPI Ref.: TCB13/12



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH  
-----

SEARCH DATE  
-----

19/7/2019 7:53AM

FOLIO: 2/1079362  
-----

First Title(s): OLD SYSTEM  
Prior Title(s): BK 4449 NO 523

<u>Recorded</u>	<u>Number</u>	<u>Type of Instrument</u>	<u>C.T. Issue</u>
16/2/2005	DP1079362	DEPOSITED PLAN	FOLIO CREATED EDITION 1
16/2/2005	CA91249	CONVERSION ACTION	
27/2/2017	AM189622	DEPARTMENTAL DEALING	

\*\*\* END OF SEARCH \*\*\*

advlegs

PRINTED ON 19/7/2019



NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/1079362

SEARCH DATE	TIME	EDITION NO	DATE
19/7/2019	7:43 AM	1	16/2/2005

LAND

LOT 2 IN DEPOSITED PLAN 1079362  
AT BURRUNDULLA  
LOCAL GOVERNMENT AREA MID-WESTERN REGIONAL  
PARISH OF MUDGEES COUNTY OF WELLINGTON  
TITLE DIAGRAM DP1079362

FIRST SCHEDULE

SIMON VINCENT RAYNER  
JENNIFER ANNE FREEMAN  
AS TENANTS IN COMMON IN EQUAL SHARES (CA91249)

SECOND SCHEDULE (2 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 LIMITED TITLE. LIMITATION PURSUANT TO SECTION 28T(4) OF THE REAL PROPERTY ACT, 1900. THE BOUNDARIES OF THE LAND COMPRISED HEREIN HAVE NOT BEEN INVESTIGATED BY THE REGISTRAR GENERAL.

NOTATIONS

UNREGISTERED DEALINGS: NIL

\*\*\* END OF SEARCH \*\*\*

advlegs

PRINTED ON 19/7/2019





# Annex D



# LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

**Date: 22 Jul 2019 16:10:07**

**Reference: LS007510 EP**

**Address: 132-134 Lions Drive, Mudgee, NSW 2850**

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 Confidences

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

LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

## Dataset Listing

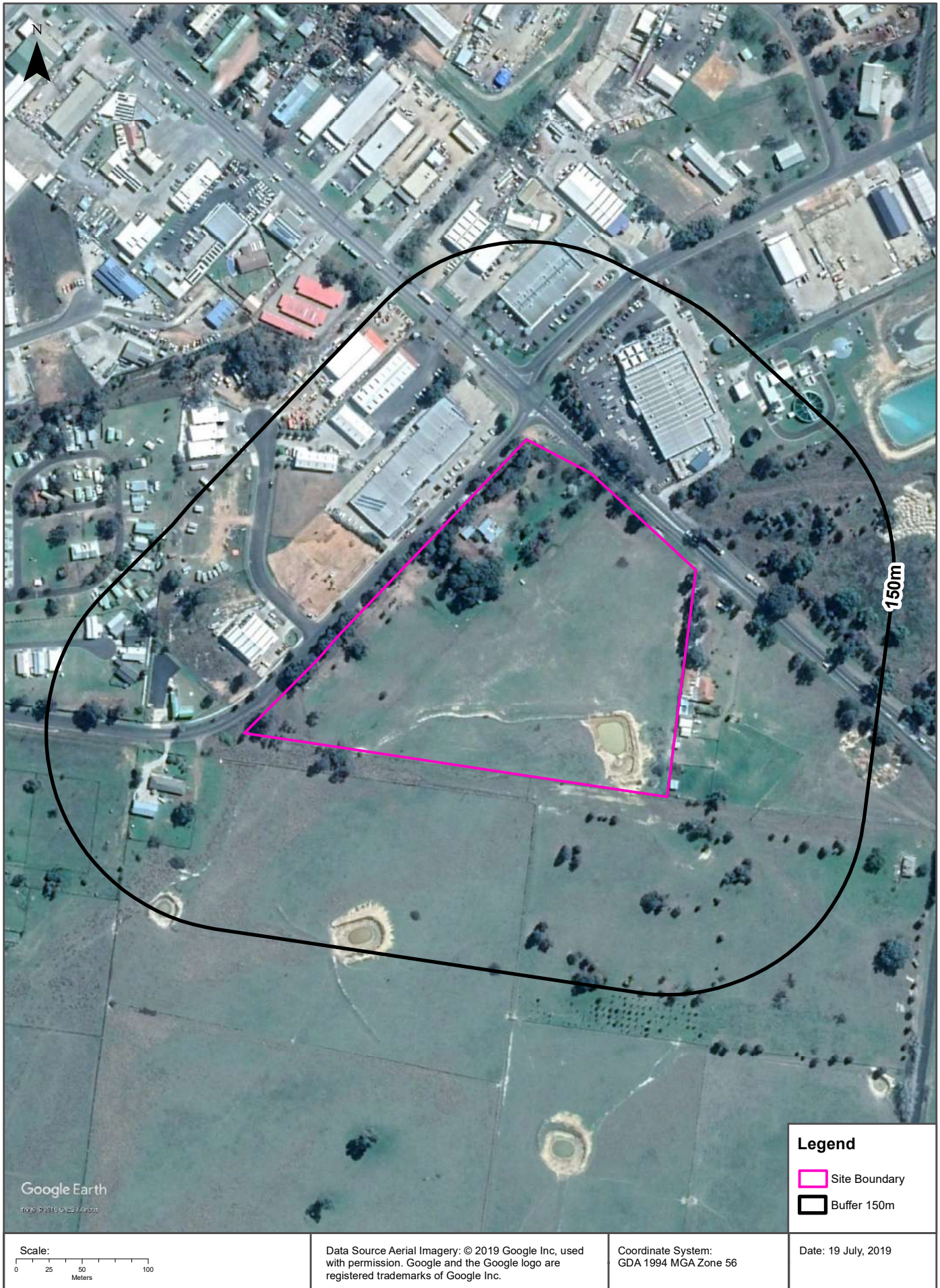
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	22/07/2019	22/07/2019	Daily	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	11/04/2019	10/04/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	17/07/2019	09/07/2019	Monthly	1000	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	10/07/2019	10/07/2019	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	01/07/2019	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	07/05/2019	07/03/2017	Quarterly	1000	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	01/07/2019	01/07/2019	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program	Department of Defence	01/07/2019	01/07/2019	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	01/07/2019	01/07/2019	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	01/07/2019	01/07/2019	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	13/12/2018	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	27/06/2019	27/06/2019	Monthly	1000	0	0	1
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	27/06/2019	27/06/2019	Monthly	1000	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	27/06/2019	27/06/2019	Monthly	1000	3	3	5
UPSS Environmentally Sensitive Zones	Environment Protection Authority	14/04/2015	12/01/2010	As required	1000	1	1	1
UBD Business to Business Directory 1991 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	1	1
UBD Business to Business Directory 1991 (Road & Area Matches)	Hardie Grant			Not required	150	-	19	19
UBD Business Directory 1982 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1982 (Road & Area Matches)	Hardie Grant			Not required	150	-	16	16
UBD Business Directory 1970 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1970 (Road & Area Matches)	Hardie Grant			Not required	150	-	5	5
UBD Business Directory 1961 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1961 (Road & Area Matches)	Hardie Grant			Not required	150	-	4	4
UBD Business Directory 1950 (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directory 1950 (Road & Area Matches)	Hardie Grant			Not required	150	-	1	1
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	0	4
UBD Business Directory Drycleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	3	4
Points of Interest	NSW Department of Finance, Services & Innovation	11/04/2019	10/04/2019	Quarterly	1000	0	0	9
Tanks (Areas)	NSW Department of Finance, Services & Innovation	11/04/2019	11/04/2019	Quarterly	1000	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Tanks (Points)	NSW Department of Finance, Services & Innovation	11/04/2019	10/04/2019	Quarterly	1000	0	0	0
Major Easements	NSW Department of Finance, Services & Innovation	11/04/2019	11/04/2019	Quarterly	1000	0	0	1
State Forest	NSW Department of Finance, Services & Innovation	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	16/01/2019	14/11/2018	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Botany Groundwater Management Zones	NSW Department of Primary Industries	15/03/2018	01/10/2005	As required	1000	0	0	0
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	0	0	88
Geological Units 1:250,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	2	-	4
Geological Structures 1:250,000	NSW Dept. of Industry, Resources & Energy	20/08/2014		None planned	1000	0	-	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Soil Landscapes	NSW Office of Environment & Heritage	12/08/2014		None planned	1000	1	-	2
Atlas of Australian Soils	CSIRO	19/05/2017	17/02/2011	As required	1000	1	1	2
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning and Environment	22/07/2019	28/06/2019	Weekly	500	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	1	1	2
Dryland Salinity Potential of Western Sydney	NSW Office of Environment & Heritage	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	NSW Department of Finance, Services & Innovation	11/04/2019	11/04/2019	Quarterly	1000	0	0	0
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning and Environment	22/07/2019	07/12/2018	Weekly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning and Environment	22/07/2019	05/07/2019	Weekly	1000	1	8	17
Commonwealth Heritage List	Australian Government Department of the Environment and Energy - Heritage Branch	16/01/2019	31/07/2018	Unknown	1000	0	0	0
National Heritage List	Australian Government Department of the Environment and Energy - Heritage Branch	16/01/2019	28/09/2018	Unknown	1000	0	0	0
State Heritage Register - Curtilages	NSW Office of Environment & Heritage	15/07/2019	09/11/2018	Quarterly	1000	0	0	0
Environmental Planning Instrument Heritage	NSW Department of Planning and Environment	22/07/2019	28/06/2019	Weekly	1000	0	0	1
Bush Fire Prone Land	NSW Rural Fire Service	28/05/2019	05/04/2019	Quarterly	1000	0	0	0
Central Tablelands Vegetation	NSW Office of Environment & Heritage	21/11/2015	31/10/2010	Unknown	1000	0	0	0
Ramsar Wetlands of Australia	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	2	2	3
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	2	2	11
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	22/07/2019	22/07/2019	Weekly	10000	-	-	-

# Aerial Imagery 2018

132-134 Lions Drive, Mudgee, NSW 2850



# Contaminated Land & Waste Management Facilities

132-134 Lions Drive, Mudgee, NSW 2850

## List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist (m)	Direction
N/A	No records in buffer								

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

132-134 Lions Drive, Mudgee, NSW 2850

## Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
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 dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
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 dataset buffer:

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

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



## PFAS Investigation Sites

132-134 Lions Drive, Mudgee, NSW 2850

### EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Id	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority  
© State of New South Wales through the Environment Protection Authority

### Defence PFAS Investigation & Management Program

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

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

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

### Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

## Defence Sites

132-134 Lions Drive, Mudgee, NSW 2850

### Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

## EPA Other Sites with Contamination Issues

132-134 Lions Drive, Mudgee, NSW 2850

### EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

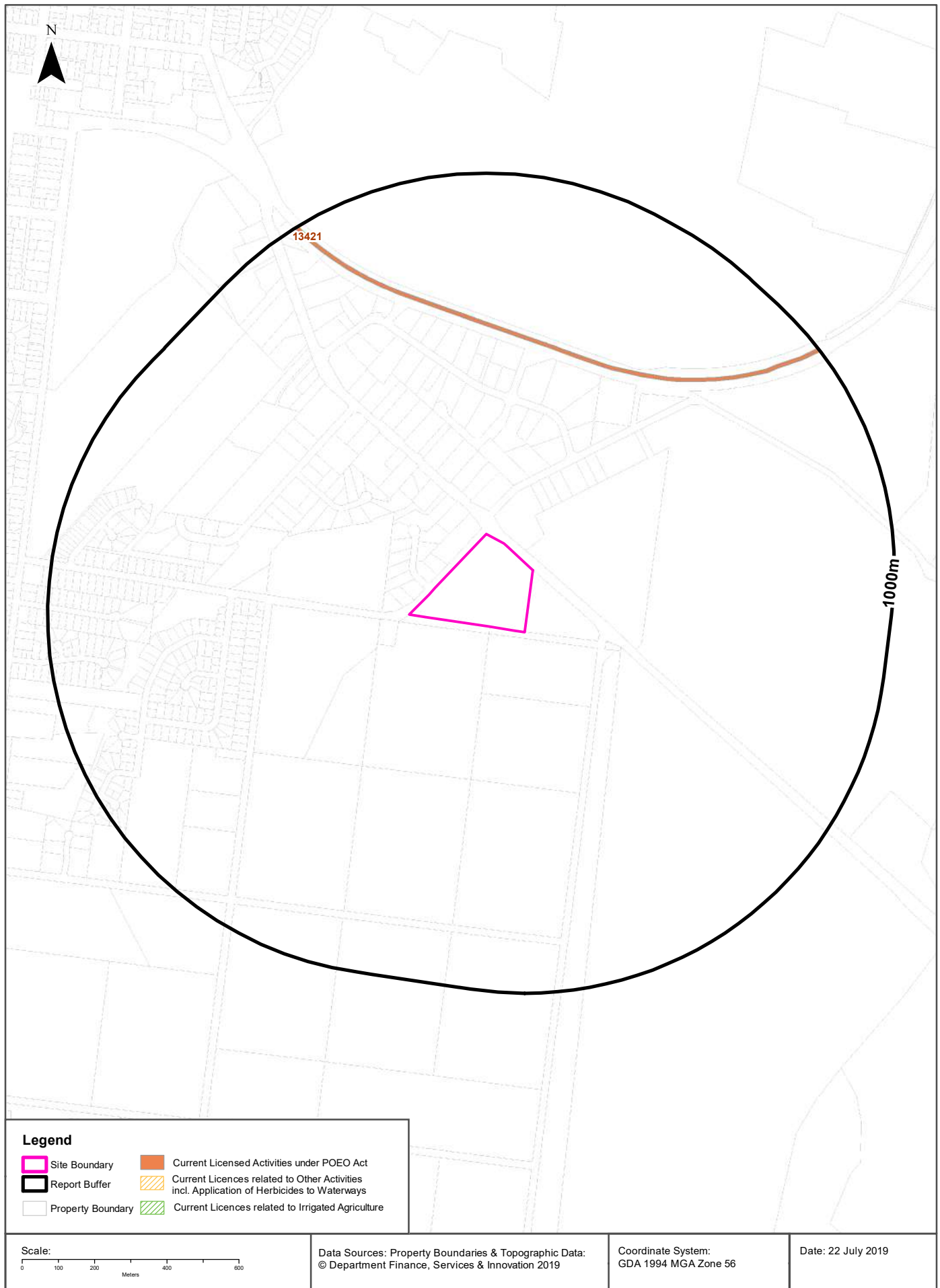
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority  
© State of New South Wales through the Environment Protection Authority

# Current EPA Licensed Activities

132-134 Lions Drive, Mudgee, NSW 2850



## EPA Activities

132-134 Lions Drive, Mudgee, NSW 2850

## Licensed Activities under the POEO Act 1997

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

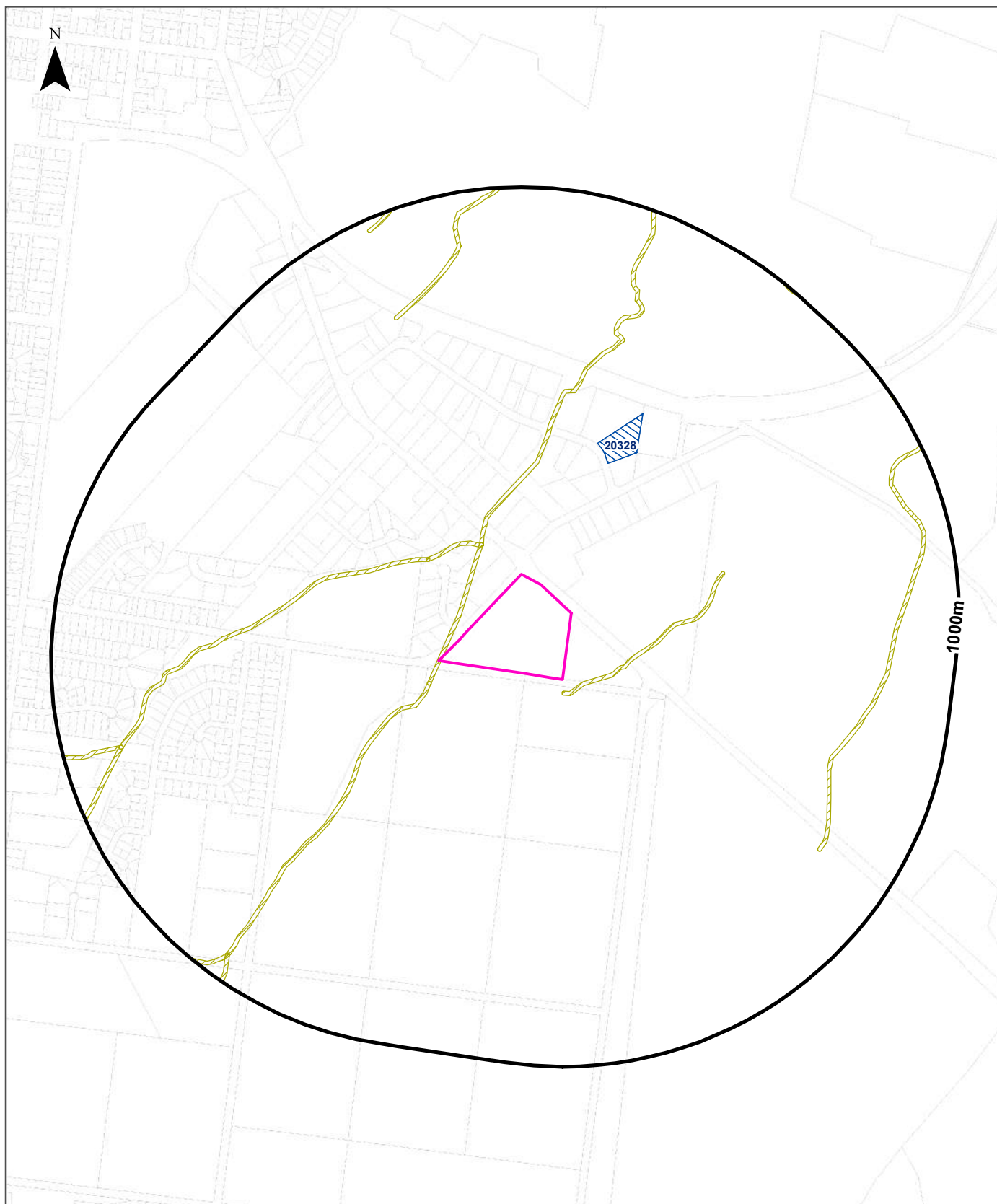
EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
13421	JOHN HOLLAND RAIL PTY LTD		PO Box 215 , PARRAMATTA, NSW 2124		Railway systems activities	Network of Features	544m	North

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

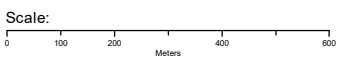
# Delicensed & Former Licensed EPA Activities

132-134 Lions Drive, Mudgee, NSW 2850



### Legend

- Site Boundary
- Report Buffer
- Property Boundary
- Delicensed Activities still Regulated by EPA
- Former Licensed/Regulated Activities (revoked or surrendered)
- Surrendered Licences related to Other Activities on Waterways incl. Application of Herbicides



Property Boundary Data Source:  
© Department Finance, Services & Innovation 2019

Coordinate System:  
GDA 1994 MGA Zone 56

Date: 22 July 2019

## EPA Activities

132-134 Lions Drive, Mudgee, NSW 2850

### Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset 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

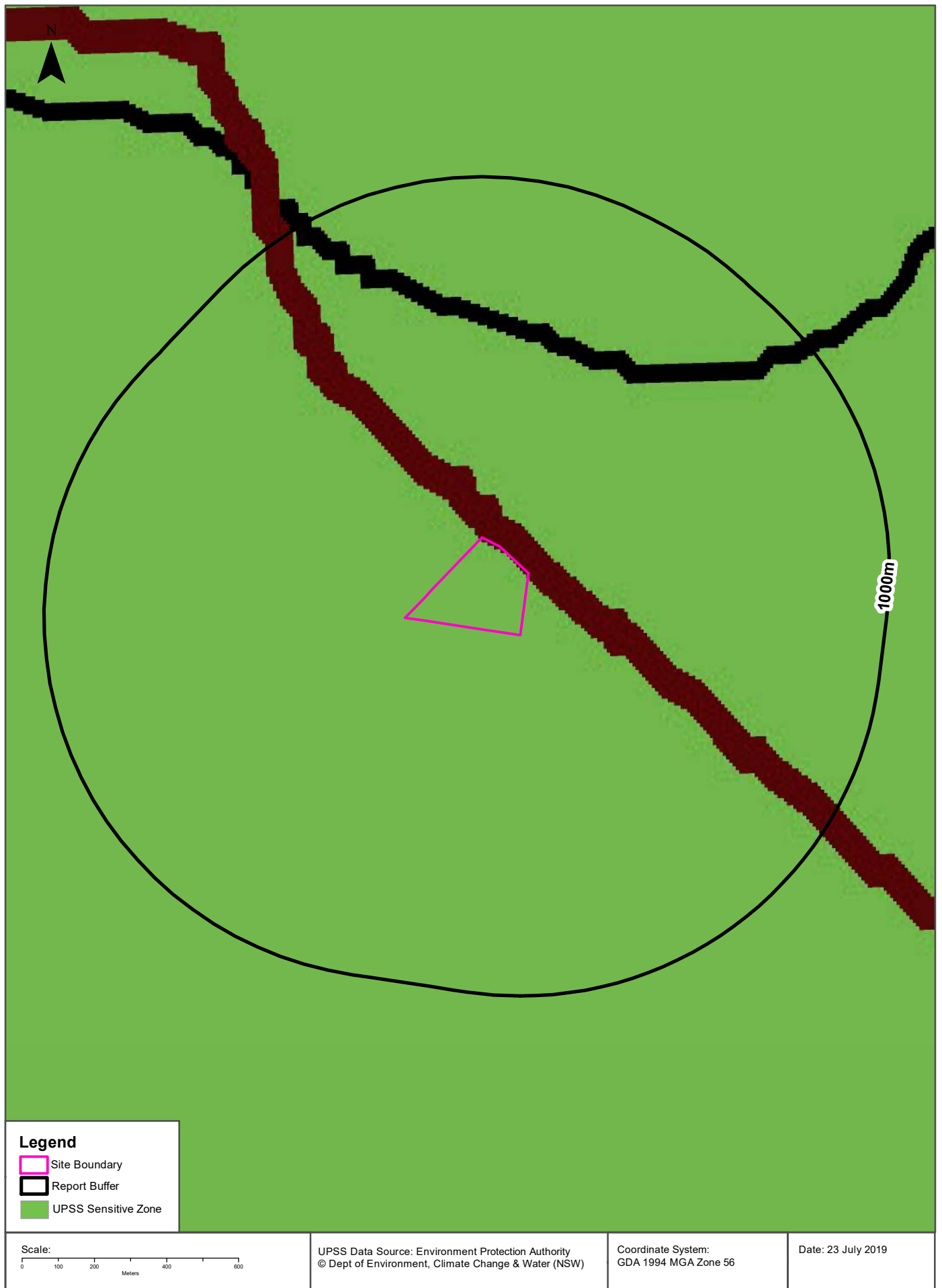
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	Onsite
20328	COUNTRY SCRAP & STEEL PTY LIMITED	Country Scrap & Steel, 30 Industrial Avenue, MUDGEE	Surrendered	11/09/2013	Non-thermal treatment of general waste	Premise Match	357m	North East
20328	COUNTRY SCRAP & STEEL PTY LIMITED	Country Scrap & Steel, 30 Industrial Avenue, MUDGEE	Surrendered	11/09/2013	Waste storage - other types of waste	Premise Match	357m	North East

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

# UPSS Sensitive Zones

132-134 Lions Drive, Mudgee, NSW 2850



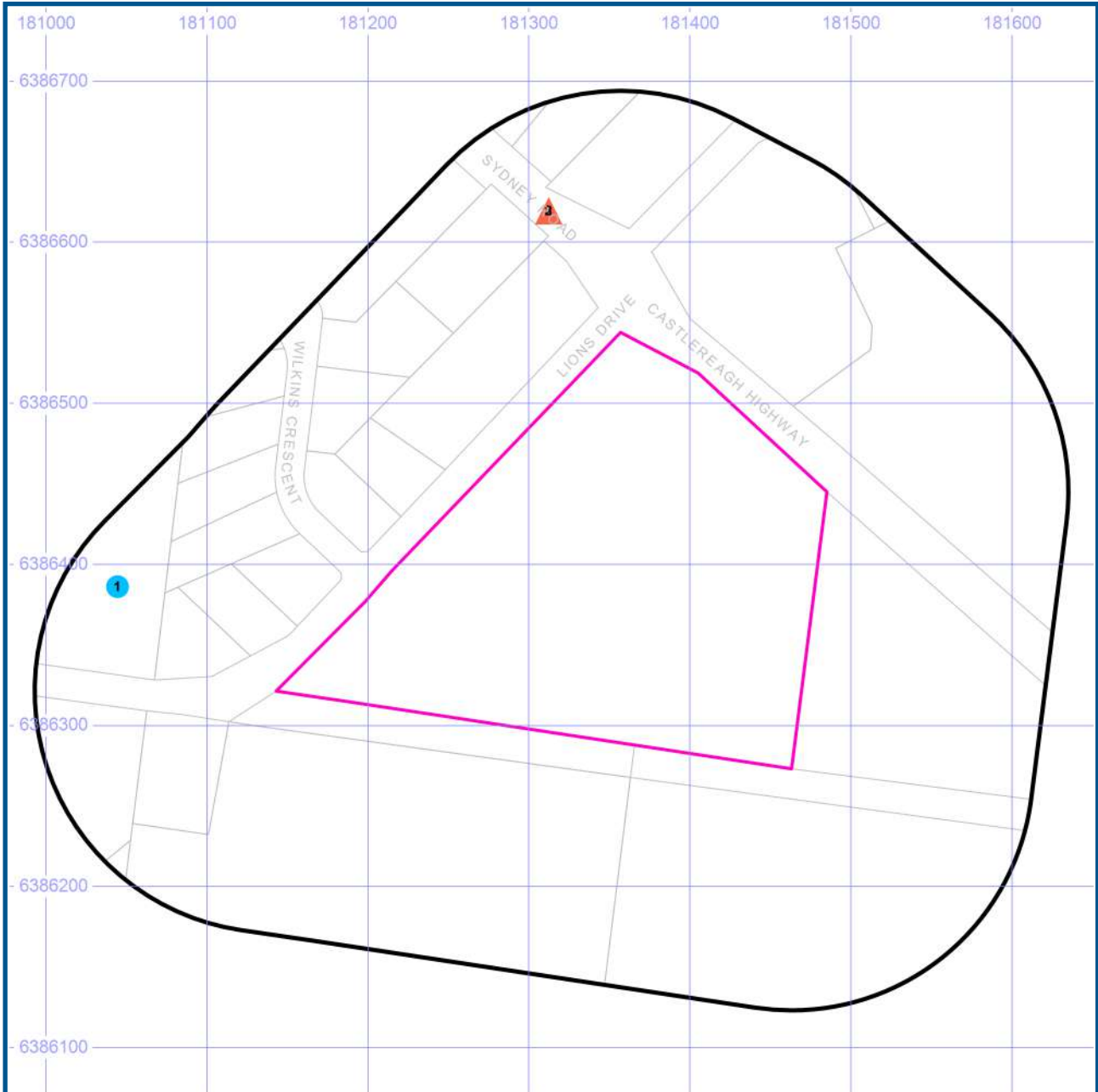










# Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850



## 1991 Business to Business Directory Records



	Site Boundary		Business directory records mapped to a specific premise	 N
	Buffer 150m		Business directory records mapped to a road intersection	
	Property Boundaries		Business directory records mapped to a road corridor	
			Business directory records mapped to a general area	

Projected Coordinate System:  
GDA94 MGA Zone 56

Data Sources: Universal Business Directories (UBD), derived data, licensed from Hardie Grant.  
Property Boundaries © NSW Department Finance, Services & Innovation 2019

## Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850

### 1991 Business to Business Directory Records Premise or Road Intersection Matches

Records from the 1991 UBD Business to Business Directory, mapped to a premise or road intersection, within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	CARAVAN SALES, SERVICE &/OR HIRERS	Mudgee Caravan Centre., 64 Sydney Rd	121586	Premise Match	76m	West

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

### 1991 Business to Business Directory Records Road or Area Matches

Records from the 1991 UBD Business to Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
2	AUTO ELECTRICIANS	Bartolo Auto-Electrical Repairs., 33 Sydney Rd	121513	Road Match	21m
3	BUILDERS &/OR BUILDING CONTRACTORS	Bennett K. W, Sydney Rd	121541	Road Match	21m
	RESTAURANTS	Henry Lawson Restaurant., The Sydney Rd	128569	Road Match	21m
	CARRIERS &/OR CARTAGE CONTRACTORS	Jonas R. & Co. Transport., Sydney Rd	121593	Road Match	21m
	BRICK MFRS. &/OR DISTS	Jones R. & Co. Transport., Sydney Rd	121535	Road Match	21m
	WEIGHBRIDGES	Jones R. & Co. Transport., Sydney Rd	128668	Road Match	21m
	ROAD TRANSPORT SERVICES - INTRASTATE	Jones. R. & Co. Transport., Sydney Rd	128575	Road Match	21m
	MOTOR CAR DEALERS-NEW &/OR USED	Langdon & Bartley., Sydney Rd	128445	Road Match	21m
	MOTOR ACCESSORIES-RETAIL	Lengdon & Bartley., Sydney Rd	128432	Road Match	21m
	LOCAL BODIES	Mudgee Branch Aid-Retarded Persons N S W., Sydney Rd	128394	Road Match	21m
	ASSOCIATIONS &/OR SOCIETIES	Mudgee Branch Aid-Retarded Persons N.S.W., Sydney Rd	121471	Road Match	21m
	BRICK MFRS. &/OR DISTS	Mudgee Brick & Tile Supplies., Sydney Rd	121536	Road Match	21m
	GRAVEL, SAND &/OR SOIL SUPPLIES	Mudgee Brick & Tile Supplies., Sydney Rd	128299	Road Match	21m
	TILE - FLOOR &/OR WALL - MFRS. &/OR IMPS. &/OR MERCHANTS	Mudgee Brick & Tile Supplies., Sydney Rd	128629	Road Match	21m
	MOTELS	New Mudgee Motel., Sydney Rd	128427	Road Match	21m
MIXED BUSINESSES	Rynsco Pty Ltd. Service Station., Sydney Rd	128418	Road Match	21m	

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
3	MOTOR GARAGES & SERVICE STATIONS	Rynsco Pty. Ltd Service Station., Sydney Rd	128475	Road Match	21m
	HIRE SERVICES	Town & Country Sevice Station., Sydney Rd	128333	Road Match	21m
	MOTOR GARAGES & SERVICE STATIONS	Town & Country Service Station., Sydney Rd	128478	Road Match	21m

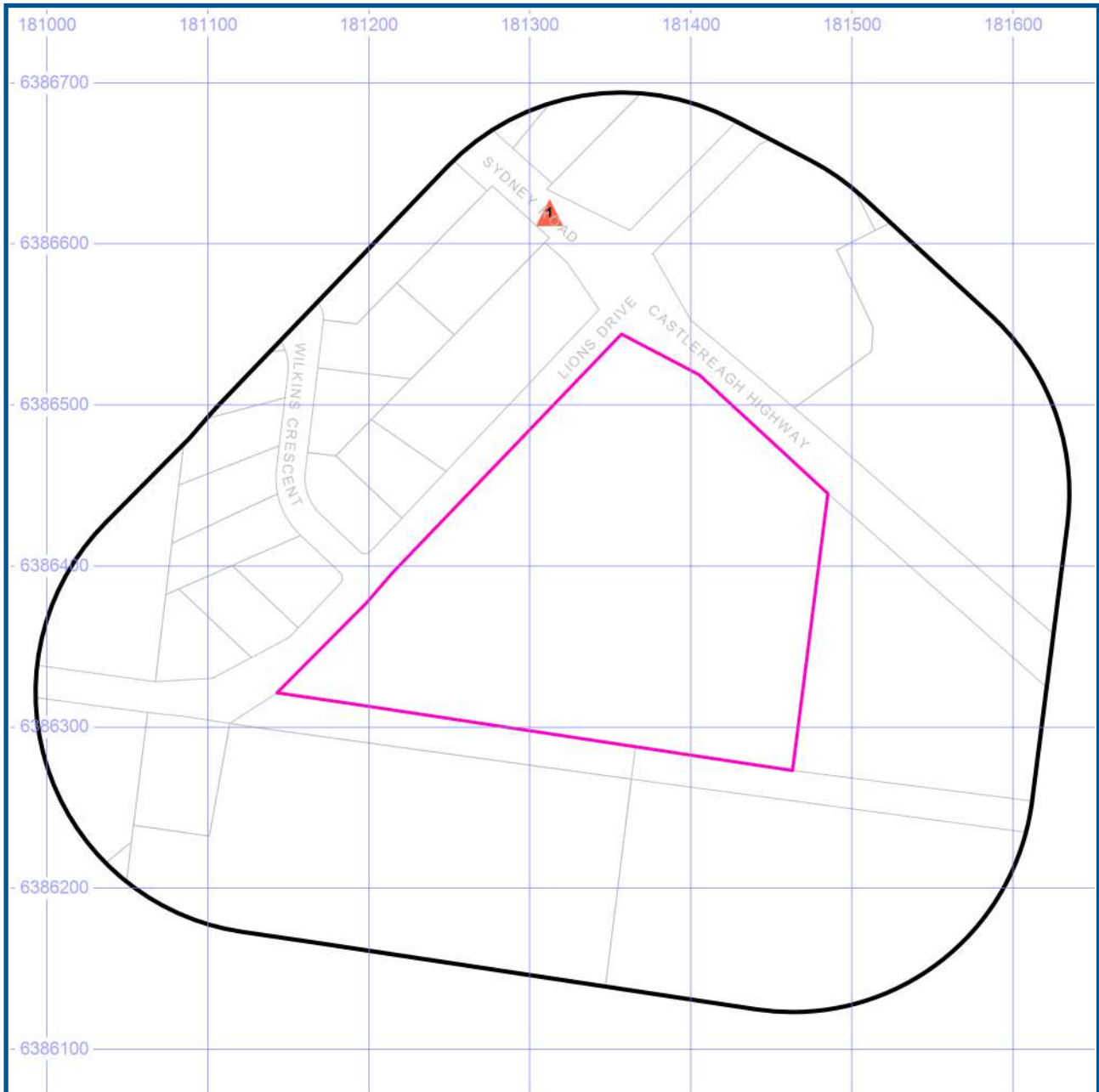
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# Historical Business Directories





132-134 Lions Drive, Mudgee, NSW 2850



## 1982 Business Directory Records



-  Site Boundary
-  Buffer 150m
-  Property Boundaries

-  Business directory records mapped to a specific premise
-  Business directory records mapped to a road intersection
-  Business directory records mapped to a road corridor
-  Business directory records mapped to a general area



Projected Coordinate System:  
GDA94 MGA Zone 56

Data Sources: Universal Business Directories (UBD), derived data, licensed from Hardie Grant.  
Property Boundaries © NSW Department Finance, Services & Innovation 2019

## Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850

### 1982 Business Directory Records Premise or Road Intersection Matches

Records from the 1982 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

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

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

### 1982 Business Directory Records Road or Area Matches

Records from the 1982 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
1	CARAVAN SALES, SERVICE &/OR FIRERS.	Bennetts Caravan Centre., Sydney Rd. Mudgee	185067	Road Match	21m
	FOODS FROZEN MFRS. &/OR DIST.	Colless Frozen Foods., Sydney Rd. Mudgee	185123	Road Match	21m
	MOTELS.	Gate House Motel., The., Sydney Rd. Mudgee	185219	Road Match	21m
	HONEY MERCHANTS,	Glenrock Honey Co., Sydney Rd. Mudgee	185164	Road Match	21m
	CARRIERS &/OR CARTAGE CONTRACTORS.	Jones, R. & Co. Sydney Rd. Mudgee	185072	Road Match	21m
	ROAD TRANSPORT SERVICES - INTRASTATE.	Jones, R., & Co. Sydney Rd. Mudgee	185349	Road Match	21m
	REFRIGERATED TRANSPORT SERVICES.	K & B Refrigerated Transport, Sydney Rd. Mudgee	185345	Road Match	21m
	ENGINEERS - DIESEL.	Mudgee Diesel Service., Sydney Rd. Mudgee	185110	Road Match	21m
	QUARRY PROPRIETORS.	Mudgee Stone Products, Sydney Rd. Mudgee	185330	Road Match	21m
	SHELTERED WORKSHOPS.	Orana Sheltered Workshop., Sydney Rd. Mudgee	185357	Road Match	21m
	MOTOR ENGINE RECONDITIONERS.	Stewart, B. A. Engineering Pty. Ltd. Sydney Rd. Mudgee	185257	Road Match	21m
	CAFES, TEA ROOMS &/OR COFFEE LOUNGES.	Town & Country Service Station., Sydney Rd. Mudgee	185063	Road Match	21m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Town & Country Service Station., Sydney Rd. Mudgee	185277	Road Match	21m
	ENGINEERS - GENERAL &/OR MANUFACTURING &/OR MECHANICAL.	Wilkinson, K. E. & G. L, Sydney Rd. Mudgee	185113	Road Match	21m
	AGRICULTURAL MACHINERY REPAIRS.	Winkon, K. E. & G. L, Sydney Rd. Mudgee	184965	Road Match	21m

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
1	MOTELS.	Zebra Mudgee Motel, Sydney Rd. Mudgee	185225	Road Match	21m

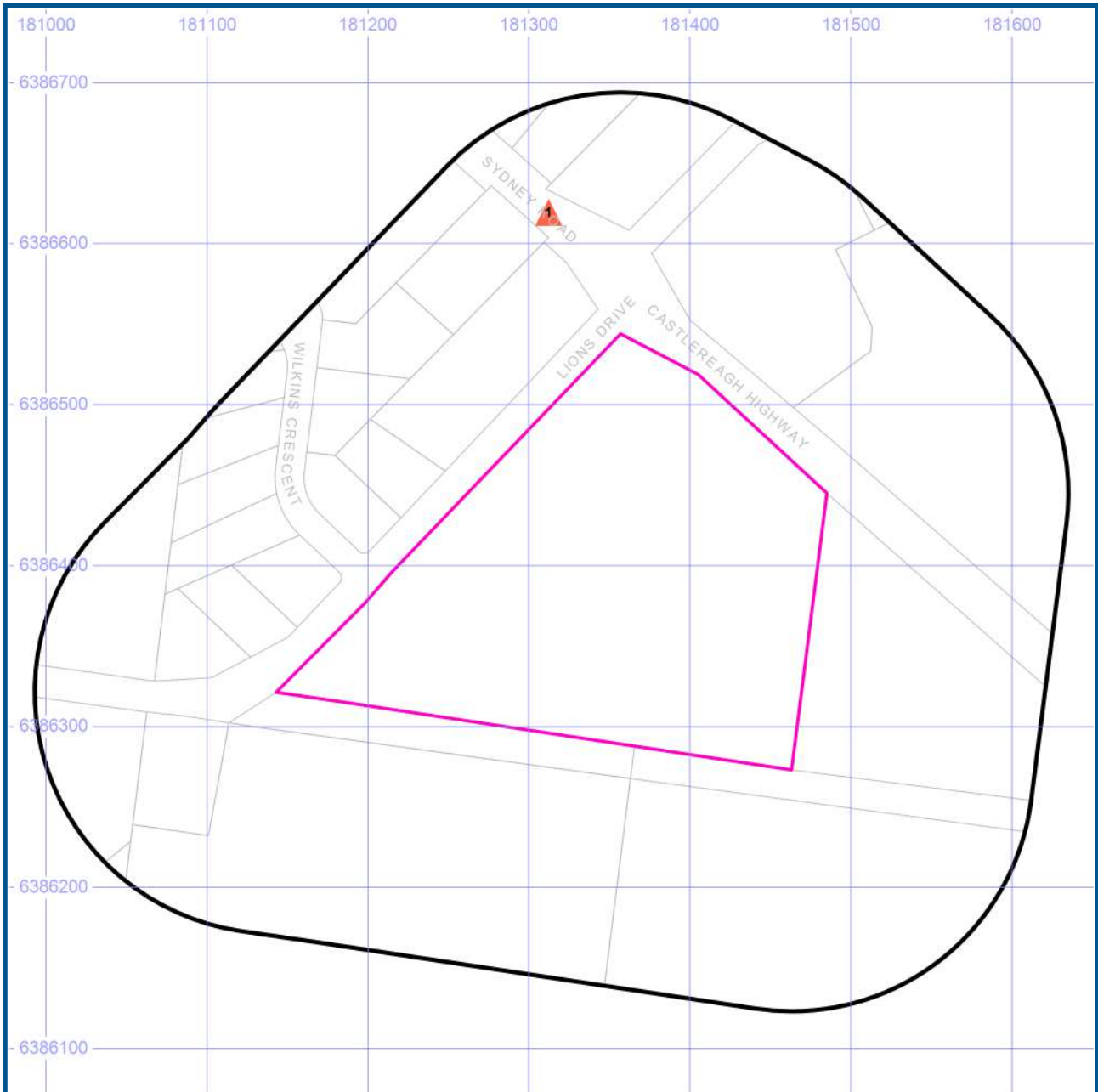
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# Historical Business Directories





132-134 Lions Drive, Mudgee, NSW 2850



## 1970 Business Directory Records



-  Site Boundary
-  Buffer 150m
-  Property Boundaries

-  Business directory records mapped to a specific premise
-  Business directory records mapped to a road intersection
-  Business directory records mapped to a road corridor
-  Business directory records mapped to a general area



Projected Coordinate System:  
GDA94 MGA Zone 56

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Property Boundaries © NSW Department Finance, Services & Innovation 2019

## Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850

### 1970 Business Directory Records Premise or Road Intersection Matches

Records from the 1970 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

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

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### 1970 Business Directory Records Road or Area Matches

Records from the 1970 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
1	APIARISTS	Bennett, S. R., Sydney Rd. Mudgee	543992	Road Match	21m
	HONEY MERCHANTS	Bennett, S. R., Sydney Rd. Mudgee	544227	Road Match	21m
	MOTELS	Gatehouse Motel (The), Sydney Rd. Mudgee	544341	Road Match	21m
	MOTELS	Mudgee Motel, Sydney Rd. Mudgee	544344	Road Match	21m
	QUARRY PROPRIETORS	Mudgee Stone Products, Sydney Rd. Mudgee	544452	Road Match	21m

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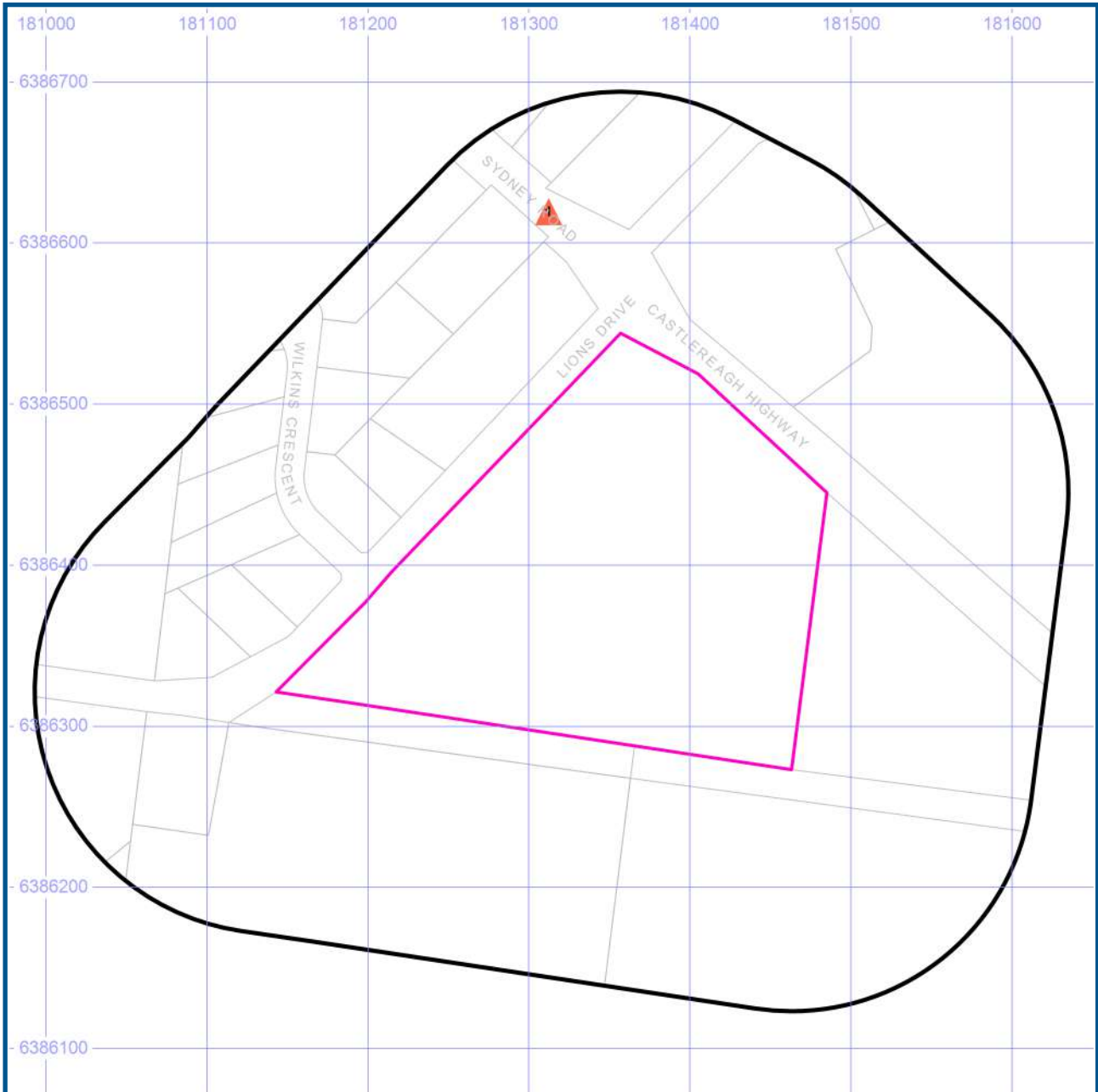










# Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850



## 1961 Business Directory Records



	Site Boundary		Business directory records mapped to a specific premise	 N
	Buffer 150m		Business directory records mapped to a road intersection	
	Property Boundaries		Business directory records mapped to a road corridor	
			Business directory records mapped to a general area	

Projected Coordinate System: GDA94 MGA Zone 56

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## Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850

### 1961 Business Directory Records Premise or Road Intersection Matches

Records from the 1961 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

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

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### 1961 Business Directory Records Road or Area Matches

Records from the 1961 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
1	APIARISTS	Bennett, S. R., Sydney Rd., Mudgee	215723	Road Match	21m
	SCHOOLS & COLLEGES-PRIVATE & PUBLIC	Mudgee Technical College, Short St., Phone 366, Mudgee	216094	Road Match	21m
	CARRIERS & CARTAGE CONTRACTORS	Murdock, W. J., Sydney Rd., Mudgee	215798	Road Match	21m
	QUARRY PROPRIETORS	Murdock, W. J., Sydney Rd., Mudgee	216076	Road Match	21m

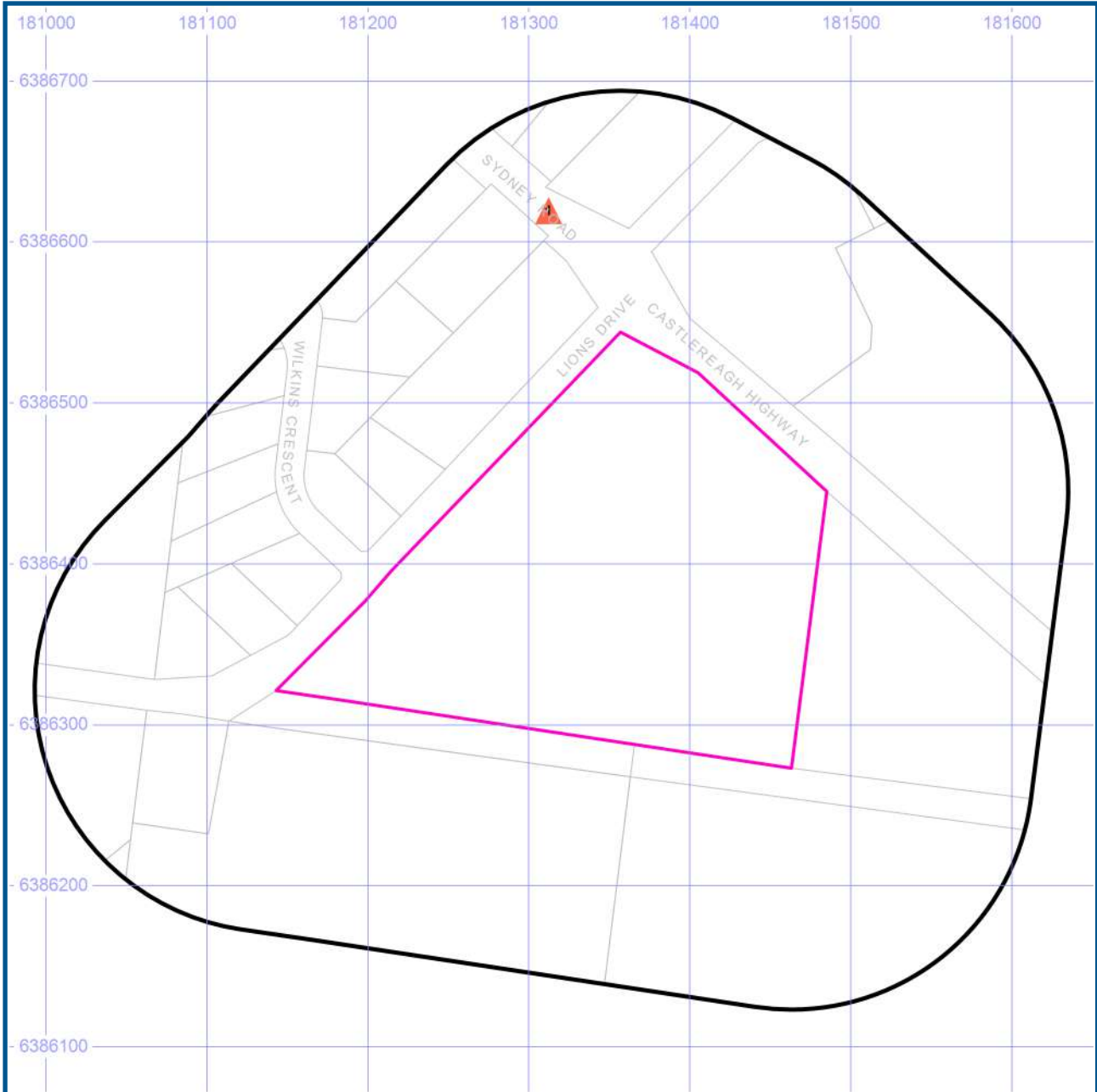
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# Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850



## 1950 Business Directory Records



	Site Boundary		Business directory records mapped to a specific premise	 N
	Buffer 150m		Business directory records mapped to a road intersection	
	Property Boundaries		Business directory records mapped to a road corridor	
			Business directory records mapped to a general area	

Projected Coordinate System:  
GDA94 MGA Zone 56

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Property Boundaries © NSW Department Finance, Services & Innovation 2019

## Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850

### 1950 Business Directory Records Premise or Road Intersection Matches

Records from the 1950 UBD Business Directory, mapped to a premise or road intersection, within the dataset buffer:

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

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### 1950 Business Directory Records Road or Area Matches

Records from the 1950 UBD Business Directory, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Location Confidence	Distance to Road Corridor or Area
1	APIARISTS	Bennett, S. R., Sydney Rd. Mudgee	133439	Road Match	21m

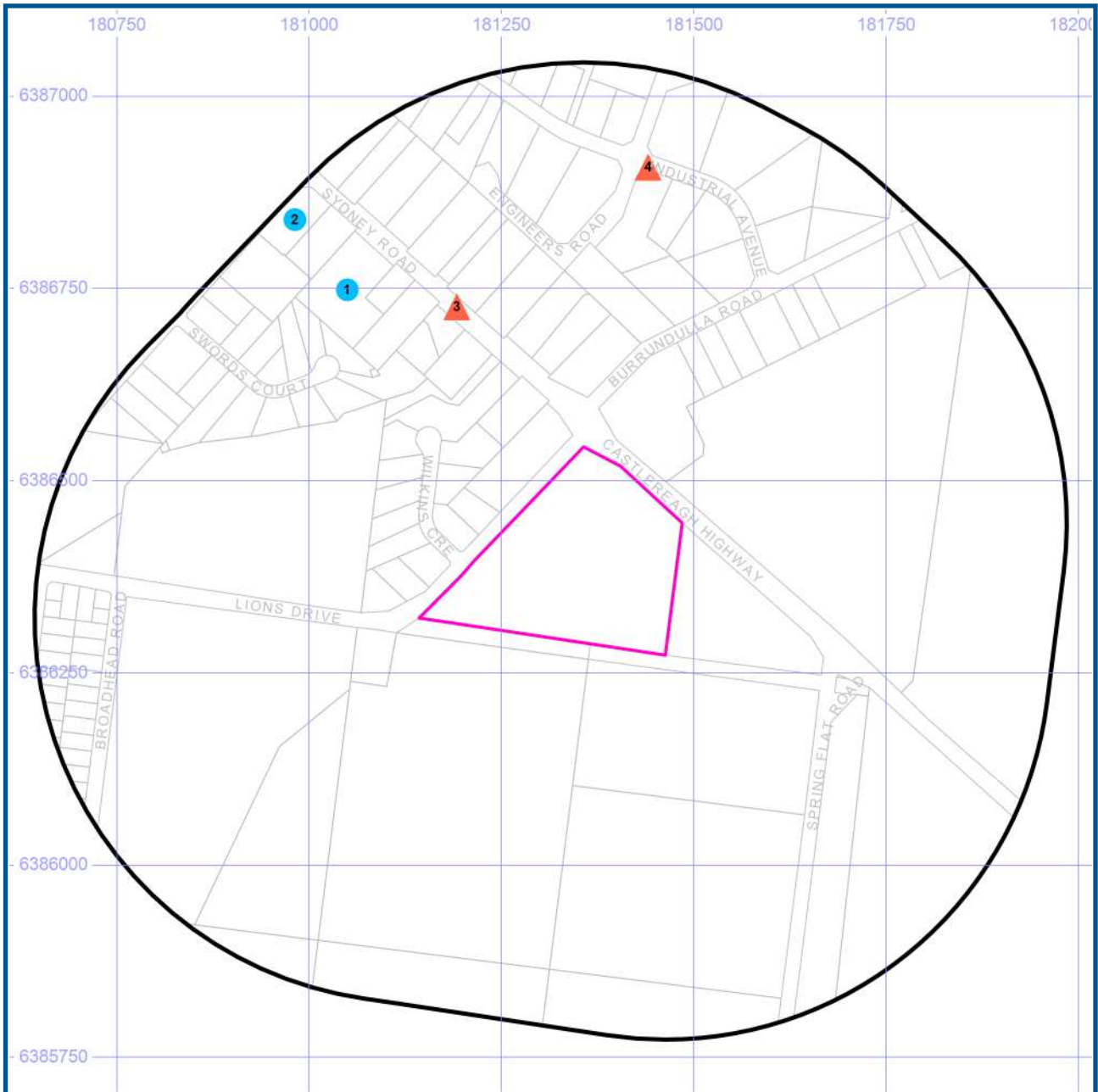
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# Historical Business Directories





132-134 Lions Drive, Mudgee, NSW 2850



## Dry Cleaners, Motor Garages & Service Stations



-  Site Boundary
-  Buffer 500m
-  Property Boundaries

-  Business directory records mapped to a specific premise
-  Business directory records mapped to a road intersection
-  Business directory records mapped to a road corridor
-  Business directory records mapped to a general area



Projected Coordinate System:  
GDA94 MGA Zone 56

Data Sources: Universal Business Directories (UBD), derived data, licensed from Hardie Grant.  
Property Boundaries © NSW Department Finance, Services & Innovation 2019

# Historical Business Directories

132-134 Lions Drive, Mudgee, NSW 2850

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

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MOTOR GARAGES & SERVICE STATIONS	Busy Bee Gsrage., 50 Sydney Rd	128462	1991	Premise Match	305m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Busy Bee Service Station., Sydney Rd. Mudgee	185262	1982	Premise Match	305m	North West
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Busy Bee Service Station, Sydney Rd. Mudgee	544400	1970	Premise Match	305m	North West
2	MOTOR GARAGES & SERVICE STATIONS	Grag'T Tyre. & Mechanical Services., 46 Sydney Rd	128467	1991	Premise Match	452m	North West

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

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

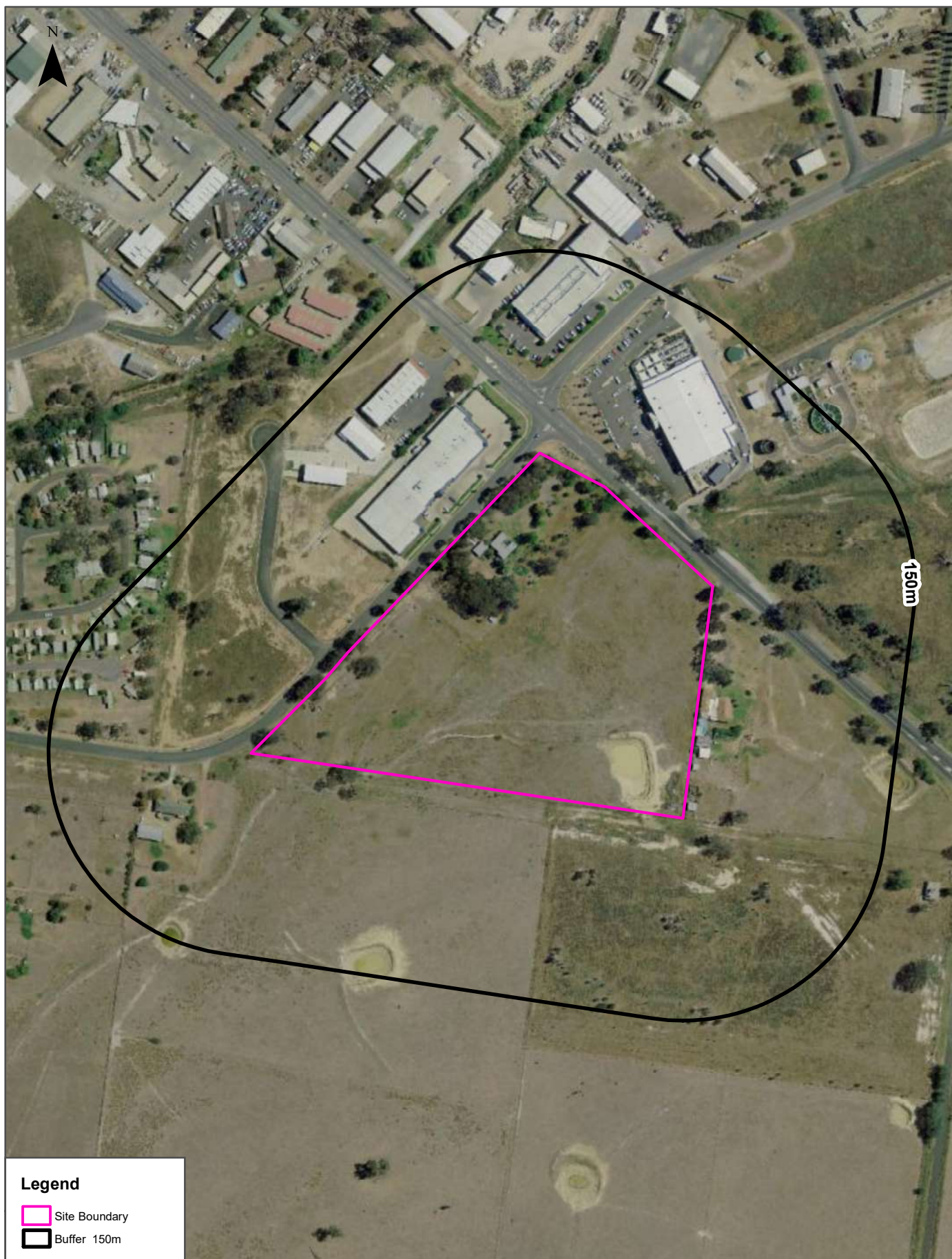
Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
3	MOTOR GARAGES & SERVICE STATIONS	Rynsco Pty. Ltd Service Station., Sydney Rd	128475	1991	Road Match	21m
	MOTOR GARAGES & SERVICE STATIONS	Town & Country Service Station., Sydney Rd	128478	1991	Road Match	21m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Town & Country Service Station., Sydney Rd. Mudgee	185277	1982	Road Match	21m
4	MOTOR GARAGES & SERVICE STATIONS	Redpath Services., Industrial Av	128474	1991	Road Match	301m


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

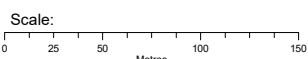
# Aerial Imagery 2009

132-134 Lions Drive, Mudgee, NSW 2850



### Legend

-  Site Boundary
-  Buffer 150m



Data Sources: Aerial Imagery © Department Finance, Services & Innovation

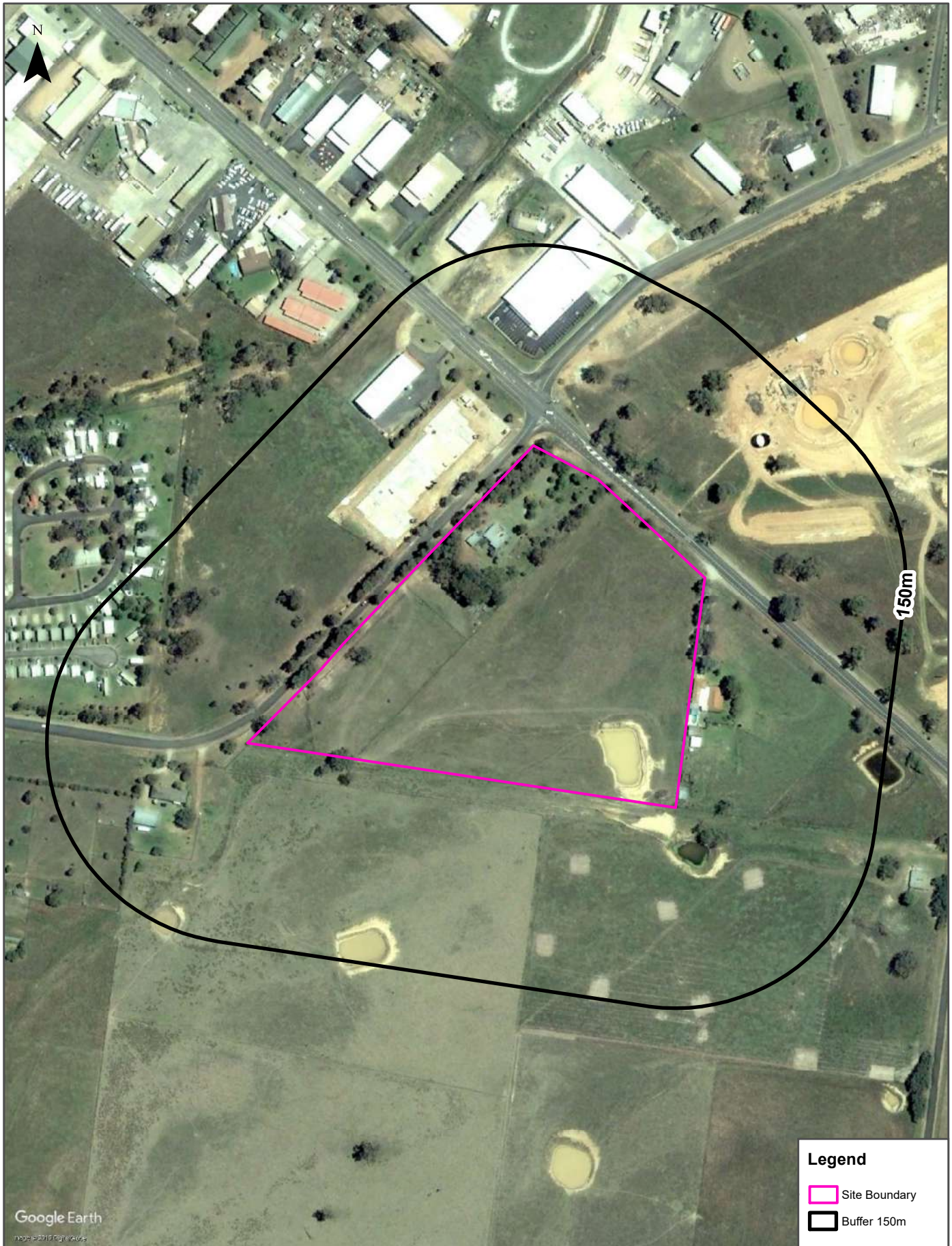
Coordinate System: GDA 1994 MGA Zone 56

Date: 22 July 2019





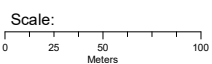
# Aerial Imagery 2003

132-134 Lions Drive, Mudgee, NSW 2850



### Legend

-  Site Boundary
-  Buffer 150m



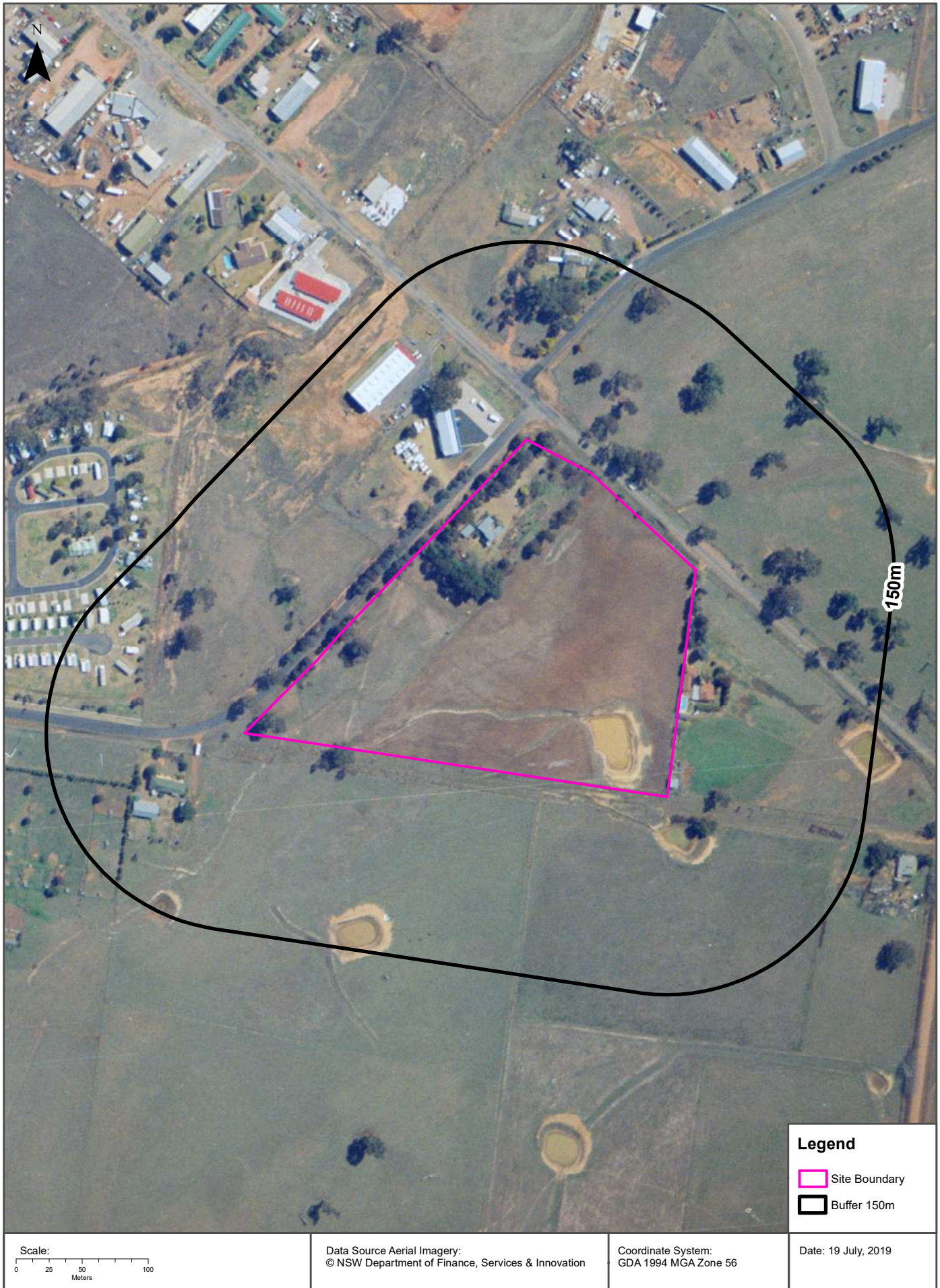
Data Source Aerial Imagery: © 2019 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:  
GDA 1994 MGA Zone 56

Date: 19 July, 2019

# Aerial Imagery 1994

132-134 Lions Drive, Mudgee, NSW 2850



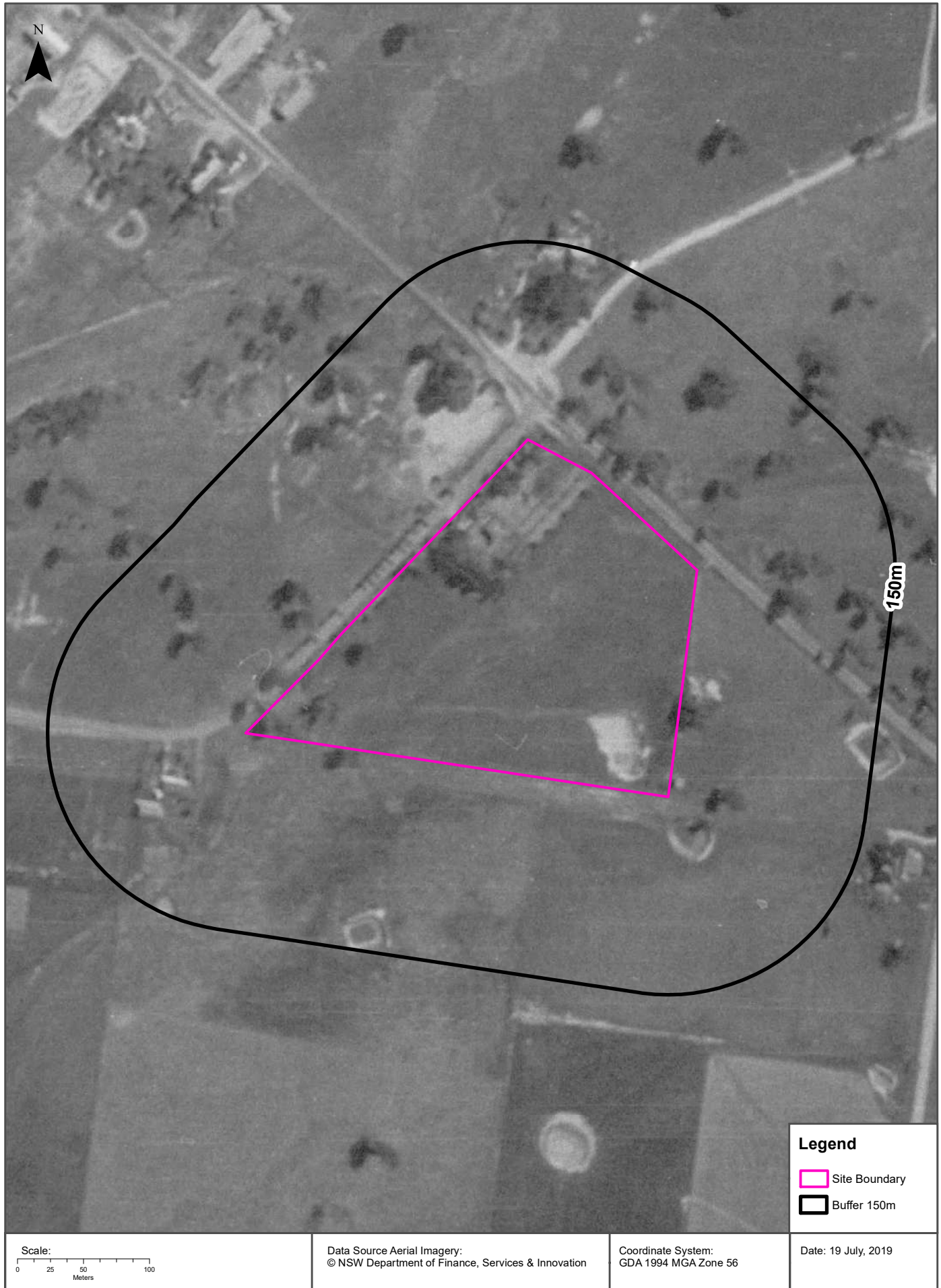
# Aerial Imagery 1988

132-134 Lions Drive, Mudgee, NSW 2850



# Aerial Imagery 1980

132-134 Lions Drive, Mudgee, NSW 2850



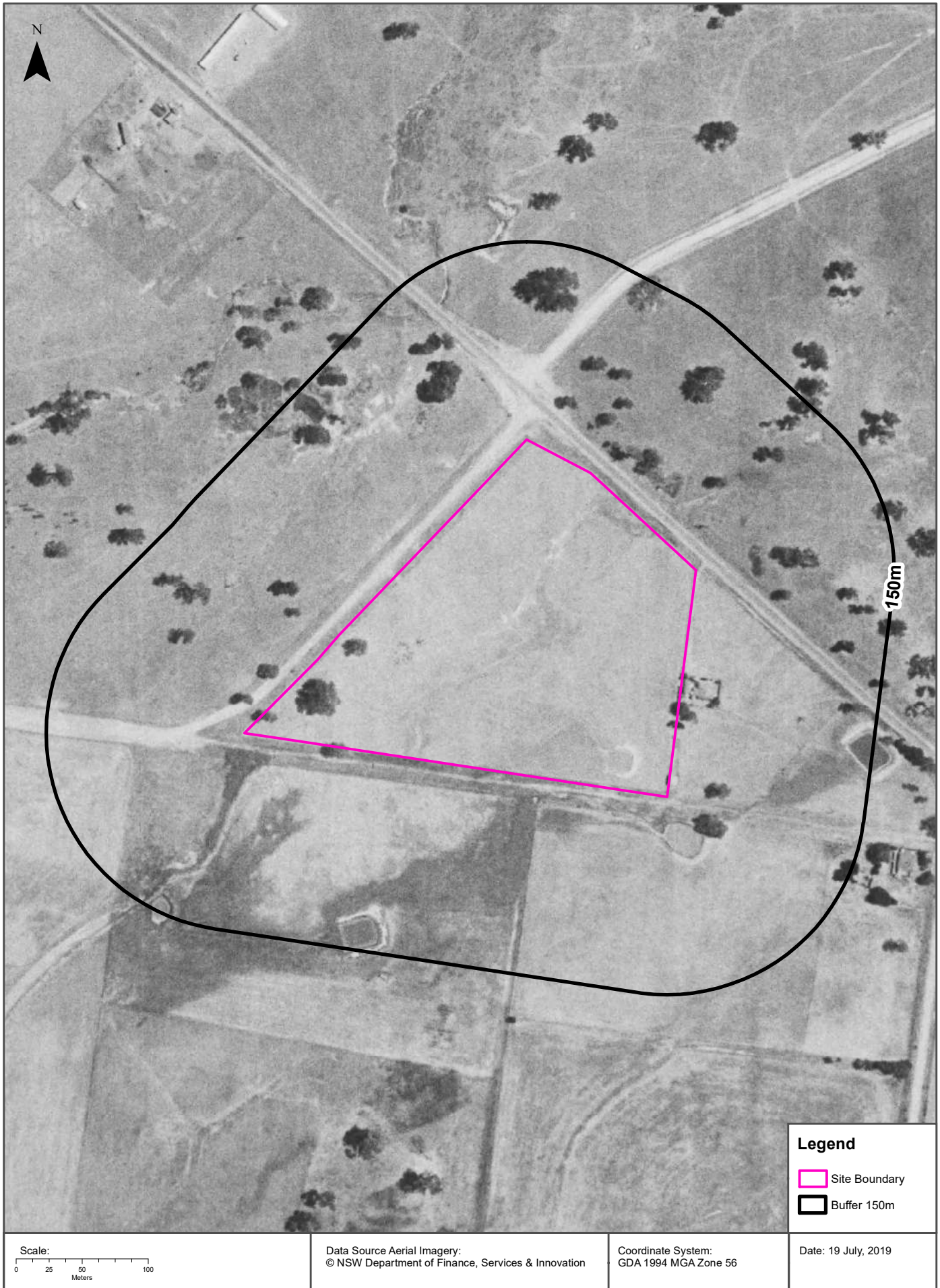
# Aerial Imagery 1971

132-134 Lions Drive, Mudgee, NSW 2850



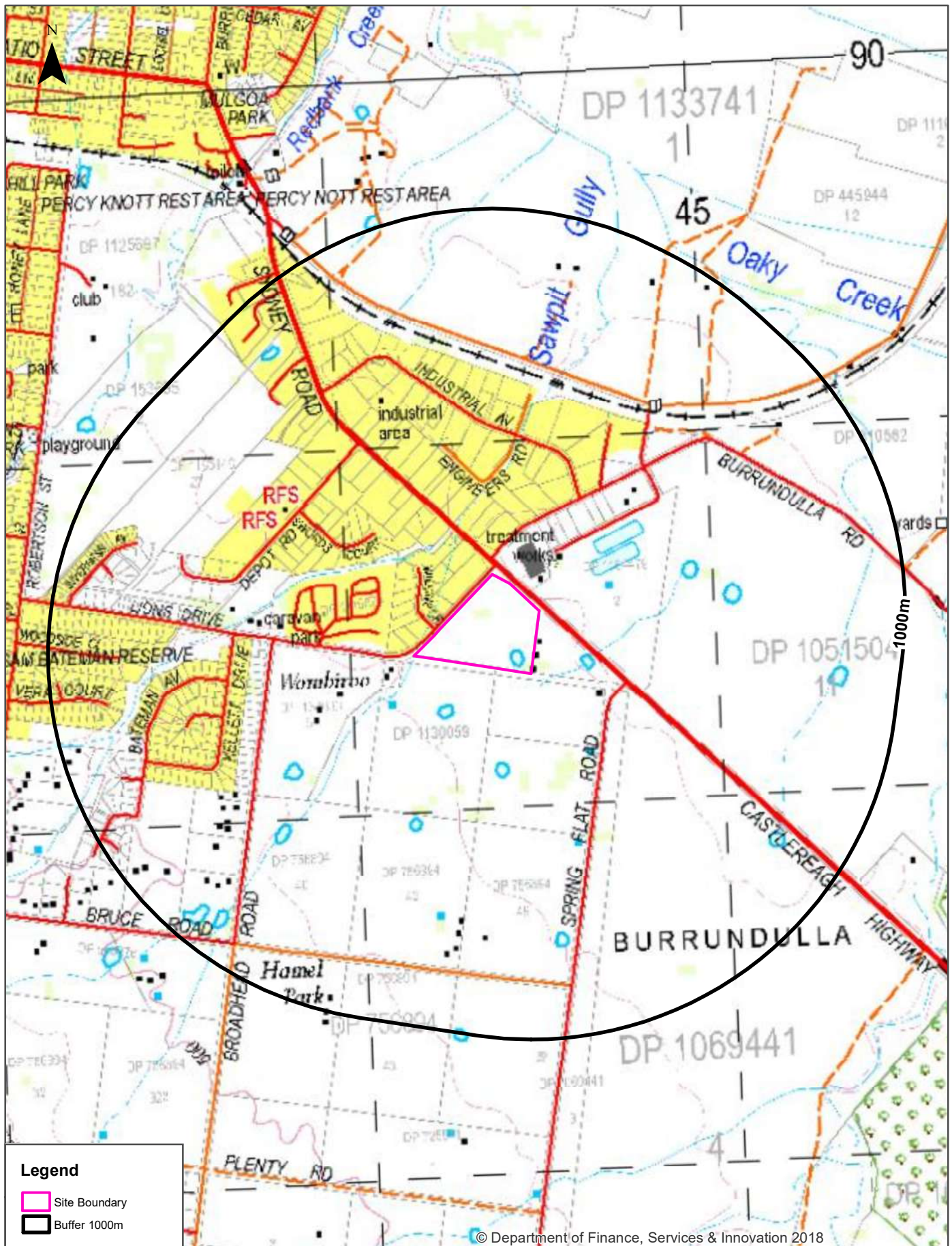
# Aerial Imagery 1964

132-134 Lions Drive, Mudgee, NSW 2850



# Topographic Map 2015

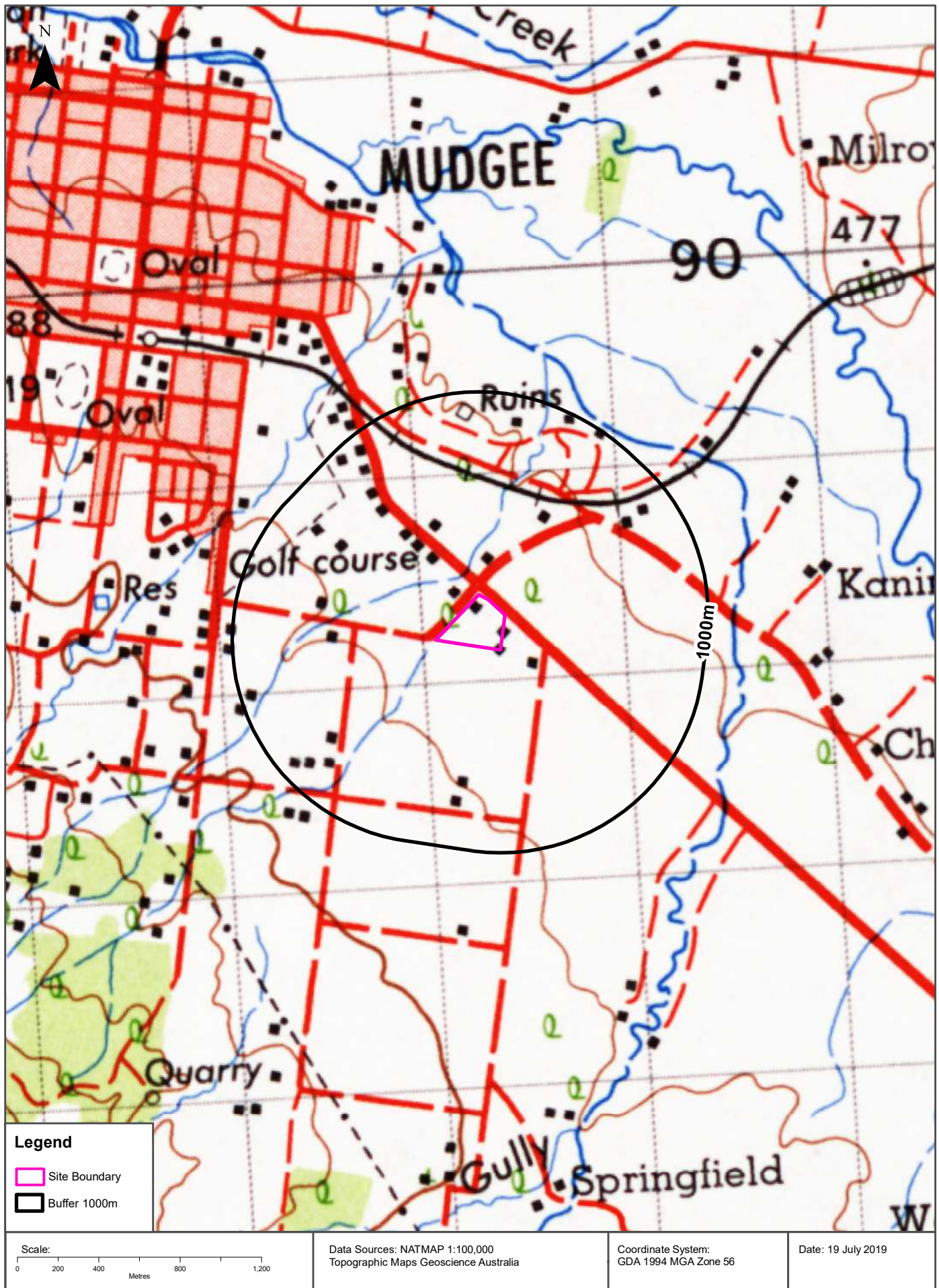
132-134 Lions Drive, Mudgee, NSW 2850



<p>Scale:</p>	<p>Data Sources: Topographic Map Data © NSW Land and Property Information</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 22 July 2019</p>
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# Historical Map 1975

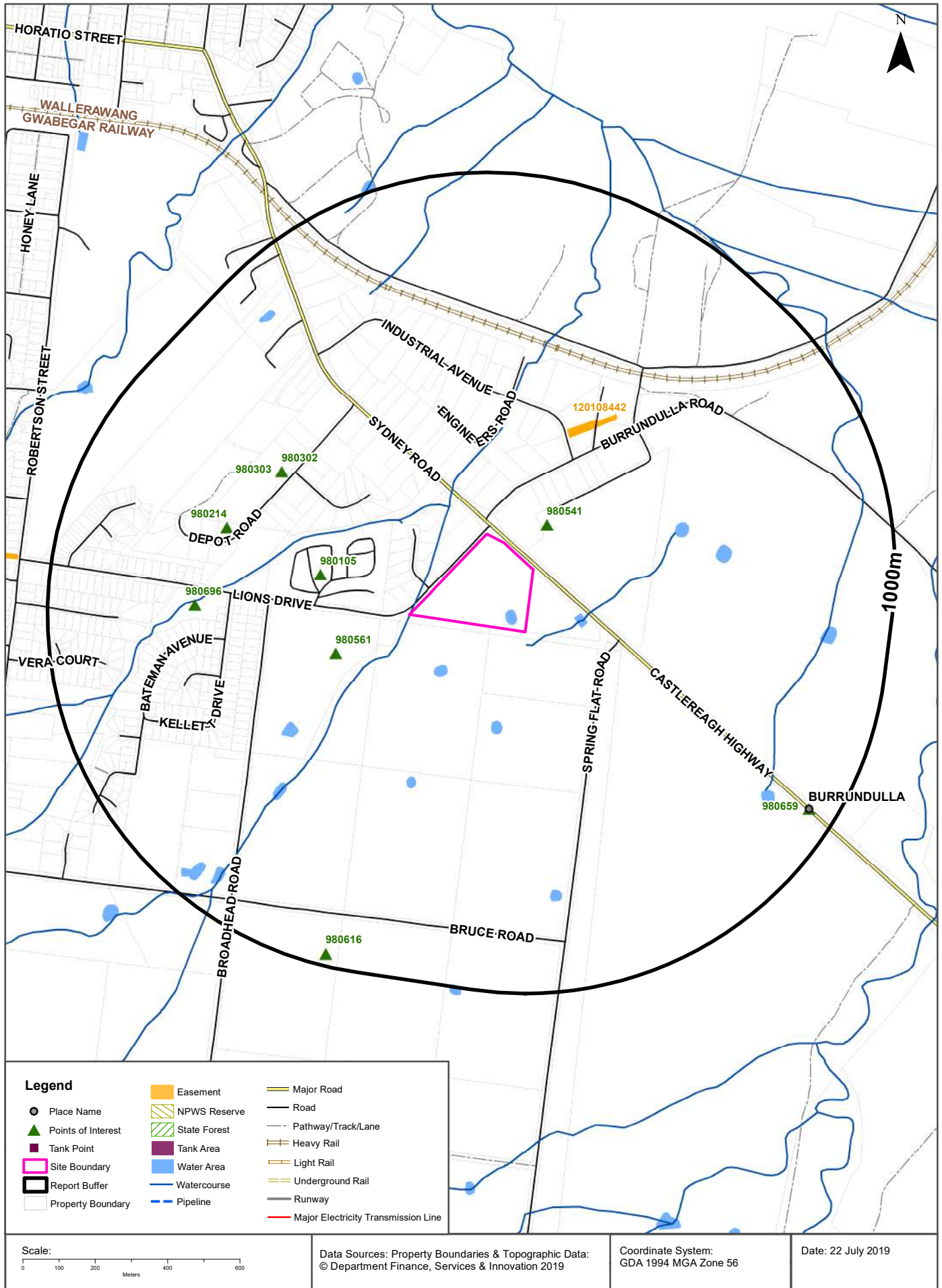
132-134 Lions Drive, Mudgee, NSW 2850





# Topographic Features

132-134 Lions Drive, Mudgee, NSW 2850



# Topographic Features

132-134 Lions Drive, Mudgee, NSW 2850

## Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
980541	Filtration Plant	Filtration Plant	116m	North East
980561	Homestead	WOMBIROO	230m	South West
980105	Tourist Park / Home Village	MUDGEES TOURIST AND VAN RESORT	269m	West
980302	Firestation - Bush	CUDGEGONG FIRE CONTROL CENTRE	529m	North West
980303	Firestation - Bush	MUDGEES HEADQUARTERS RFB	529m	North West
980214	SES Facility	MUDGEES SES	558m	West
980696	Park	SAM BATEMAN RESERVE	593m	West
980659	Locality	BURRUNDULLA	923m	South East
980616	Homestead	HAMEL PARK	966m	South West

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

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# Topographic Features

132-134 Lions Drive, Mudgee, NSW 2850

## Tanks (Areas)

What are the Tank Areas located within the dataset 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	Feature Currency	Distance	Direction
	No records in buffer					

## Tanks (Points)

What are the Tank Points located within the dataset 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	Feature Currency	Distance	Direction
	No records in buffer					

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

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## Major Easements

What Major Easements exist within the dataset 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
120108442	Primary	Undefined		345m	North East

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

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## Topographic Features

132-134 Lions Drive, Mudgee, NSW 2850

### State Forest

What State Forest exist within the dataset buffer?

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

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)  
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### National Parks and Wildlife Service Reserves

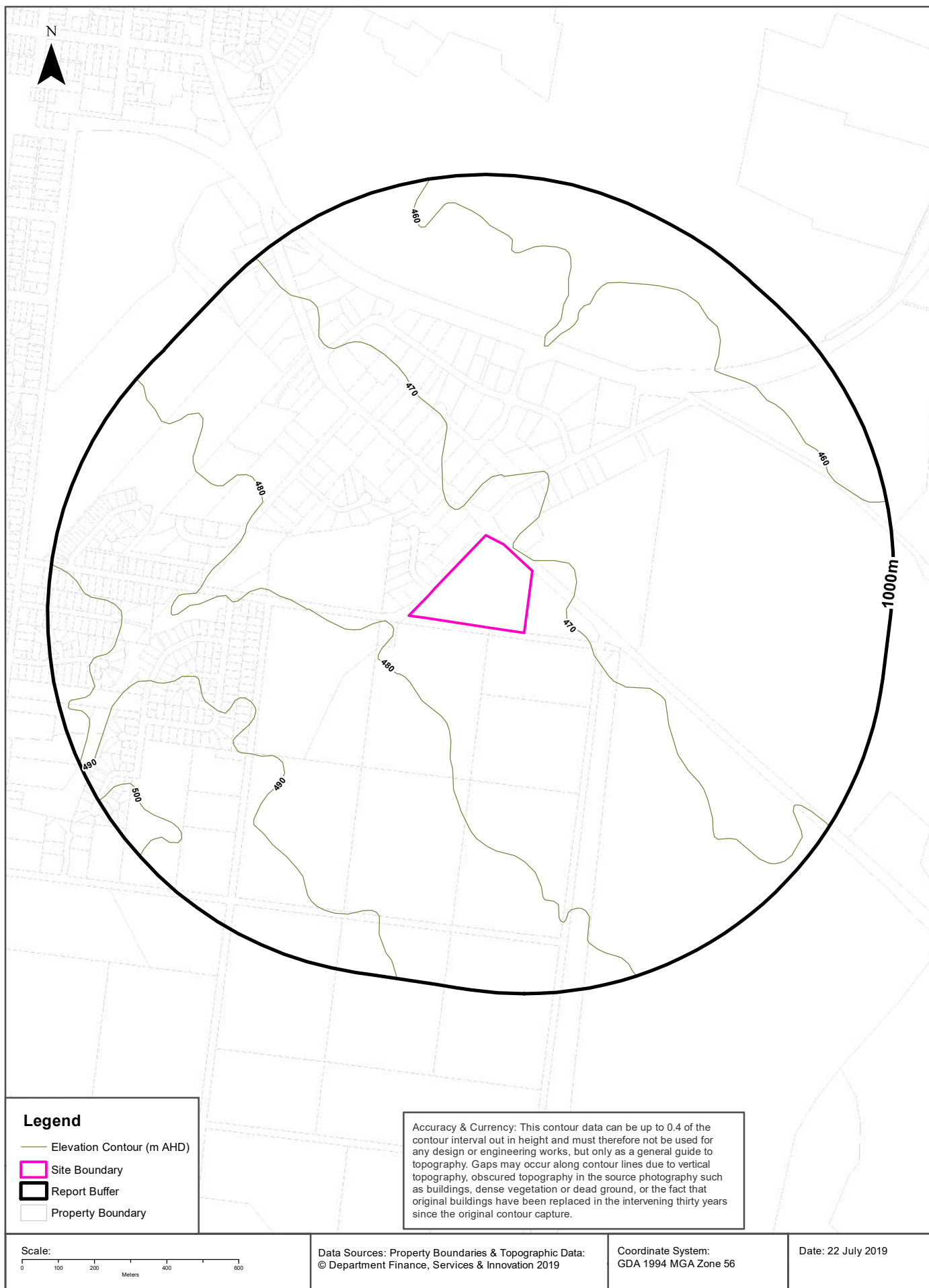
What NPWS Reserves exist within the dataset buffer?

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

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)  
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

# Elevation Contours (m AHD)

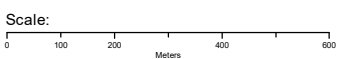
132-134 Lions Drive, Mudgee, NSW 2850



### Legend

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

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



Data Sources: Property Boundaries & Topographic Data:  
© Department Finance, Services & Innovation 2019

Coordinate System:  
GDA 1994 MGA Zone 56

Date: 22 July 2019

# Hydrogeology & Groundwater

132-134 Lions Drive, Mudgee, NSW 2850

## Hydrogeology

Description of aquifers on-site:

Description
Fractured or fissured, extensive aquifers of low to moderate productivity

Description of aquifers within the dataset buffer:

Description
Fractured or fissured, extensive aquifers of low to moderate productivity

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

## Botany Groundwater Management Zones

Groundwater management zones relating to the Botany Sand Beds aquifer within the dataset buffer:

Management Zone No.	Restriction	Distance	Direction
N/A	No records in buffer		

Botany Groundwater Management Zones Data Source : NSW Department of Primary Industries



# Hydrogeology & Groundwater

132-134 Lions Drive, Mudgee, NSW 2850

## Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW053136	80BL118267, 80BL134346, 80WA711496	Bore	Private	Domestic, Irrigation, Stock	Irrigation		01/12/1980	60.90	60.90	501-1000 ppm				241m	South West
GW048444	80BL105012, 80WA710202	Bore	Private	Domestic, Stock	Domestic, Stock			28.40	28.40					263m	South
GW048537	80BL108825, 80WA710419	Bore	Private	Stock	Not Known		01/05/1978	12.20	12.50	Good				413m	South
GW804348	80BL245990	Bore	Local Govt	Monitoring Bore	Monitoring Bore		21/07/2010	6.30	6.30					526m	North West
GW804349	80BL245990	Bore	Local Govt	Monitoring Bore	Monitoring Bore		21/07/2010	7.70	7.70					553m	North West
GW804350	80BL245990	Bore	Local Govt	Monitoring Bore	Monitoring Bore		21/07/2010	6.30	6.30					572m	North West
GW804113	80BL245445	Bore	Private	Domestic	Domestic		08/12/2009							602m	South West
GW800529	80BL238026, 80WA712471	Bore		Domestic, Stock	Domestic, Stock		18/03/1998	27.40	27.40					628m	North West
GW803725	80BL245090	Bore	Private	Monitoring Bore	Monitoring Bore		22/09/2008	7.50	7.50	972.8	4.74			687m	South West
GW800667	80BL238471, 80WA712585	Bore	Private	Domestic, Stock	Domestic, Stock		06/02/1999	53.00	53.00	Good	3.00	1.510		715m	West
GW031392	80BL023816, 80WA709780	Bore	Private	Stock	Stock		01/11/1968	28.90	29.00					864m	East
GW062235	80BL136012	Bore	Local Govt	Town Water Supply	Town Water Supply		01/01/1982	7.90						916m	North East
GW062236	80BL136013	Bore	Local Govt	Town Water Supply	Town Water Supply		01/01/1982	7.80						976m	North East
GW062237	80BL136014	Bore	Local Govt	Town Water Supply	Town Water Supply		01/01/1982	7.70						1040m	North East
GW055061	80BL119009, 80BL130968, 80WA715899	Bore	Private	Recreation (groundwater), Test Bore	Recreation (groundwater)		01/06/1981	43.00	43.00	0-500 ppm				1060m	West
GW803825	80BL236908	Bore	Private	Domestic, Stock	Domestic, Stock		28/01/1996	39.00	39.00	Good	11.00	3.000		1062m	North West
GW047519	80BL111677, 80CA715061	Bore	Private	Domestic, Irrigation, Stock	Irrigation		01/06/1980	31.00	31.00	Fresh				1070m	West
GW062238	80BL136015	Bore	Local Govt	Town Water Supply	Town Water Supply		01/01/1982	7.60						1089m	North East



GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW055050	80BL118974, 80WA710968	Bore open thru rock	Private	Domestic, Stock	Domestic, Stock		01/02/1981	47.00	47.00	Fresh				1100m	North West
GW010400	80BL003042, 80WA708876	(Unknown)	Private	Recreation (groundwater)	Irrigation		01/01/1952	27.40		0-500 ppm				1107m	North West
GW062239	80BL136016	Bore	Local Govt	Town Water Supply	Town Water Supply		01/01/1982	7.60						1121m	North East
GW800662	80BL238096	Bore	Private	Domestic, Stock	Domestic, Stock		05/04/1998	60.90	60.90		10.90	2.520		1141m	North East
GW032068	80BL023774	Well	Local Govt	Town Water Supply	Town Water Supply			7.10						1153m	North East
GW016394	80BL007412, 80WA709046	Bore	Private	Domestic	Irrigation		01/10/1957	43.80	43.90	1001-3000 ppm				1182m	West
GW055555	80BL116250, 80WA710841	Bore	Private	Domestic	General Use		01/09/1980	53.80	53.80					1207m	West
GW032067	80BL023773	Well	Local Govt	Town Water Supply	Town Water Supply			6.60						1217m	North East
GW800454	80BL133035	Well	Private	Irrigation	Irrigation		01/01/1956	7.90	7.90					1222m	North East
GW800480	80BL133044	Well	Private	Irrigation	Irrigation		01/01/1982	11.30	11.30		4.90			1222m	North East
GW052966	80BL109671, 80WA710458	Bore	Private	Domestic	Domestic		01/06/1980	21.30	21.40					1225m	South East
GW055554	80BL116244, 80WA710838	Bore	Private	Domestic	Domestic, Stock		01/01/1981	45.50	45.50	Fresh				1231m	West
GW030994		Bore	Local Govt		Public/municipal		01/02/1982	0.00	14.50					1267m	East
GW059089	80BL115166, 80BL133773, 80WA711464	Well	Private	Domestic, Irrigation, Stock	Irrigation		01/01/1980	13.70						1272m	South East
GW052035	80BL116291, 80WA710854	Bore open thru rock	Private	Domestic	General Use		01/02/1981	21.00	21.00					1288m	North
GW016390	80BL007002	Bore	Private	Irrigation	Irrigation			41.10		0-500 ppm				1302m	West
GW032066	80BL022985	Well	Local Govt	Town Water Supply	Town Water Supply		01/11/1968	7.40	7.50					1305m	North East
GW051722	80BL113168, 80WA710697	Bore	Private	Domestic	General Use		01/08/1980	36.90	36.90	Fresh				1333m	West
GW060384	80BL134795	Bore	Local Govt	Town Water Supply				60.96	60.96		14.80	8.841		1352m	West
GW032065	80BL023772	Well	Local Govt	Town Water Supply	Town Water Supply		01/11/1968	7.50	7.50					1363m	North East
GW054479	80BL116212, 80WA710825	Bore	Private	Domestic, Stock	Domestic, Stock		01/02/1981	47.00	47.00	Fresh				1365m	West
GW032064	80BL022983	Well	Local Govt	Town Water Supply	Town Water Supply		01/11/1968	7.90	8.00					1409m	North East
GW019988	80BL012543, 80WA709251	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/09/1962	38.10	38.10					1420m	North West
GW030985		Bore	Local Govt		Public/municipal		01/02/1982	16.30	20.00	0-500 ppm				1423m	East

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW054102	80BL113135, 80WA710689	Bore	Private	Domestic	Domestic		01/06/1981	31.40	31.40	Fresh				1424m	North West
GW052778	80BL115305, 80WA710785	Bore	Private	Domestic	Domestic		01/07/1980	31.60	31.60	Fresh				1446m	North West
GW060382	80BL134794	Bore	Local Govt	Town Water Supply				53.30	53.34		15.00			1454m	West
GW032063	80BL022984	Well	Local Govt	Town Water Supply	Town Water Supply		01/11/1968	8.20	8.20					1485m	North East
GW062240	80BL136018	Well	Local Govt	Town Water Supply	Town Water Supply		01/01/1982	7.50						1515m	North East
GW800270	80BL236717, 80WA712224	Bore	Private	Domestic, Stock	Domestic, Stock		09/10/1995	38.00	38.00	Good				1554m	South West
GW055556	80BL116325, 80WA710858	Bore	Private	Domestic	General Use		01/03/1981	17.70	17.70	0-500 ppm				1561m	North
GW032062	80BL022981	Well	Local Govt	Town Water Supply	Town Water Supply		01/10/1968	7.10	7.20					1578m	North East
GW052243	80BL116245, 80WA710839	Bore	Private	Domestic	General Use		01/08/1980	44.40	44.40	501-1000 ppm				1587m	West
GW039336		Bore	Local Govt		Public/municipal		01/02/1984	14.40	15.00					1597m	East
GW032070	80BL022987	Bore	Local Govt	Town Water Supply	Public/municipal		01/07/1968	9.10	9.20					1609m	North
GW800462	80BL133034	Well	Private	Irrigation	Irrigation		01/01/1954	7.90	7.90					1613m	North East
GW030982		Bore	Local Govt		Public/municipal		01/12/1981	14.50	15.00	0-500 ppm				1616m	East
GW062241	80BL136019	Well	Local Govt	Town Water Supply	Town Water Supply		01/01/1982	9.30						1619m	North East
GW039320	80BL128001	Bore	Local Govt	Town Water Supply	Town Water Supply		01/07/1983	14.00	14.00					1619m	East
GW032073	80BL022988	Bore	Local Govt	Town Water Supply	Public/municipal		01/07/1968	10.30	10.40					1635m	North
GW032071	80BL022986	Well	Local Govt	Town Water Supply	Public/municipal		01/08/1968	7.00	7.00					1635m	North
GW032072	80BL022980	Bore	Local Govt	Town Water Supply	G/water Xplore		01/07/1968	12.20	12.30					1645m	North
GW032061	80BL022982	Well	Local Govt	Town Water Supply	Town Water Supply		01/10/1968	7.80	7.90					1650m	North East
GW064841	80BL136605	Bore	Private	Farming, Stock	Farming, Stock		01/01/1989	22.80						1653m	South West
GW052829	80BL113097, 80BL135274	Well	Private	Domestic, Irrigation, Stock	Domestic, Stock		01/08/1980	11.60						1653m	East
GW804059	80BL242432	Bore	Private	Domestic, Stock	Domestic, Stock		01/04/2005	66.00	66.00		40.00	1.400		1691m	South
GW060169	80BL113153, 80BL131537	Well	Private	Domestic, Irrigation, Stock	Domestic, Stock		01/02/1983	10.00						1701m	East
GW051755	80BL113616, 80WA710720	Bore open thru rock	Private	Domestic	Not Known		01/09/1980	32.60	32.60	Fresh				1729m	North West
GW802744	80BL241958, 80WA713365	Bore	Private	Domestic, Stock	Domestic, Stock		27/01/2004	54.00	54.00		24.00	2.000		1748m	West
GW020315	80BL008177	Bore	Local Govt	Town Water Supply	Public/municipal		01/10/1948	9.10	9.10	Hard				1754m	North East

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW801479	80BL238674, 80WA712630	Bore	Private	Domestic, Stock	Domestic, Stock		08/07/1999	56.00	56.00			1.000		1756m	South
GW801561	80BL238664, 80WA712627	Bore	Private	Domestic, Stock	Domestic, Stock		29/06/1999	60.00	185.00			3.780		1758m	South
GW030974		Bore	Local Govt		Public/municipal		01/12/1981	0.00	19.50	501-1000 ppm				1774m	East
GW057117	80BL124722, 80WA711177	Bore	Private	Domestic	Domestic		01/03/1983	24.00	24.00	Fresh				1784m	North West
GW801121	80BL238924, 80WA712686	Bore	Private	Domestic, Stock	Domestic, Stock		30/08/1999	42.00	42.00		20.00	1.500		1788m	West
GW801217	80BL238659, 80BL239415, 80CA715490	Bore	Private	Domestic, Irrigation, Stock	Domestic, Irrigation, Stock		25/06/1999	56.00	56.00		20.00	4.000		1789m	South
GW020314	80BL008176	Bore	Local Govt	Town Water Supply	Public/municipal		01/01/1952	9.10	9.10	Hard				1834m	North East
GW020320	80BL012519	Well	Local Govt	Town Water Supply	Public/municipal		01/09/1960	9.70						1834m	North East
GW055401	80BL116457, 80WA710885	Bore	Private	Domestic	Domestic		01/09/1981	12.40	12.40					1848m	North
GW800663	80BL238472, 80WA712586	Bore	Private	Domestic, Stock	Domestic, Stock		06/02/1999	46.00	46.00	Good	6.00	0.631		1851m	West
GW024224	80BL017906, 80WA709512	Bore	Private	Recreation (groundwater)	Recreation (groundwater)		01/05/1966	30.40	30.50					1852m	North West
GW032069	80BL022979	Bore	Local Govt	Town Water Supply	G/water Xplore		01/07/1968	8.80	8.80					1863m	North
GW053011	80BL116865	Well	Private	Domestic, Irrigation, Stock	Domestic, Irrigation, Stock			8.00	8.00					1881m	North East
GW030975		Bore	Local Govt		Public/municipal		01/12/1981	12.50		0-500 ppm				1886m	East
GW802273	80BL242325, 80WA713513	Bore	Private	Domestic	Domestic		05/07/2004	48.00	48.00		16.00	0.378		1899m	West
GW036118		Bore	NSW Office of Water		Monitoring Bore		01/04/1975	9.00	13.50	0-500 ppm			450.52	1905m	North
GW036120		Bore - Nested (2)	NSW Office of Water		Monitoring Bore		01/05/1975	16.60	16.60		0.00		456.06	1941m	North East
GW030991		Bore	Local Govt		Public/municipal		01/02/1982	0.00	12.00					1943m	North
GW051650	80BL112365, 80WA710622	Bore	Private	Domestic	General Use		01/05/1980	18.90	18.90	Fresh				1955m	North
GW005072		Bore	Private		Domestic, Stock	TIMOLEAG UE	01/01/1914	24.00	24.10	Hard				1978m	West

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

132-134 Lions Drive, Mudgee, NSW 2850

## Driller's Logs

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

Groundwater No	Drillers Log	Distance	Direction
GW053136	0.00m-0.60m Clay 0.60m-37.50m Shale Decomposed Water Supply 37.50m-60.90m Shale Black Decomposed Water Supply	241m	South West
GW048444	0.00m-11.00m Clay Red 11.00m-28.00m Clay Dark Brown 28.00m-28.40m Limestone	263m	South
GW048537	0.00m-3.00m Clay Red Some Stones 3.00m-7.00m Clay Grey Gravel 7.00m-12.50m Shale Water Supply	413m	South
GW804348	0.00m-1.00m Gravel, sandy, grey brown 1.00m-1.60m Gravel, clayey, dark brown 1.60m-4.00m Silty Clay, yellow brown 4.00m-6.30m Silty Clay, brown, with alluvial Gravel - Drill refusal on rock @ 6.3m.	526m	North West
GW804349	0.00m-1.40m Gravel, sandy, brown 1.40m-4.00m Silty Clay, yellow brown 4.00m-6.00m Silty Clay, grey, with alluvial Gravel 6.00m-7.70m Silty Clay, brownish yellow. Drill refusal on rock @ 7.7m	553m	North West
GW804350	0.00m-0.60m Clayey Sand, grey brown 0.60m-2.00m Sandy Clay, grey brown 2.00m-4.00m Silty Clay, yellow brown 4.00m-6.30m Silty Clay, yellow brown, with alluvial Gravel. Drill refusal on rock @ 6.3m	572m	North West
GW800529	0.00m-0.90m Topsoil 0.90m-27.40m Sandy Gravel	628m	North West
GW803725	0.00m-2.40m Sandy Clay, brown 2.40m-3.10m Gravel, clayey, brown 3.10m-5.60m Sandy Clay, brown grey mottles 5.60m-7.50m Clay, gravelly, grey/yellow brown	687m	South West
GW800667	0.00m-21.00m Shale, weathered 21.00m-22.00m Shale, blue 22.00m-25.00m Shale, grey 25.00m-53.00m Shale, blue	715m	West
GW031392	0.00m-0.30m Topsoil Clay 0.30m-7.62m Clay 7.62m-28.96m Clay Gravel	864m	East
GW055061	0.00m-1.00m Topsoil 1.00m-3.00m Clay Red 3.00m-43.00m Shale Water Supply	1060m	West
GW803825	0.00m-0.50m Topsoil 0.50m-3.00m Clay 3.00m-15.00m Shale, soft 15.00m-20.00m Shale, grey 20.00m-39.00m Shale, black	1062m	North West
GW047519	0.00m-0.30m Topsoil 0.30m-14.10m Clay 14.10m-16.60m Gravel Claybound 16.60m-24.90m Sandstone Decomposed Water Supply 24.90m-31.00m Sandstone	1070m	West
GW055050	0.00m-0.30m Topsoil 0.30m-1.80m Clay Yellow 1.80m-7.00m Shale Decomposed 7.00m-16.60m Shale Some Broken Bands 16.60m-22.40m Shale Purple Some Weathered Bands 22.40m-47.00m Shale Black Some Broken Bands Water Supply	1100m	North West

Groundwater No	Drillers Log	Distance	Direction
GW800662	0.00m-6.10m Gravel, sandy 6.10m-21.90m Clay, sandy 21.90m-53.90m Limestone, hard 53.90m-60.90m Basalt	1141m	North East
GW016394	0.00m-3.05m Soil 3.05m-3.66m Clay Gravel 3.66m-7.92m Clay White Yellow 7.92m-22.25m Clay Yellow Water Supply 22.25m-35.05m Clay Yellow 22.25m-35.05m Slate 35.05m-43.89m Slate Water Supply	1182m	West
GW055555	0.00m-0.60m Topsoil 0.60m-23.30m Clay Coloured 23.30m-28.90m Shale Broken Water Supply 28.90m-53.80m Shale Black Water Supply	1207m	West
GW052966	0.00m-21.34m Water Bearing 21.34m-21.35m Limestone	1225m	South East
GW055554	0.00m-0.30m Made Ground 0.30m-9.20m Clay 9.20m-45.50m Shale Decomposed Water Supply	1231m	West
GW030994	0.00m-1.00m Topsoil 1.00m-5.00m Clay 5.00m-6.00m Clay Gravel 6.00m-8.00m Clay Grey Yellow 8.00m-14.00m Clay Gravel 14.00m-14.50m Limestone Rock	1267m	East
GW052035	0.00m-12.00m Clay Water Supply 12.00m-21.00m Rock Rotten Water Supply	1288m	North
GW032066	0.00m-2.29m Loam Grey 2.29m-4.42m Loam Reddish Yellow Gritty 4.42m-5.03m Clay Grey Moist Sandy Water Supply 5.03m-5.49m Gravel Clayey Fine-medium Water Supply 5.49m-5.74m Gravel Small Fatty Water Supply 5.49m-5.74m Sand 5.74m-5.94m Sand 5.74m-5.94m Gravel Small Slightly Fatty Water Supply 5.94m-6.81m Gravel Fine-medium Water Supply 5.94m-6.81m Sand Coarse 6.81m-7.47m Gravel Very Clayey Medium Water Supply	1305m	North East
GW051722	0.00m-0.60m Topsoil 0.60m-22.60m Clay Multicoloured 22.60m-31.30m Shale Broken Bands Water Supply 31.30m-33.20m Shale Black Broken 33.20m-36.90m Shale Black	1333m	West
GW060384	0.00m-3.66m SANDY CLAY 3.66m-24.08m CLAY 24.08m-51.51m SHALE - WATER SUPPLY 51.51m-60.05m QUARTZITE - WATER SUPPLY 60.05m-60.96m SHALE	1352m	West
GW032065	0.00m-1.98m Loam Dark Grey 1.98m-4.11m Clay Reddish Yellow Gritty 4.11m-4.42m Sand Wet Clayey Water Supply 4.11m-4.42m Gravel 4.42m-5.18m Sand Grey Silty Water Supply 5.18m-6.71m Sand Clean Coarse Water Supply 5.18m-6.71m Large Gravel 6.71m-7.54m Gravel Large Clayey Water Supply	1363m	North East
GW054479	0.00m-0.30m Topsoil 0.30m-3.60m Clay 3.60m-38.10m Shale 38.10m-47.00m Shale Black Water Supply	1365m	West
GW032064	0.00m-2.13m Loam Grey 2.13m-3.05m Clay Reddish Yellow Gritty 3.05m-3.81m Clay Dry 3.05m-3.81m Gravel Medium-coarse 3.81m-4.11m Clay Grey Sandy Moist 4.11m-4.67m Gravel Small Sand Water Supply 4.11m-4.67m Slightly Fatty 4.67m-5.31m Gravel Small 4.67m-5.31m Sand Clean Coarse Water Supply 5.31m-7.32m Sand Clean Coarse Water Supply 5.31m-7.32m Gravel Medium 7.32m-7.98m Gravel Clayey Sand Water Supply	1409m	North East

Groundwater No	Drillers Log	Distance	Direction
GW019988	0.00m-0.61m Soil 0.61m-3.05m Clay Slate 3.05m-6.10m Slate Yellow 6.10m-6.71m Mudstone Red 6.71m-12.80m Slate Yellow 12.80m-25.91m Slate Water Supply 25.91m-38.10m Slate Black Water Supply	1420m	North West
GW030985	0.00m-1.00m Topsoil 1.00m-3.00m Clay Red 3.00m-8.00m Clay Red Gravel 8.00m-12.50m Gravel Large Water Bearing 12.50m-13.00m Clay Bands 13.00m-15.00m Gravel Large Water Supply 15.00m-16.00m Clay Yellow White Shaley 16.00m-17.00m Clay Large Stoney Shaley 17.00m-18.00m Clay Yellow White Shaley 18.00m-20.00m Clay Black Coal	1423m	East
GW054102	0.00m-0.30m Topsoil 0.30m-18.80m Clay Coloured 18.80m-23.60m Shale Decomposed 23.60m-31.40m Shale Black	1424m	North West
GW052778	0.00m-0.30m Topsoil 0.30m-0.90m Clay Topsoil 0.90m-12.90m Clay Coloured 12.90m-25.20m Shale Decomposed 25.20m-31.60m Shale Water Supply	1446m	North West
GW060382	0.00m-4.57m SANDY CLAY 4.57m-19.81m CLAY 19.81m-21.34m GRAVEL 21.34m-53.34m SHALE WATER SUPPLY	1454m	West
GW032063	0.00m-1.52m Loam 1.52m-1.83m Granite Decomposed 1.83m-3.05m Clay Gritty 3.05m-3.96m Gravel Dry Tight Coarse 3.96m-5.18m Gravel Wet Sand Coarse Water Supply 5.18m-5.43m Gravel Sand Water Supply 5.43m-5.54m Sand Clayey Gravel Water Supply 5.54m-5.87m Sand Clean Water Supply 5.54m-5.87m Gravel Medium 5.87m-5.94m Gravel Medium 5.87m-5.94m Sand Clayey Water Supply 5.94m-6.30m Sand Clean Water Supply 5.94m-6.30m Gravel Medium 6.30m-6.35m Gravel Medium 6.30m-6.35m Sand Clayey Water Supply 6.35m-7.09m Sand Clean Water Supply 6.35m-7.09m Gravel Medium 7.09m-7.19m Gravel Medium 7.09m-7.19m Sand Clayey Water Supply 7.19m-7.52m Sand Clean Water Supply 7.19m-7.52m Gravel Medium Water Supply 7.52m-8.23m Gravel Very Clayey Water Supply	1485m	North East
GW800270	0.00m-0.50m TOPSOIL 0.50m-5.90m GRAVEL & CLAY 5.90m-23.00m DECOMPOSED SHALE 23.00m-38.00m BLUE SHALE	1554m	South West
GW055556	0.00m-0.30m Topsoil 0.30m-3.05m Clay 3.05m-8.53m Shale Decomposed 8.53m-17.68m Shale Black	1561m	North
GW032062	0.00m-2.13m Loam Grey 2.13m-3.35m Clay Reddish Yellow Gritty 3.35m-3.81m Sand Dry Clayey 3.81m-3.96m Sand Clayey Moist 3.96m-4.27m Sand Clayey Wet Water Supply 4.27m-4.72m Gravel Clayey Pebbles/pebbly Water Supply 4.27m-4.72m Sand 4.72m-5.03m Sand 4.72m-5.03m Gravel Clean Small Water Supply 5.03m-5.09m Clay Grey Puggy Water Supply 5.09m-5.18m Gravel Clean Small Water Supply 5.09m-5.18m Sand 5.18m-6.49m Sand 5.18m-6.49m Gravel Clean Fine-medium Water Supply 6.49m-7.16m Gravel Very Clayey Medium Water Supply	1578m	North East

Groundwater No	Drillers Log	Distance	Direction
GW052243	0.00m-0.60m Topsoil 0.60m-25.70m Clay Coloured 25.70m-38.00m Shale Decomposed Water Supply 38.00m-44.40m Shale Water Supply	1587m	West
GW039336	0.00m-3.00m Topsoil Water Supply 3.00m-12.00m Gravel Clay Water Supply 12.00m-13.00m Gravel Large Clay Bands Water Supply 13.00m-14.00m Clay Grey 14.00m-15.00m Driller	1597m	East
GW032070	0.00m-1.52m Loam Grey 1.52m-2.44m Clay Yellow Grey 2.44m-3.51m Sand Clayey 3.51m-3.96m Sand Clean Gravel Water Supply Some Pebbles/pebbly 3.96m-6.89m Sand Clayey Gravel 6.89m-7.62m Gravel Clayey Coarse 7.62m-8.14m Gravel Clean Medium Water Supply 8.14m-9.07m Gravel Clean Water Supply Some Large Cobbles 9.07m-9.14m Clay White 9.14m-9.15m Rock	1609m	North
GW030982	0.00m-0.30m Topsoil 0.00m-0.30m Gravel Clay 0.30m-5.50m Gravel Dry Band 0.30m-5.50m Clay Red Sandy 5.50m-12.00m Gravel Dirty Large Water Supply 12.00m-13.00m Gravel Large Some Clay Bands Water Supply 13.00m-15.00m Shale Grey Sandy 13.00m-15.00m Some Large Stones	1616m	East
GW039320	0.00m-3.00m Topsoil 3.00m-12.00m Gravel Clay Water Supply 12.00m-13.00m Gravel Large Clay Bands Water Supply 13.00m-14.00m Clay Grey	1619m	East
GW032071	0.00m-1.52m Loam Grey 1.52m-2.74m Clay 2.74m-3.35m Sand Clayey Water Supply 3.35m-5.94m Sand Clean Gravel Water Supply 5.94m-6.55m Gravel Clayey Water Supply 6.55m-7.01m Clay Gravel Water Supply	1635m	North
GW032073	0.00m-1.52m Loam Grey 1.52m-2.74m Clay 2.74m-3.35m Sand Silty Water Supply 3.35m-3.96m Gravel Clean Sandy Water Supply 3.96m-4.50m Gravel Clean Sand Fine Water Supply 4.50m-5.97m Gravel Clean Sand Water Supply 4.50m-5.97m Some Small Cobbles 5.97m-6.55m Some Small Cobbles 5.97m-6.55m Gravel Clayey 6.55m-6.92m Clay Gravel 6.92m-7.56m Sand Clayey 7.56m-9.66m Sand Clayey Gravel 9.66m-10.36m Sand Yellow Clayey	1635m	North
GW032072	0.00m-1.22m Loam Grey 1.22m-2.44m Clay 2.44m-3.05m Sand Fine 3.05m-3.56m Sand Gravel Fine Water Supply 3.56m-5.61m Gravel Sand Medium Water Supply 5.61m-6.20m Gravel Clayey Sand 6.20m-7.14m Gravel Clayey Sand Medium 7.14m-8.84m Gravel Clayey 8.84m-9.14m Gravel Slightly Clayey 9.14m-9.75m Sand Yellow Clayey Coarse 9.75m-10.42m Sand Yellow Clayey Coarse Gravel Coarse 10.42m-11.05m Sand Yellow Clayey Coarse Clay Seams 11.05m-11.66m Gravel Clayey Coarse 11.66m-12.24m Clay White 12.24m-12.25m Rock	1645m	North
GW032061	0.00m-2.29m Loam Grey 2.29m-3.35m Clay Reddish Yellow Gritty 3.35m-3.66m Sand Wet Clayey 3.66m-4.04m Gravel Clayey Wet Water Supply 3.66m-4.04m Sand Water Supply 4.04m-4.63m Gravel Small Water Supply 4.04m-4.63m Sand Clean Fine Water Supply 4.63m-4.82m Sand Gravel Water Supply 4.63m-4.82m Slightly Clayey 4.82m-5.49m Gravel Small Clean Water Supply 5.49m-7.16m Gravel Clean Medium Water Supply 7.16m-7.85m Gravel Very Clayey Medium	1650m	North East

Groundwater No	Drillers Log	Distance	Direction
GW804059	0.00m-0.50m Topsoil 0.50m-12.00m Clay 12.00m-66.00m Shale	1691m	South
GW051755	0.00m-0.30m Topsoil 0.30m-23.30m Clay Coloured 23.30m-25.80m Shale Broken Water Supply 25.80m-32.60m Shale Black Broken Water Supply	1729m	North West
GW802744	0.00m-0.50m Topsoil 0.50m-1.50m Clay 1.50m-54.00m Shale	1748m	West
GW020315	0.00m-1.52m Soil 1.52m-3.05m Clay 3.05m-4.57m Clay Stones 4.57m-6.10m Gravel Sand 6.10m-9.14m Gravel Sand Angular	1754m	North East
GW801479	0.00m-1.00m Topsoil 1.00m-6.00m Clay 6.00m-26.00m Soft Shale 26.00m-56.00m Limestone	1756m	South
GW801561	0.00m-0.30m Topsoil 0.30m-1.00m Clay 1.00m-18.29m Shale 18.29m-56.39m Limestone	1758m	South
GW030974	0.00m-1.00m Topsoil 1.00m-3.00m Clay Grey 3.00m-5.50m Clay Grey Yellow 5.50m-10.00m Gravel Large Water Supply 10.00m-12.00m Clay Grey 12.00m-17.00m Clay Grey Yellow 17.00m-18.00m Clay Black Sandy 18.00m-19.50m Clay Weathered Dry Gravel	1774m	East
GW057117	0.00m-0.30m Topsoil 0.30m-4.30m Clay Gravel 4.30m-8.00m Clay 8.00m-22.10m Shale Weathered Water Supply 22.10m-24.00m Shale	1784m	North West
GW801121	0.00m-1.00m Topsoil 1.00m-42.00m Shale	1788m	West
GW801217	0.00m-1.00m Topsoil 1.00m-2.00m Clay 2.00m-18.00m Shale, brown 18.00m-56.00m Limestone	1789m	South
GW020314	0.00m-1.52m Soil 1.52m-3.05m Clay Stones 3.05m-6.10m Gravel 6.10m-9.14m Gravel Sand	1834m	North East
GW055401	0.00m-0.30m Topsoil 0.30m-5.80m Clay 5.80m-8.90m Gravel Water Supply 8.90m-12.35m Clay Black	1848m	North
GW800663	0.00m-2.00m Clay, brown, and shale 2.00m-3.00m Clay, white, and shale 3.00m-7.00m Clay, brown and shale 7.00m-11.00m Shale, black 11.00m-16.00m Shale, brown 16.00m-39.00m Shale, blue 39.00m-42.00m Slate, black 42.00m-46.00m Slate, blue/black	1851m	West
GW024224	0.00m-0.61m Topsoil 0.61m-7.01m Clay 7.01m-24.38m Sandstone Soft Water Supply 24.38m-30.48m Shale	1852m	North West
GW032069	0.00m-1.22m Loam Grey 1.22m-3.05m Clay 3.05m-4.27m Sand Gravel Fine Water Supply 4.27m-4.80m Sand Gravel Water Supply 4.80m-5.11m Sand Fatty 4.80m-5.11m Gravel Coarse 5.11m-6.61m Gravel Medium 5.11m-6.61m Sand Clayey 6.61m-7.16m Clay Some Gravel 7.16m-7.62m Gravel Clayey Fine 7.62m-8.74m Gravel Clayey Medium 8.74m-8.84m Clay Yellow	1863m	North

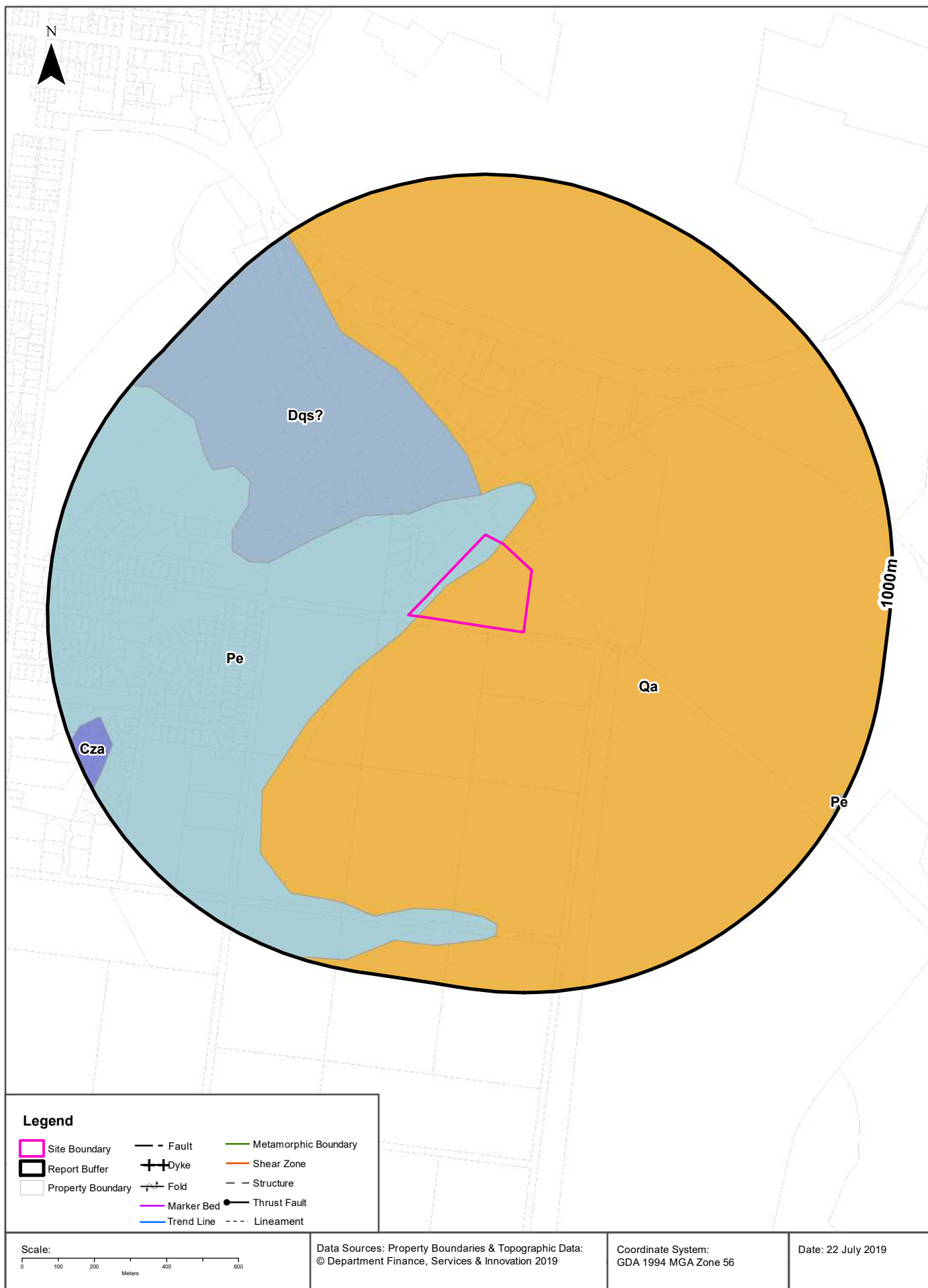


Groundwater No	Drillers Log	Distance	Direction
GW802273	0.00m-0.50m Topsoil 0.50m-16.00m Shale, brown 16.00m-30.00m Shale, grey 30.00m-36.00m Slate, grey 36.00m-48.00m Shale, grey	1899m	West
GW036118	0.00m-1.00m Topsoil 1.00m-2.00m Clay Grey 2.00m-4.00m Clay Grey Some Gravel 4.00m-7.00m Sand Gravel Water Supply 7.00m-13.00m Clay Multicoloured 13.00m-13.50m Slate Hard	1905m	North
GW036120	0.00m-1.00m Topsoil 1.00m-3.00m Clay 3.00m-3.50m Clay Multicoloured 3.50m-5.00m Clay Multicoloured Gravel 5.00m-7.00m Sand Clay Gravel 7.00m-12.00m Sand Gravel Water Supply 12.00m-13.00m Sand Gravel clay 13.00m-16.10m Clay Grey Some Stones 16.10m-16.60m Slate Grey	1941m	North East
GW030991	0.00m-1.00m Clay Dark Brown Silty 1.00m-2.50m Clay Gravel Silty 2.50m-3.50m Clay Hard Gravel Silty 3.50m-7.00m Gravel Sandy Some Boulder 7.00m-11.50m Shale Grey 11.50m-12.00m Shale Grey Firm Some Gritty	1943m	North
GW051650	0.00m-0.60m Topsoil 0.60m-3.00m Clay 3.00m-12.00m Clay Red 12.00m-13.10m Gravel Water Supply 13.10m-18.90m Slate	1955m	North
GW005072	0.00m-12.19m Soil 12.19m-22.86m Slate Grey Soft 22.86m-24.08m Slate Hard Water Supply	1978m	West

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp  
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# Geology 1:250,000

132-134 Lions Drive, Mudgee, NSW 2850



# Geology

132-134 Lions Drive, Mudgee, NSW 2850

## Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Pe	Carbonaceous siltstone, quartz-lithic sandstone, conglomerate and coal lenses, rare varves				Palaeozoic			1:250,000
Qa	Alluvial silt, clay and sand, variable humic content, sporadic pebble- to cobble-sized unconsolidated conglomeratic lenses				Cainozoic			1:250,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Cza	Unconsolidated quartz and quartz-lithic gravel, sand, silt and clay	undifferentiated			Cainozoic			1:250,000
Dqs?	Lithic sandstone, pebbly mudstone, allodapic and allochthonous limestone	Sutchers Creek Formation	Queens Pinch Group		Palaeozoic			1:250,000
Pe	Carbonaceous siltstone, quartz-lithic sandstone, conglomerate and coal lenses, rare varves				Palaeozoic			1:250,000
Qa	Alluvial silt, clay and sand, variable humic content, sporadic pebble- to cobble-sized unconsolidated conglomeratic lenses				Cainozoic			1:250,000

## Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

Geological Data Source : NSW Department of Industry, Resources & Energy  
© State of New South Wales through the NSW Department of Industry, Resources & Energy

# Naturally Occurring Asbestos Potential

132-134 Lions Drive, Mudgee, NSW 2850

## Naturally Occurring Asbestos Potential

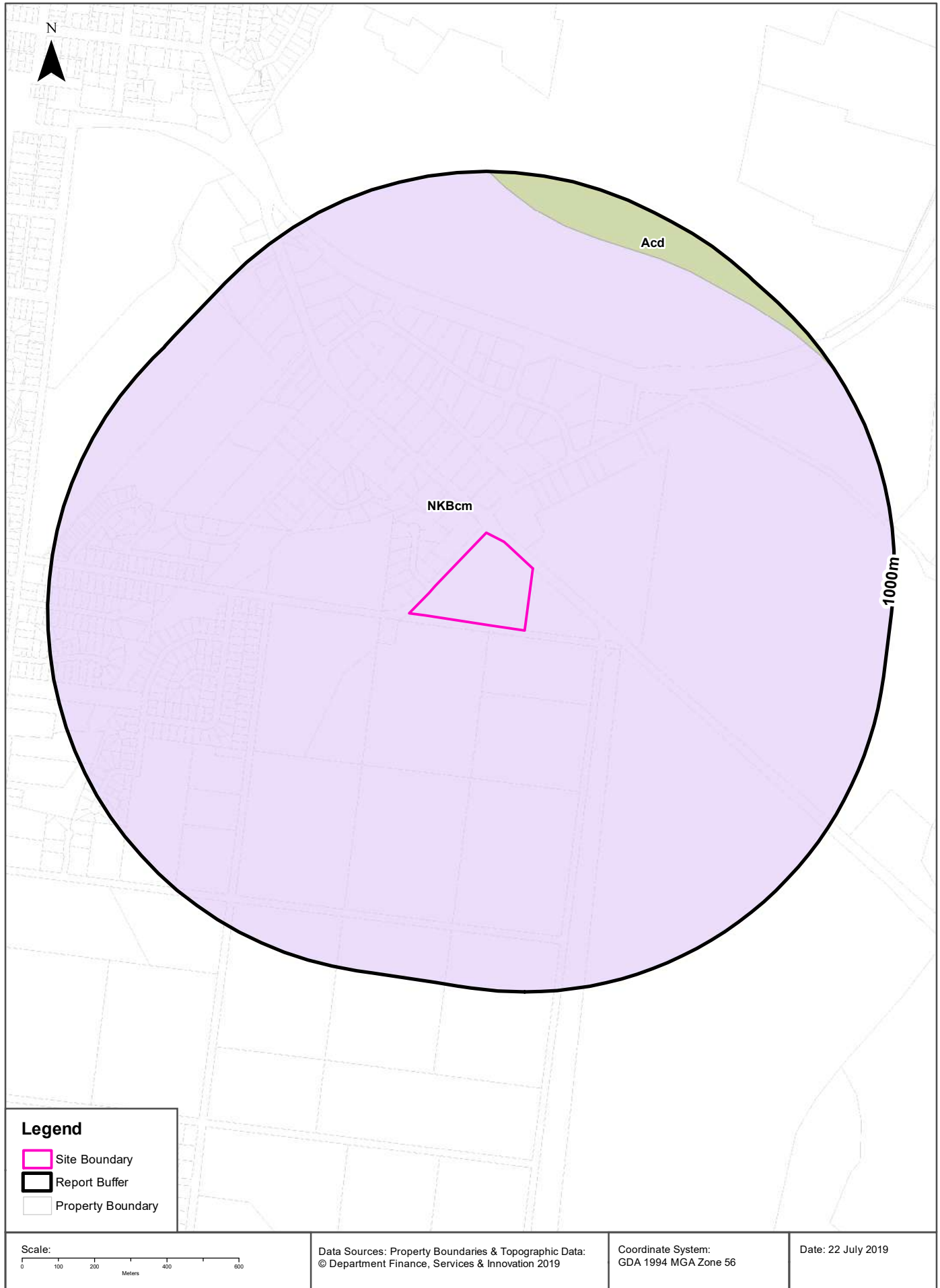
Naturally Occurring Asbestos Potential within the dataset buffer:

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

132-134 Lions Drive, Mudgee, NSW 2850



## Soils

132-134 Lions Drive, Mudgee, NSW 2850

### Soil Landscapes

What are the onsite Soil Landscapes?

Soil Code	Name	Group	Process	Map Sheet	Scale
NKBcm	CRAIGMORE	NON-CALCIC BROWN SOILS		Dubbo	1:250,000

What are the Soil Landscapes within the dataset buffer?

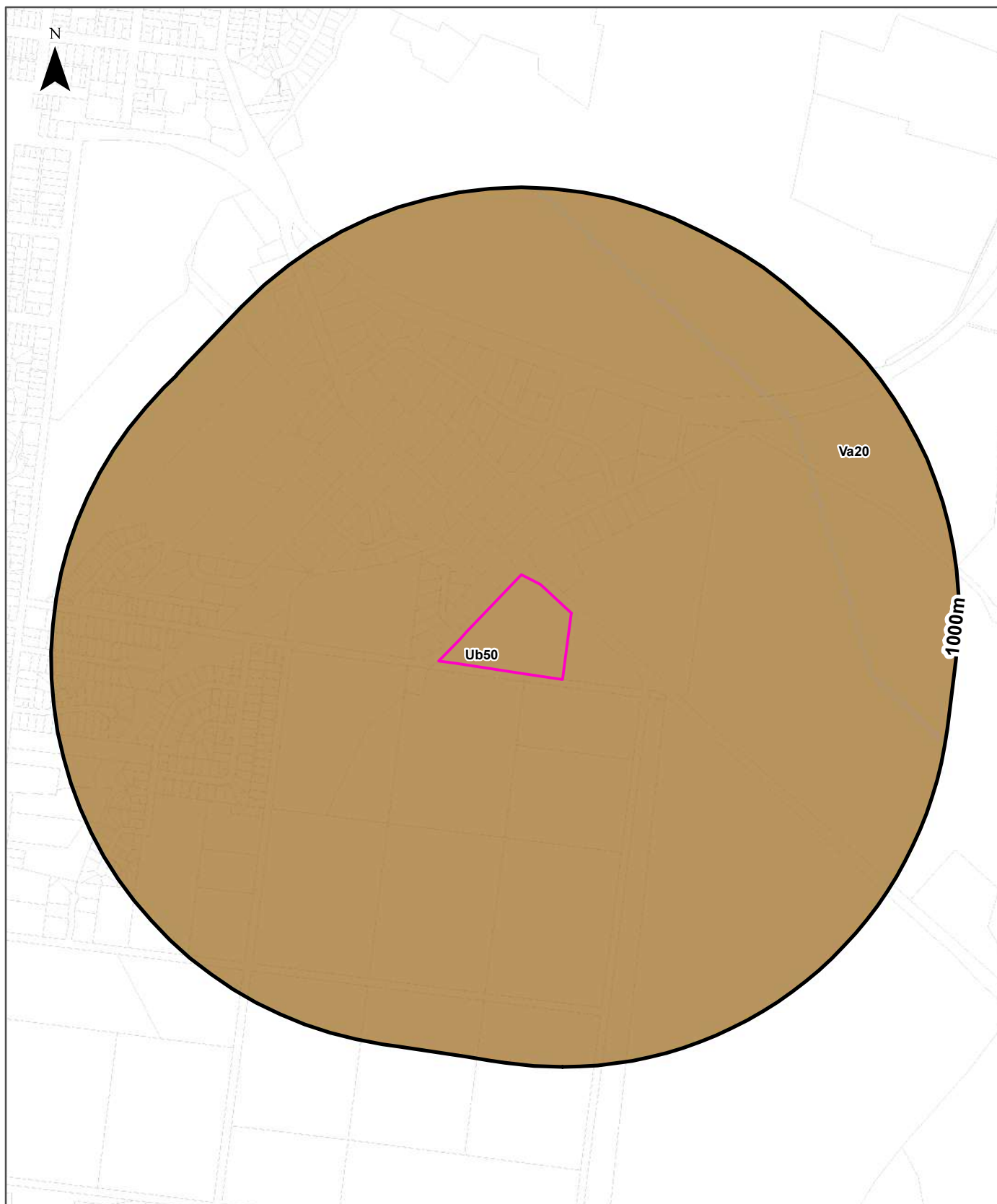
Soil Code	Name	Group	Process	Map Sheet	Scale
Acd	CUDGEGONG	ALLUVIAL SOILS		Dubbo	1:250,000
NKBcm	CRAIGMORE	NON-CALCIC BROWN SOILS		Dubbo	1:250,000

Soils Landscapes Data Source : NSW Office of Environment and Heritage

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# Atlas of Australian Soils

132-134 Lions Drive, Mudgee, NSW 2850



<b>Legend</b> Site Boundary Report Buffer Property Boundary		<b>Australian Soil Classification Orders</b> <table border="0"> <tr> <td> Anthroposol</td> <td> Dermosol</td> <td> Kandosol</td> <td> Podosol</td> <td> Tenosol</td> <td> No Data</td> </tr> <tr> <td> Calcarosol</td> <td> Ferrosol</td> <td> Kurosol</td> <td> Rudosol</td> <td> Vertosol</td> <td></td> </tr> <tr> <td> Chromosol</td> <td> Hydrosol</td> <td> Organosol</td> <td> Sodosol</td> <td> Lake</td> <td></td> </tr> </table>						Anthroposol	Dermosol	Kandosol	Podosol	Tenosol	No Data	Calcarosol	Ferrosol	Kurosol	Rudosol	Vertosol		Chromosol	Hydrosol	Organosol	Sodosol	Lake	
Anthroposol	Dermosol	Kandosol	Podosol	Tenosol	No Data																				
Calcarosol	Ferrosol	Kurosol	Rudosol	Vertosol																					
Chromosol	Hydrosol	Organosol	Sodosol	Lake																					
<b>Scale:</b> 		Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2019		Coordinate System: GDA 1994 MGA Zone 56		Date: 22 July 2019																			

# Soils

132-134 Lions Drive, Mudgee, NSW 2850

## Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance
Ub50	Sodosol	Gently undulating to hilly country of hard neutral yellow mottled soils (Dy3.42) with hard neutral red soils (Dr2.42 and Dr2.22). Associated are red earths (Gn2.15) and possibly other (Gn2) soils; and small areas of other soils, including (Ug5.1) and (Gn3.1). As mapped, areas of unit Va20 are included along the larger streams. Data are limited.	0m
Va20	Sodosol	Valley plain and terraces of hard alkaline yellow mottled soils (Dy3 .43), red earths (Gn2. 15), and possibly other (Gn2) soils. Associated are younger terraces of (Um6.11) soils and flood-plains of (Um) and (Uc) soils. Compare units Ub47, Gb6, and X9. Data are limited.	696m

Atlas of Australian Soils Data Source: CSIRO

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# Acid Sulfate Soils

132-134 Lions Drive, Mudgee, NSW 2850

## Environmental Planning Instrument - Acid Sulfate Soils

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

Soil Class	Description	EPI Name
N/A		

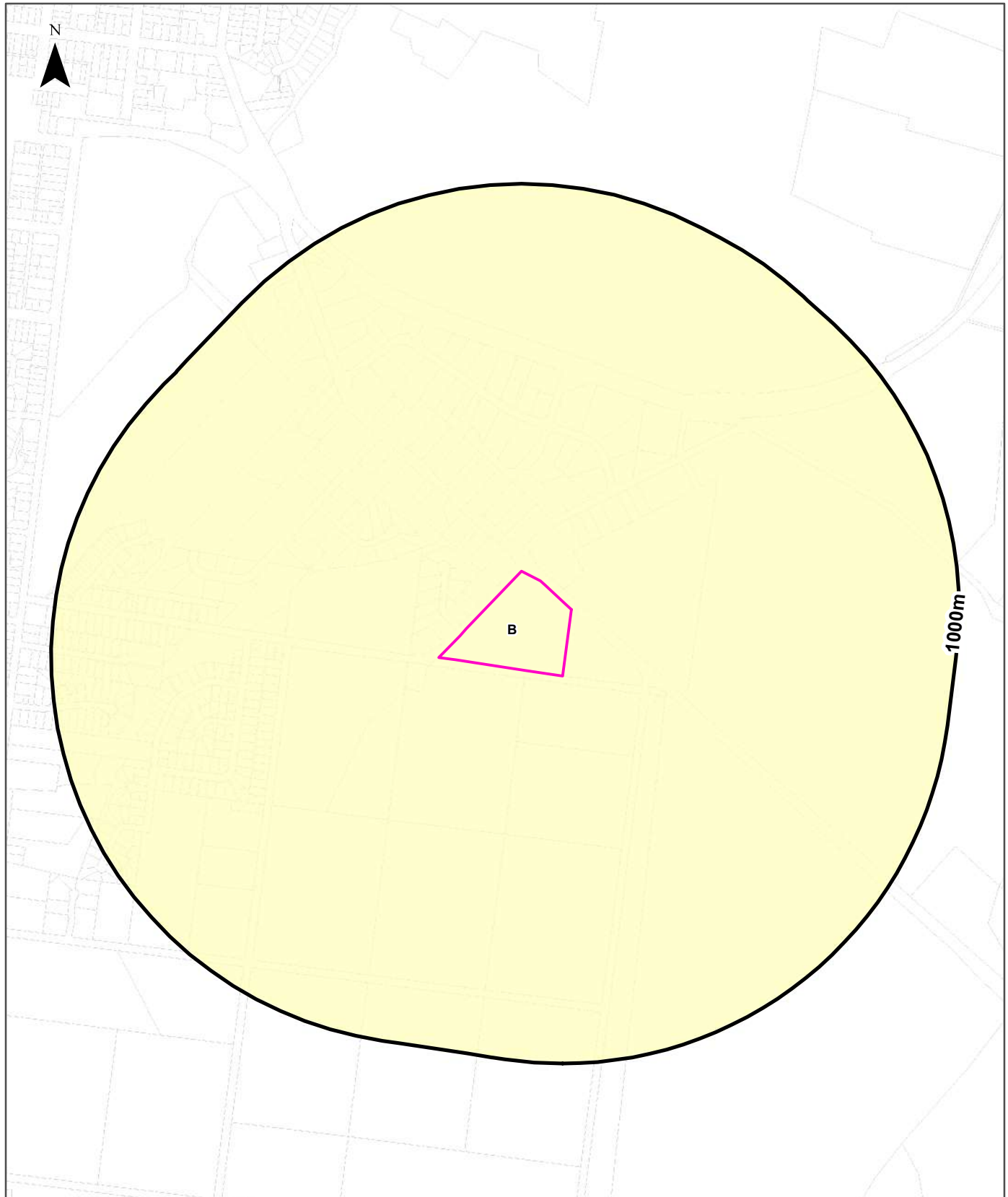
If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

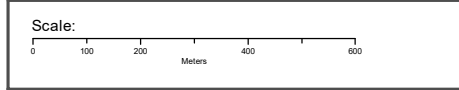
Acid Sulfate Data Source Accessed 23/10/2018: NSW Crown Copyright - Planning and Environment  
Creative Commons 4.0 © Commonwealth of Australia <https://creativecommons.org/licenses/by/4.0/>

# Atlas of Australian Acid Sulfate Soils

132-134 Lions Drive, Mudgee, NSW 2850



Legend			
Site Boundary	<b>Probability of occurrence of Acid Sulfate Soils</b>		
Report Buffer	A. High (>70%)	C. Extremely Low (1-5%)	No Data
Property Boundary	B. Low (6-70%)	D. No Chance (0%)	



Data Sources: Property Boundaries & Topographic Data:  
© Department Finance, Services & Innovation 2019

Coordinate System:  
GDA 1994 MGA Zone 56

Date: 22 July 2019

## Acid Sulfate Soils

132-134 Lions Drive, Mudgee, NSW 2850

### Atlas of Australian Acid Sulfate Soils

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

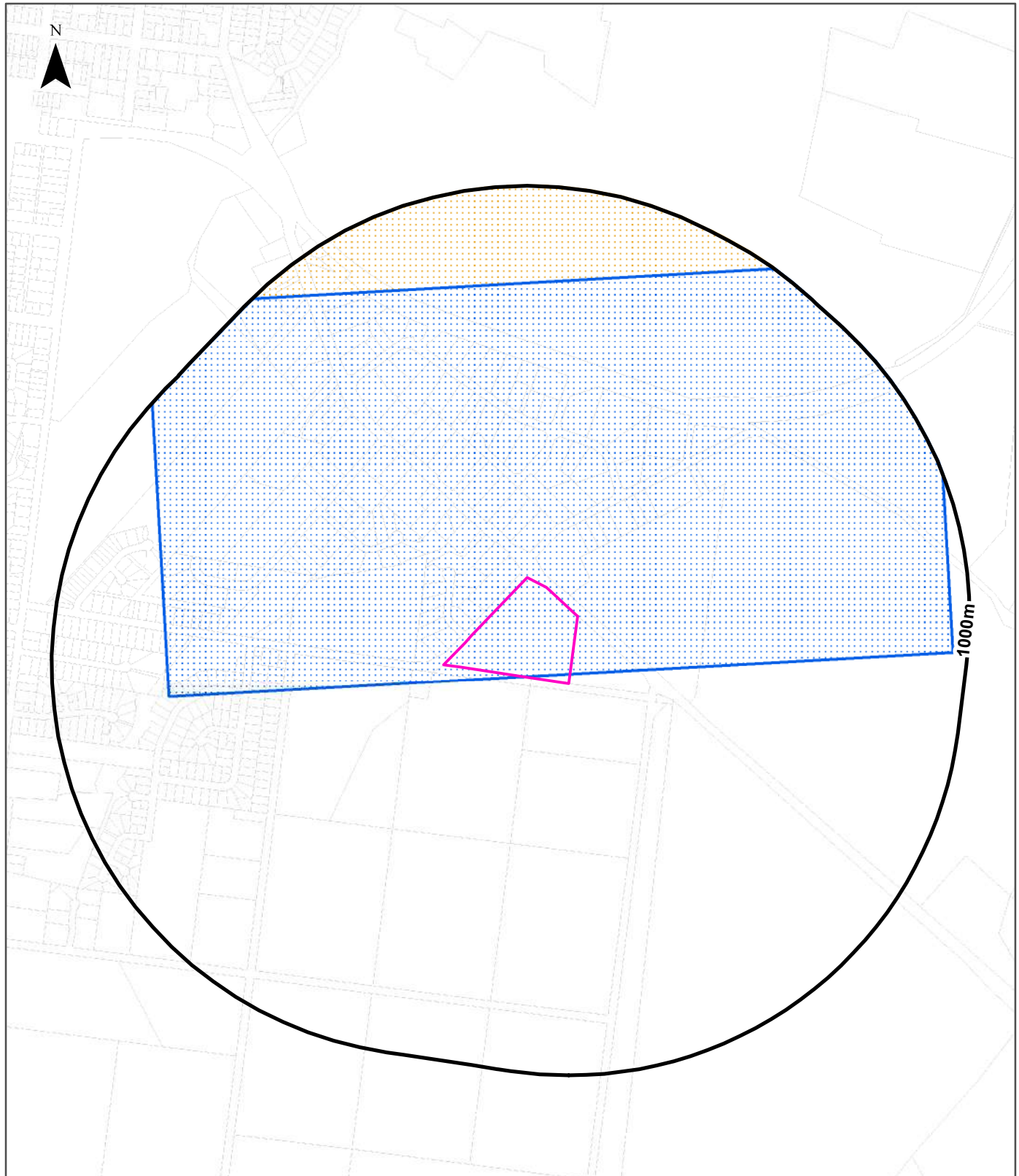
Class	Description	Distance
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

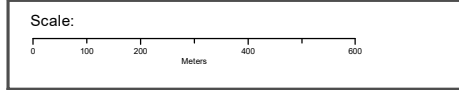
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# Dryland Salinity

132-134 Lions Drive, Mudgee, NSW 2850



Legend	Dryland Salinity - National Assessment	Salinity Potential of Western Sydney
Site Boundary	Delineated risk area but no high hazard or risk rating for either 2000, 2020, 2050	Area of Known Salinity
Report Buffer	High hazard or risk in 2050 only	Area of High Salinity Potential
Property Boundary	High hazard or risk in 2020 and 2050. 2020 not defined as high hazard	Area of Moderate Salinity Potential
	High hazard or risk defined for 2050, but no assessment made for 2000 or 2020	Area of Very Low Salinity Potential
	High hazard or risk defined for all years: 2000, 2020, 2050	Area of Water



Data Sources: Property Boundaries & Topographic Data:  
© Department Finance, Services & Innovation 2019

Coordinate System:  
GDA 1994 MGA Zone 56

Date: 22 July 2019

## Dryland Salinity

132-134 Lions Drive, Mudgee, NSW 2850

### Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

Is there Dryland Salinity - National Assessment data within the dataset buffer?

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
-	-	High hazard or risk	0m	Onsite
-	High hazard or risk	High hazard or risk	750m	North West

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.

### Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
N/A	Outside Data Coverage			

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage

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## Mining Subsidence Districts

132-134 Lions Drive, Mudgee, NSW 2850

## Mining Subsidence Districts

Mining Subsidence Districts within the dataset 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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# State Environmental Planning Policy

132-134 Lions Drive, Mudgee, NSW 2850

## State Significant Precincts

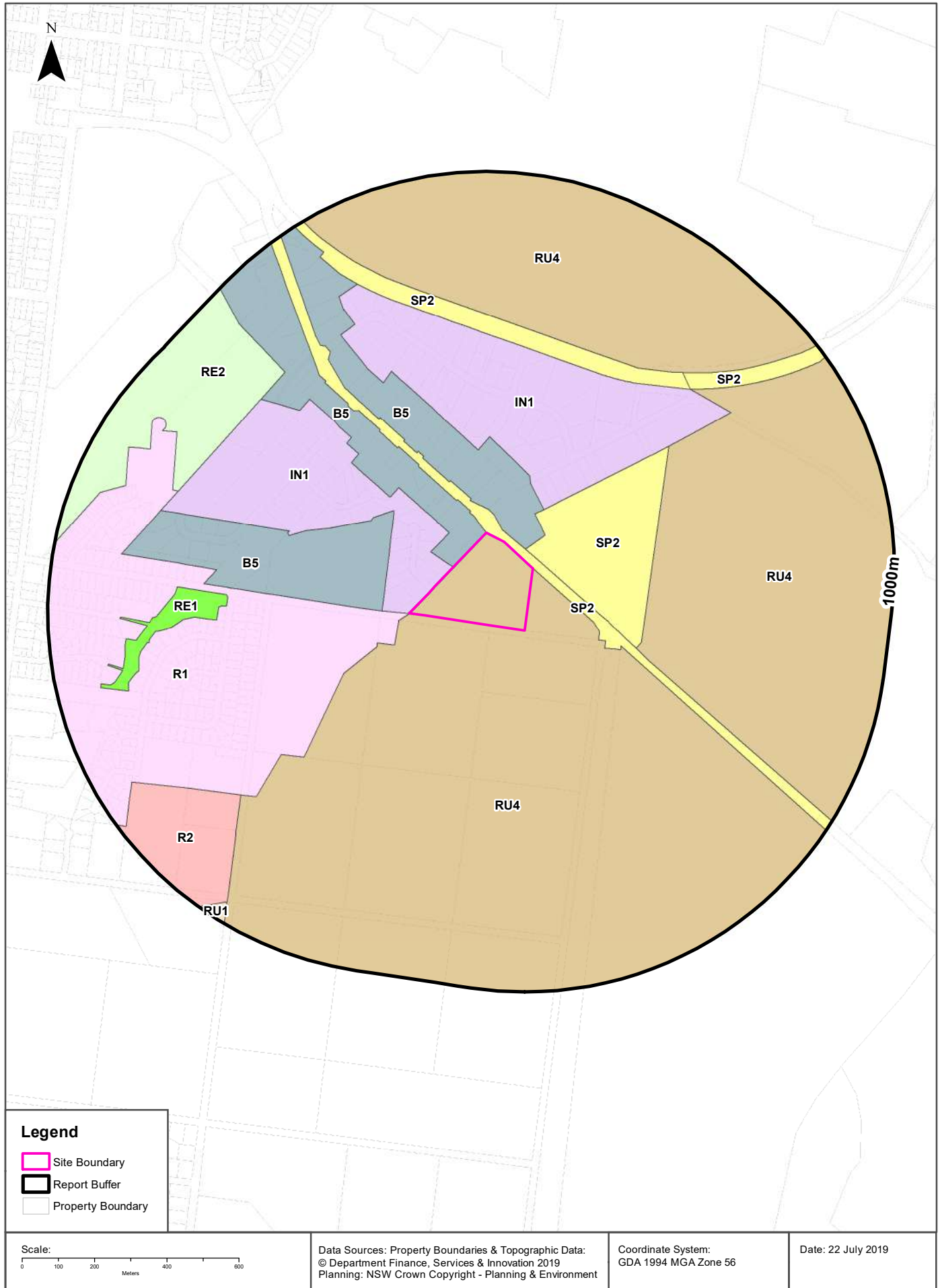
What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No Records in Buffer							

State Environment Planning Policy Data Source: NSW Crown Copyright - Planning & Environment  
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# EPI Planning Zones

132-134 Lions Drive, Mudgee, NSW 2850





# Environmental Planning Instrument

132-134 Lions Drive, Mudgee, NSW 2850

## Land Zoning

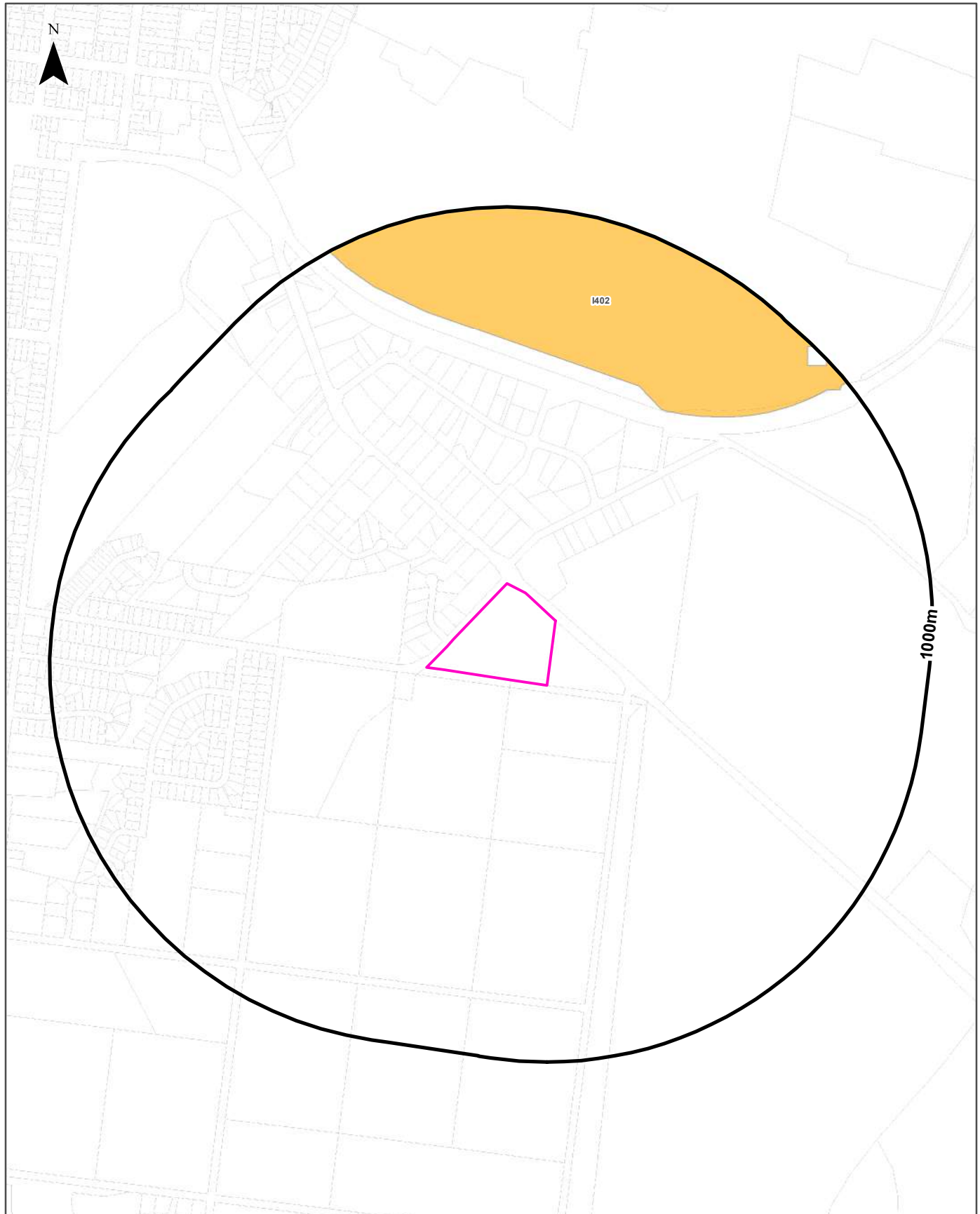
What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RU4	Primary Production Small Lots		Mid-Western Regional Local Environmental Plan 2012	09/08/2018	09/08/2018	14/12/2018	Amendment No 18	0m	Onsite
B5	Business Development		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		0m	North West
IN1	General Industrial		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		0m	North West
R1	General Residential		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		0m	West
SP2	Infrastructure	Classified Road	Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		0m	South East
B5	Business Development		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		23m	North
SP2	Infrastructure	Water Supply System	Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		25m	East
B5	Business Development		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		76m	West
IN1	General Industrial		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		140m	North
RU4	Primary Production Small Lots		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		311m	South East
RE1	Public Recreation		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		505m	West
SP2	Infrastructure	Rail Infrastructure	Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		519m	North
RU4	Primary Production Small Lots		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		569m	North
SP2	Infrastructure	Rail Infrastructure	Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		659m	East
R2	Low Density Residential		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		687m	South West
RE2	Private Recreation		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		702m	North West
RU1	Primary Production		Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	14/12/2018		945m	South West

Environmental Planning Instrument Data Source: NSW Crown Copyright - Planning & Environment  
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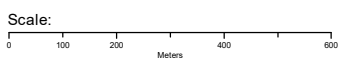
# Heritage Items

132-134 Lions Drive, Mudgee, NSW 2850



## Legend

- Property Boundary
- Site Boundary
- Report Buffer
- Commonwealth Heritage List
- National Heritage List
- State Heritage Items
- EPI Heritage Items



Data Sources: Property Boundaries & Topographic Data:  
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Heritage - NSW Crown Copyright - Planning & Environment

Coordinate System:  
GDA 1994 MGA Zone 56

Date: 22 July 2019

## Heritage

132-134 Lions Drive, Mudgee, NSW 2850

### Commonwealth Heritage List

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

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

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

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

Note. Please click on Place Id to activate a hyperlink to online website.

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

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch  
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### State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset 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 - Office of Environment & Heritage  
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### Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I402	Burrundulla Station and homes	Item - General	Local	Mid-Western Regional Local Environmental Plan 2012	10/08/2012	10/08/2012	10/08/2012	606m	North

Heritage Data Source: NSW Crown Copyright - Planning & Environment  
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## Natural Hazards

132-134 Lions Drive, Mudgee, NSW 2850

### Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
No records within buffer		

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

## Ecological Constraints

132-134 Lions Drive, Mudgee, NSW 2850

### Vegetation of the Central Tablelands

What Vegetation of the Central Tablelands exists within the dataset buffer?

Vegetation Code	Vegetation Type	Description	Class	Formation	Crown Cover	Disturbance	Confidence	Distance	Direction
N/A	No records within buffer								

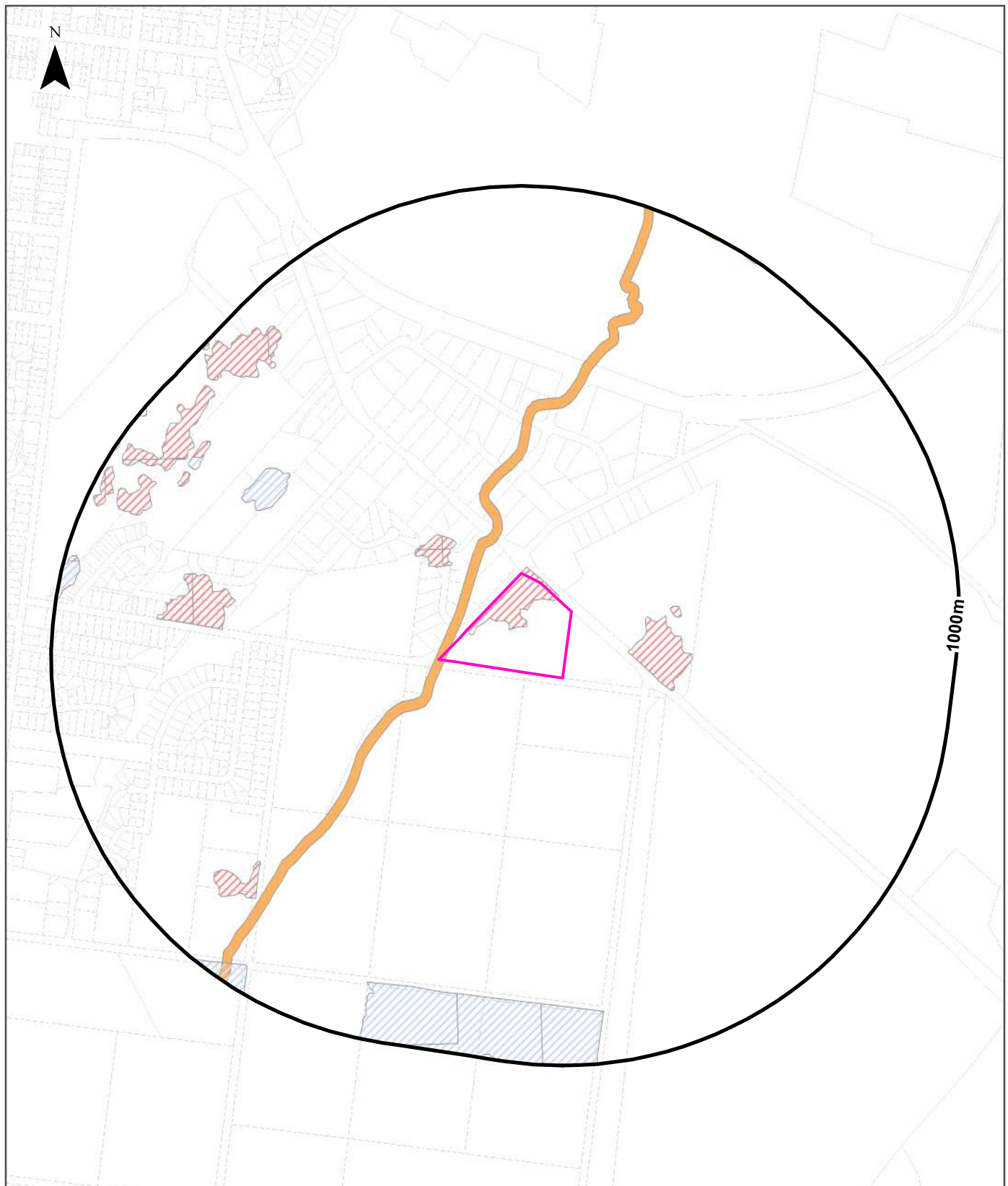
Vegetation of the Central Tablelands Data Source: NSW Office of Environment and Heritage  
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

### Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

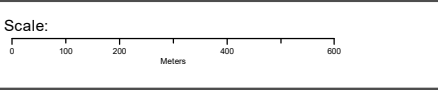
Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

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



**Legend**

Site Boundary	High potential GDE - from national assessment	Low potential GDE - from national assessment
Report Buffer	High potential GDE - from regional studies	Low potential GDE - from regional studies
Property Boundaries	Moderate potential GDE - from national assessment	Known GDE - from regional studies
	Moderate potential GDE - from regional studies	Unclassified potential GDE - from national assessment
		Unclassified potential GDE - from regional studies



Data Sources: Property Boundaries & Topographic Data:  
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Coordinate System:  
GDA 1994 MGA Zone 56

Date: 22 July 2019

# Ecological Constraints

132-134 Lions Drive, Mudgee, NSW 2850

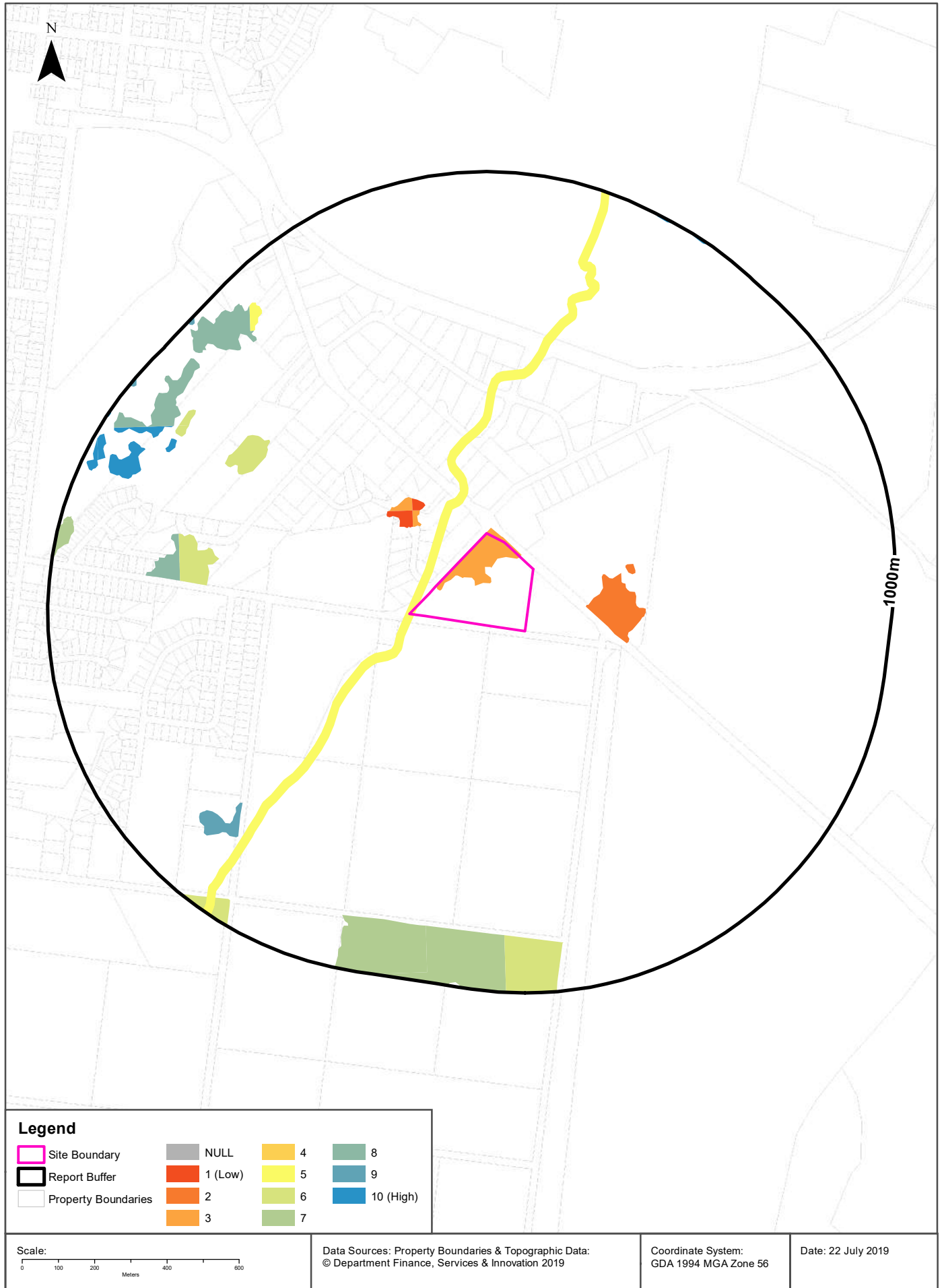
## Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Aquatic	Moderate potential GDE - from national assessment	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	River		0m
Terrestrial	High potential GDE - from regional studies	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		0m
Terrestrial	Low potential GDE - from regional studies	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		584m

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology  
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# Ecological Constraints - Inflow Dependent Ecosystems Likelihood

132-134 Lions Drive, Mudgee, NSW 2850





# Ecological Constraints

132-134 Lions Drive, Mudgee, NSW 2850

## Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Aquatic	5	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	River		0m
Terrestrial	3	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		0m
Terrestrial	2	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		157m
Terrestrial	1	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		159m
Terrestrial	6	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		547m
Terrestrial	8	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		639m
Terrestrial	9	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		696m
Terrestrial	10	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		793m
Terrestrial	7	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		840m
Terrestrial	5	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	Vegetation		850m
Aquatic	10	Granitic and basaltic tablelands and minor lowlands; includes the Canobolas dissected volcanic pile.	River		991m

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology  
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# Ecological Constraints

132-134 Lions Drive, Mudgee, NSW 2850

## NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardea ibis	Cattle Egret	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Grus rubicunda	Brolga	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Merops ornatus	Rainbow Bee-eater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Plegadis falcinellus	Glossy Ibis	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia ausfeldii	Ausfeld's Wattle	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus cannonii	Capertee Stringybark	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Lepidium hyssopifolium	Aromatic Peppergrass	Endangered	Not Sensitive	Endangered	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Leucochrysum albicans var. tricolor	Hoary Sunray	Not Listed	Not Sensitive	Endangered	
Plantae	Flora	Ozothamnus tessellatus		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Swainsona recta	Small Purple-pea	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Swainsona sericea	Silky Swainson-pea	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Veronica blakelyi		Vulnerable	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.

NSW BioNet: © State of NSW and Office of Environment and Heritage

Data obtained 22/07/2019

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# Annex E



# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 25/07/19 10:08:52

[Summary](#)

[Details](#)

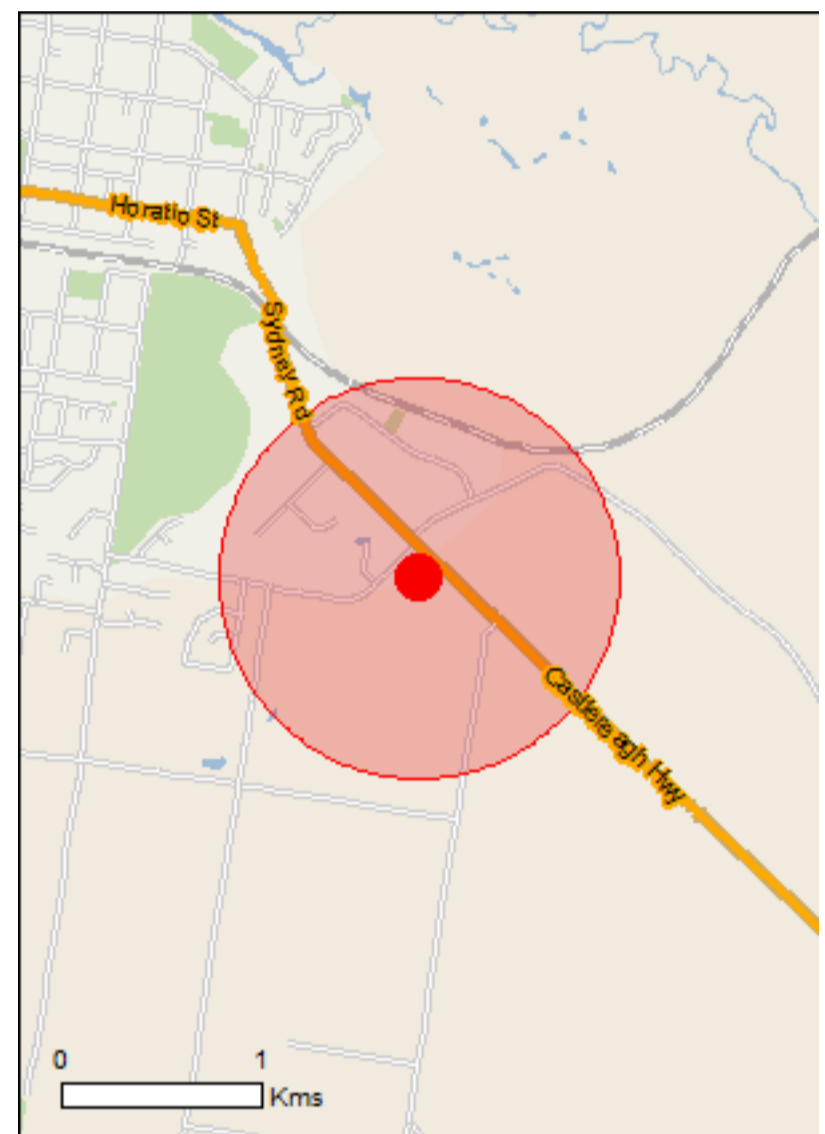
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

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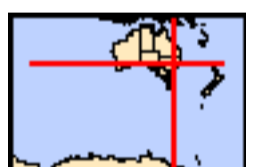
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# Summary

## Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance:</a>	4
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	3
<a href="#">Listed Threatened Species:</a>	27
<a href="#">Listed Migratory Species:</a>	11

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

<a href="#">Commonwealth Land:</a>	None
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	17
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None

## Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

<a href="#">State and Territory Reserves:</a>	None
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	26
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">Key Ecological Features (Marine)</a>	None



# Details

## Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)	[ Resource Information ]
Name	Proximity
<a href="#">Banrock station wetland complex</a>	800 - 900km upstream
<a href="#">Riverland</a>	800 - 900km upstream
<a href="#">The coorong, and lakes alexandrina and albert wetland</a>	900 - 1000km upstream
<a href="#">The macquarie marshes</a>	200 - 300km upstream

## Listed Threatened Ecological Communities

[ Resource Information ]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
<a href="#">Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia</a>	Endangered	Community may occur within area
<a href="#">Natural Temperate Grassland of the South Eastern Highlands</a>	Critically Endangered	Community may occur within area
<a href="#">White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland</a>	Critically Endangered	Community may occur within area

## Listed Threatened Species

[ Resource Information ]

Name	Status	Type of Presence
<b>Birds</b>		
<a href="#">Anthochaera phrygia</a> Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Grantiella picta</a> Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Polytelis swainsonii</a> Superb Parrot [738]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
<a href="#">Rostratula australis</a> Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
<b>Fish</b>		
<a href="#">Galaxias rostratus</a> Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Macquaria australasica</a> Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
<b>Frogs</b>		
<a href="#">Litoria booroolongensis</a> Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
<b>Mammals</b>		
<a href="#">Chalinolobus dwyeri</a> Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Dasyurus maculatus maculatus (SE mainland population)</a> Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
<a href="#">Nyctophilus corbeni</a> Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Petauroides volans</a> Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
<a href="#">Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</a> Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pteropus poliocephalus</a> Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<b>Plants</b>		
<a href="#">Dichanthium setosum</a> bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Euphrasia arguta</a> [4325]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Leucochrysum albicans var. tricolor</a> Hoary Sunray, Grassland Paper-daisy [56204]	Endangered	Species or species habitat known to occur within area
<a href="#">Ozothamnus tessellatus</a> [56203]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Prasophyllum petilum</a> Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
<a href="#">Prasophyllum sp. Wybong (C.Phelps ORG 5269)</a> a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Swainsona recta</a> Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat likely to occur within area
<b>Reptiles</b>		

Name	Status	Type of Presence
<a href="#">Aprasia parapulchella</a> Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area
<a href="#">Delma impar</a> Striped Legless Lizard [1649]	Vulnerable	Species or species habitat may occur within area

### Listed Migratory Species [\[ Resource Information \]](#)

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
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#### Migratory Marine Birds

<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
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#### Migratory Terrestrial Species

<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
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<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat likely to occur within area
--	--	--

<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat may occur within area
---	--	--

#### Migratory Wetlands Species

<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
--	--	--

<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
--	--	--

<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
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<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
--	--	--

<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
--	--	--

<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
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## Other Matters Protected by the EPBC Act

### Listed Marine Species [ [Resource Information](#) ]

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
<b>Birds</b>		
<a href="#">Actitis hypoleucos</a>		
Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Apus pacificus</a>		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea alba</a>		
Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
<a href="#">Ardea ibis</a>		
Cattle Egret [59542]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a>		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris ferruginea</a>		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Calidris melanotos</a>		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Chrysococcyx osculans</a>		
Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
<a href="#">Gallinago hardwickii</a>		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
<a href="#">Haliaeetus leucogaster</a>		
White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
<a href="#">Hirundapus caudacutus</a>		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Merops ornatus</a>		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla flava</a>		
Yellow Wagtail [644]		Species or species habitat may occur within area
<a href="#">Myiagra cyanoleuca</a>		
Satin Flycatcher [612]		Species or species habitat likely to occur within area
<a href="#">Numenius madagascariensis</a>		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Rhipidura rufifrons</a>		
Rufous Fantail [592]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

## Extra Information

### Invasive Species [ [Resource Information](#) ]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
<b>Birds</b>		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
<b>Mammals</b>		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
<b>Plants</b>		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

# Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

# Coordinates

-32.61394 149.60485

# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.





# Annex F



# BOREHOLE LOG REPORT

**HOLE NO:** BH1  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

<b>POSITION:</b>	<b>SURFACE ELEVATION:</b>	<b>INCLINATION:</b> 90°
<b>DRILLING METHOD:</b> Trailer Mounted Drill Rig	<b>CONTRACTOR:</b>	<b>DRILLER:</b> RB
<b>DATE LOGGED:</b> 10/07/2019	<b>DATE SAMPLED:</b> 10/07/2019	<b>LOGGED BY:</b> ML
		<b>CHECKED BY:</b> NWR

TESTING & SAMPLING				MATERIAL							
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
				ES 0.20-0.30	0.30m		SM	Silty SAND / Sandy SILT, fine grained, low plasticity, light brown		MD	ALLUVIUM
					1.00m		D	Weathered SANDSTONE, fine grained, light brown / orange, inferred very low strength			ROCK
	1.0 - 1.1	4						Becoming with fine to medium gravel			
	1.1 - 1.2	8									
	1.2 - 1.3	13									
	1.3 - 1.4	8									
	1.4 - 1.5	7									
	1.5 - 1.6	15									
	1.6 - 1.7	Refusal									
				D 2.00-2.10	2.00m		D	Extremely Weathered SANDSTONE, fine grained, grey / brown			
					2.40m			Becoming grey / red / brown			
					4.00m						
					4.00m		D to M	Becoming grey / mottled red			
					5.0m						
					6.00m						
					6.00m			Terminated at 6.00 m			
					7.0m						
					8.0m						
					9.0m						

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <b>WATER</b> Water table Water inflow	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH2  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

<b>POSITION:</b>	<b>SURFACE ELEVATION:</b>	<b>INCLINATION:</b> 90°
<b>DRILLING METHOD:</b> Trailer Mounted Drill Rig	<b>CONTRACTOR:</b>	<b>DRILLER:</b> RB
<b>DATE LOGGED:</b> 10/07/2019	<b>DATE SAMPLED:</b> 10/07/2019	<b>LOGGED BY:</b> ML
		<b>CHECKED BY:</b> NWR

TESTING & SAMPLING				MATERIAL						
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows								
	0.0 - 0.1	4						0.20m Silty SAND / Sandy SILT, fine grained, low plasticity, light brown	MD	ALLUVIUM
	0.1 - 0.2	8						Weathered SANDSTONE, fine grained, light brown / yellow, inferred very low strength		ROCK
	0.2 - 0.3	10						Becoming trace fine to medium gravel	D	
	0.3 - 0.4	Refusal						Becoming brown		
				ES 0.40-0.50				Becoming red / brown	D to M	
				D 3.00-3.20				Extremely Weathered Clayey SANDSTONE, fine grained, grey / mottled red, medium plasticity clay, inferred very low strength		
				D 4.00-4.20					M	
								Terminated at 6.00 m		

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <b>WATER</b> Water table Water inflow	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH4  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

<b>POSITION:</b>	<b>SURFACE ELEVATION:</b>	<b>INCLINATION:</b> 90°
<b>DRILLING METHOD:</b> Trailer Mounted Drill Rig	<b>CONTRACTOR:</b>	<b>DRILLER:</b> RB
<b>DATE LOGGED:</b> 10/07/2019	<b>DATE SAMPLED:</b> 10/07/2019	<b>LOGGED BY:</b> ML
		<b>CHECKED BY:</b> NWR

TESTING & SAMPLING				MATERIAL						
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows								
	0.0 - 0.1	6								
	0.1 - 0.2	7								
	0.2 - 0.3	10		ES 0.20-0.30			0.30m	Silty SAND / Sandy SILT, fine grained, low plasticity, light brown		MD ALLUVIUM
	0.3 - 0.4	9						Weathered SANDSTONE, fine grained, brown / yellow, inferred very low strength		ROCK
	0.4 - 0.5	10								
	0.5 - 0.6	Refusal		ES 0.70-0.80						
					1.0				D	
					2.0					
					3.0				D to M	
					3.50m			Becoming Extremely Weathered SANDSTONE, fine grained, brown / red / orange, inferred very low strength		
					4.0				M	
				D 4.00-4.30						
					4.50m			Becoming grey / red / yellow / brown		
					4.80m			Becoming with fine to medium gravel		
					5.0				M to W	
					6.00m			Terminated at 6.00 m		
					6.0					
					7.0					
					8.0					
					9.0					

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <b>WATER</b> Water table Water inflow	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH5  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

<b>POSITION:</b>	<b>SURFACE ELEVATION:</b>	<b>INCLINATION:</b> 90°
<b>DRILLING METHOD:</b> Trailer Mounted Drill Rig	<b>CONTRACTOR:</b>	<b>DRILLER:</b> RB
<b>DATE LOGGED:</b> 10/07/2019	<b>DATE SAMPLED:</b> 10/07/2019	<b>LOGGED BY:</b> ML
		<b>CHECKED BY:</b> NWR

TESTING & SAMPLING				MATERIAL							
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
	0.0 - 0.1	6									
	0.1 - 0.2	8									
	0.2 - 0.3	11									
	0.3 - 0.4	15									
	0.4 - 0.5	Refusal									
				ES 0.20-0.30	0.30m		SM	Silty SAND / Sandy SILT, fine grained, low plasticity, light brown		MD	ALLUVIUM
				ES 0.70-0.80				Weathered SANDSTONE, fine grained, brown / orange / yellow, inferred very low to low strength			ROCK
				ES 1.40-1.50							
					1.0						
					2.0				D		
					3.0						
					4.0						
					4.80m						
				D 5.00-5.50			CH	Silty Sandy Gravelly CLAY, high plasticity, brown / red, fine grained sand, medium to coarse gravel		>PL St to VSt	RESIDUAL SOIL
					6.00m			Terminated at 6.00 m			
					6.0						
					7.0						
					8.0						
					9.0						

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System	<b>SAMPLES &amp; FIELD TESTS</b>	<b>MOISTURE</b>	<b>CONSISTENCY/RELATIVE DENSITY</b>
	<b>WATER</b> Water table Water inflow	U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense

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# BOREHOLE LOG REPORT

**HOLE NO:** BH6  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: RB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: ML
		CHECKED BY: NWR

TESTING & SAMPLING			MATERIAL								
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
	0.0 - 0.1	5									
	0.1 - 0.2	10									
	0.2 - 0.3	10									
	0.3 - 0.4	18									
	0.4 - 0.5	Refusal									
				ES 0.20-0.30	0.30m		SM	Silty SAND / Sandy SILT, fine grained, low plasticity, light brown		MD	ALLUVIUM
				ES 0.70-0.80	1.0m			Weathered SANDSTONE, fine grained, orange / red, inferred very low strength			ROCK
				D 1.00-1.10							
					1.50m			Becoming with fine to medium gravel		D	
					2.0m						
				D 2.00-2.20				Becoming without gravel			
					3.0m						
					3.50m			Becoming grey / red			
					4.0m						
					5.0m			Becoming yellow / brown		M	
					6.0m			Terminated at 6.00 m			
					7.0m						
					8.0m						
					9.0m						

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p style="text-align: center;"><b>WATER</b></p>  Water table   Water inflow         </div>	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

HOLE NO: BH7  
FILE / JOB NO: P1834  
SHEET: 1 OF 1

CLIENT: Bunnings Group Limited  
PROJECT: Preliminary Site Investigation  
LOCATION: 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: RB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: ML
		CHECKED BY: NWR

TESTING & SAMPLING			MATERIAL								
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
	0.0 - 0.1	4									
	0.1 - 0.2	6									
	0.2 - 0.3	10									
	0.3 - 0.4	15									
	0.4 - 0.5	Refusal									
				ES + DUP1 0.20-0.30	0.30m		SM	Silty SAND / Sandy SILT, fine grained, low plasticity, light brown		MD	ALLUVIUM
				ES 0.70-0.80			D	Weathered SANDSTONE, fine grained, brown / orange, inferred very low to low strength			ROCK
				D 1.00-1.10	1.20m			Becoming with fine to medium gravel			
				ES 1.50-1.60			CH	Silty Sandy CLAY, high plasticity, grey / mottled red, medium to coarse grained sand		>PL	RESIDUAL SOIL
					4.30m						
					6.00m			Terminated at 6.00 m			

Additional Comments	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System	<b>SAMPLES &amp; FIELD TESTS</b>	<b>MOISTURE</b>	<b>CONSISTENCY/RELATIVE DENSITY</b>
	<b>WATER</b> Water table Water inflow	U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense



# BOREHOLE LOG REPORT

**HOLE NO:** BH8  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: RB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: ML
		CHECKED BY: NWR

TESTING & SAMPLING				MATERIAL							
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
	0.0 - 0.1	7									
	0.1 - 0.2	10									
	0.2 - 0.3	10									
	0.3 - 0.4	13									
	0.4 - 0.5	Refusal									
				ES 0.20-0.30			SM	0.30m Silty SAND / Sandy SILT, fine grained, low plasticity, light brown		MD	ALLUVIUM
					1.0			Weathered SANDSTONE, fine grained, light brown / orange, with fine to medium gravel, inferred very low strength			ROCK
					2.0			Becoming brown	D		
					3.5			Becoming orange / brown			
					4.5			Becoming brown / pink / white	D to M		
					6.0			Terminated at 6.00 m			

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <div style="text-align: center;">             Water table               Water inflow         </div>	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

HOLE NO: **BH10**  
FILE / JOB NO: P1834  
SHEET: 1 OF 1

CLIENT: Bunnings Group Limited  
PROJECT: Preliminary Site Investigation  
LOCATION: 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: LB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: NWR
		CHECKED BY: ML

TESTING & SAMPLING			MATERIAL								
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
	0.0 - 0.1	6									SLOPE WASH / RESIDUAL SOIL
	0.1 - 0.2	5									
	0.2 - 0.3	6									
	0.3 - 0.4	8									
	0.4 - 0.5	12									
	0.5 - 0.6	Refusal									
				ES + DUP2 0.30-0.40	0.40m		SC	Silty Clayey SAND / Sandy CLAY, fine to medium grained sand, low to medium plasticity clay, pale brown	M	MD	ROCK
				ES 0.60-0.70				Weathered SANDSTONE, fine to medium grained sand, pale brown / orange, inferred very low strength			
				D 0.80-1.20	1.0				D		
				D 2.00-2.10	2.0						
				D 3.00-3.20	3.0			Extremely Weathered Clayey SANDSTONE, fine to medium grained, pale grey / orange, medium to high plasticity clay, inferred very low strength			
					2.50m						
					4.30m			Extremely Weathered SILTSTONE / CLAYSTONE, white / red, inferred extremely low strength	M		
					6.00m			Terminated at 6.00 m			
					7.0						
					8.0						
					9.0						

Additional Comments	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
	<b>WATER</b> Water table Water inflow			

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# BOREHOLE LOG REPORT

**HOLE NO:** BH15  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: LB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: NWR
		CHECKED BY: ML

TESTING & SAMPLING				MATERIAL							
Water	Penetrometer Testing		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
					0.30m		SM	Silty SAND / Sandy SILT, fine grained sand, low plasticity silt, brown / light brown	D	MD	ALLUVIUM
				ES 0.30-0.40	0.45m		ML	Clayey SILT (Silty LOAM), low plasticity, pale brown, with fine grained sand			SLOPE WASH RESIDUAL SOIL
				ES 0.70-0.80			CI-CH	Silty CLAY, medium to high plasticity, dark orange, with fine grained sand, with weathered inclusions (becoming extremely weathered sandstone)	-PL	VSt to H	
				B 0.80-1.20	1.20m		CI-CH	Becoming with fine to medium gravel			
					1.30m			Practical Refusal at 1.30 m			
					2.0						
					3.0						
					4.0						
					5.0						
					6.0						
					7.0						
					8.0						
					9.0						

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <div style="text-align: center;">  Water table   Water inflow         </div>	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH16  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: RB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: ML
		CHECKED BY: NWR

TESTING & SAMPLING				MATERIAL							
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
	0.0 - 0.1	4									
	0.1 - 0.2	10									
	0.2 - 0.3	12									
	0.3 - 0.4	Terminated									
				ES 0.20-0.30	0.40m		SM	Silty SAND / Sandy SILT, fine grained sand, low plasticity silt, brown / light brown		MD	ALLUVIUM
				ES 0.70-0.80	1.0		D	Weathered SANDSTONE, fine grained, brown / orange, with fine to medium gravel, inferred very low strength		D	ROCK
				D 1.50-1.70	2.0		D				
					2.50m			Becoming brown / red			
					3.20m			Extremely Weathered SANDSTONE, fine grained, red / brown / grey, low plasticity, inferred very low strength		M	
					4.50m			Silty CLAY, high plasticity, grey / mottled red			RESIDUAL SOIL
					5.0		CH				
					6.0		CH				
					7.0		CH			>PL	F to St
				D 7.00-7.50	7.0		CH				
					8.00m			Becoming with fine to medium gravel			
					9.00m			Terminated at 9.00 m			

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <div style="text-align: center;">  Water table   Water inflow         </div>	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH17  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

<b>POSITION:</b>	<b>SURFACE ELEVATION:</b>	<b>INCLINATION:</b> 90°
<b>DRILLING METHOD:</b> Trailer Mounted Drill Rig	<b>CONTRACTOR:</b>	<b>DRILLER:</b> RB
<b>DATE LOGGED:</b> 11/07/2019	<b>DATE SAMPLED:</b> 11/07/2019	<b>LOGGED BY:</b> ML
		<b>CHECKED BY:</b> NWR

TESTING & SAMPLING				MATERIAL							
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition/Consistency/Relative Density	STRUCTURE & Other Observations	
	Depth (m)	Blows									
	0.0 - 0.1	5									
	0.1 - 0.2	8									
	0.2 - 0.3	10									
	0.3 - 0.4	16									
	0.4 - 0.5	Refusal									
					0.30m		SM	Silty SAND / Sandy SILT, fine grained sand, low plasticity silt, brown / light brown		MD	ALLUVIUM
								Weathered SANDSTONE, fine grained, light brown / brown / orange, with fine to medium gravel, inferred very low strength			ROCK
					1.0						
					2.0						
					3.0				D		
					4.0						
					4.00m			Extremely Weathered SANDSTONE, fine grained, brown / orange, inferred very low strength			
					4.30m			Becoming with fine to medium gravel			
					5.0						
					5.70m						
					6.0		CH	Silty CLAY, high plasticity, grey			RESIDUAL SOIL
					6.50m			Becoming red / brown / grey			
					7.0						
					8.0		CH		>PL	St	
					9.0			Terminated at 9.00 m			

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <b>WATER</b> Water table Water inflow	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH20  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: LB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: NWR
		CHECKED BY: ML

TESTING & SAMPLING				MATERIAL							
Water	Penetrometer Testing		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
				ES 0.20-0.30	0.20m		ML	TOPSOIL: Sandy SILT, low plasticity, pale grey, fine grained sand	D	MD	TOPSOIL
				ES 0.70-0.80	0.80m		CI	Sandy CLAY, medium plasticity, pale brown / orange / mottled white			RESIDUAL SOIL
					1.0m		CI	Becoming with weathered inclusions	>PL	St	
					1.50m			Terminated at 1.50 m			
					2.0m						
					3.0m						
					4.0m						
					5.0m						
					6.0m						
					7.0m						
					8.0m						
					9.0m						

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <div style="text-align: center;">  Water table   Water inflow         </div>	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH22  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

<b>POSITION:</b>	<b>SURFACE ELEVATION:</b>	<b>INCLINATION:</b> 90°
<b>DRILLING METHOD:</b> Trailer Mounted Drill Rig	<b>CONTRACTOR:</b>	<b>DRILLER:</b> LB
<b>DATE LOGGED:</b> 10/07/2019	<b>DATE SAMPLED:</b> 10/07/2019	<b>LOGGED BY:</b> NWR
		<b>CHECKED BY:</b> ML

TESTING & SAMPLING			MATERIAL								
Water	DCP AS 1289.6.3.2-1997		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
	0.0 - 0.1	10		D	0.00 - 0.10		ML	0.30m TOPSOIL: Sandy SILT, low plasticity, pale grey, fine grained sand	D	MD	TOPSOIL
	0.1 - 0.2	14		ES	0.10 - 0.30						
	0.2 - 0.3	11		B	0.20 - 0.30						
	0.3 - 0.4	10		ES	0.40 - 0.70						
	0.4 - 0.5	Terminated		ES	0.70 - 0.80						
					1.0			0.80m Weathered SANDSTONE, fine to medium graind, pale brown, inferred very low to low strength			ROCK
					1.20			1.20m Practical Refusal at 1.20 m			
					2.0						
					3.0						
					4.0						
					5.0						
					6.0						
					7.0						
					8.0						
					9.0						

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <b>WATER</b> Water table Water inflow	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH23  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: RB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: ML
		CHECKED BY: NWR

TESTING & SAMPLING				MATERIAL							
Water	Penetrometer Testing		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
				ES 0.20-0.30	0.40m		SM	Silty SAND / Sandy SILT, fine grained sand, low plasticity silt, brown / light brown		MD	ALLUVIUM
				D 0.50-0.60 ES+D 0.70-0.80	1.0m			Weathered SANDSTONE, fine grained, brown / light brown / orange, with fine to medium gravel, inferred very low to low strength	D		ROCK
					1.80m		CH	Silty Sandy CLAY, high plasticity, brown / grey, fine grained sand, with fine to coarse gravel	>PL	F to St	RESIDUAL SOIL
					2.00m			Terminated at 2.00 m			

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <b>WATER</b> Water table Water inflow	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH24  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Trailer Mounted Drill Rig	CONTRACTOR:	DRILLER: RB
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: ML
		CHECKED BY: NWR

TESTING & SAMPLING				MATERIAL							
Water	Penetrometer Testing		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
				ES 0.20-0.30	0.40m		SM	Silty SAND / Sandy SILT, fine grained sand, low plasticity silt, brown / light brown		MD	ALLUVIUM
				ES 0.70-0.80	1.00m		D	Weathered SANDSTONE, fine grained, light brown / orange, inferred very low strength			ROCK
					1.30m			Becoming with medium gravel			
					1.70m			Becoming red / brown			
					2.00m			Becoming grey / red / brown			
					2.00m			Terminated at 2.00 m			
					3.0						
					4.0						
					5.0						
					6.0						
					7.0						
					8.0						
					9.0						

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  <div style="text-align: center;"> <b>WATER</b>   Water table   Water inflow         </div>	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# BOREHOLE LOG REPORT

**HOLE NO:** BH27  
**FILE / JOB NO:** P1834  
**SHEET:** 1 OF 1

**CLIENT:** Bunnings Group Limited  
**PROJECT:** Preliminary Site Investigation  
**LOCATION:** 132 Lions Drive, Mudgee

<b>POSITION:</b>	<b>SURFACE ELEVATION:</b>	<b>INCLINATION:</b> 90°
<b>DRILLING METHOD:</b> Trailer Mounted Drill Rig	<b>CONTRACTOR:</b>	<b>DRILLER:</b> LB
<b>DATE LOGGED:</b> 10/07/2019	<b>DATE SAMPLED:</b> 10/07/2019	<b>LOGGED BY:</b> NWR
		<b>CHECKED BY:</b> ML

TESTING & SAMPLING				MATERIAL							
Water	Penetrometer Testing		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
				ES 0.30-0.40	0.10m	ML	ML	TOPSOIL: Sandy SILT, low plasticity, pale grey, fine grained sand	D	MD to D	TOPSOIL SLOPE WASH
				ES 0.70-0.80	0.40m	ML	ML	Sandy SILT, low plasticity, pale grey, fine grained sand Weathered SANDSTONE, fine to medium grained, pale brown, inferred low strength			ROCK
					1.50m			Becoming with fine to medium sub-rounded to rounded gravel	D to M		
				D 2.50-2.80	2.50m		CI-CH	Sandy Clayey GRAVEL / Gravelly CLAY, medium to high plasticity, fine to medium sub-rounded gravel, dark orange / white, fine to medium grained sand	>PL	St	RESIDUAL SOIL
					3.20m			Extremely Weathered SILTSTONE / CLAYSTONE / SANDSTONE, fine grained, pale orange / white, inferred very low strength (clay like properties)			ROCK
					6.00m			Terminated at 6.00 m			

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System	<b>SAMPLES &amp; FIELD TESTS</b>	<b>MOISTURE</b>	<b>CONSISTENCY/RELATIVE DENSITY</b>
	<b>WATER</b>  Water table  Water inflow	U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense

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# BOREHOLE LOG REPORT

**HOLE NO: BH31**  
 FILE / JOB NO: P1834  
 SHEET: 1 OF 1

CLIENT: Bunnings Group Limited  
 PROJECT: Preliminary Site Investigation  
 LOCATION: 132 Lions Drive, Mudgee

POSITION:	SURFACE ELEVATION:	INCLINATION: 90°
DRILLING METHOD: Hand Auger	CONTRACTOR:	DRILLER: JD
DATE LOGGED: 10/07/2019	DATE SAMPLED: 10/07/2019	LOGGED BY: JD
		CHECKED BY: MA


TESTING & SAMPLING				MATERIAL							
Water	Penetrometer Testing		Field Tests	Samples	Depth (m)	Graphic Log	Classification Symbol	MATERIAL DESCRIPTION Soil Type, Plasticity or Particle Characteristic, Colour, Secondary and Minor Components	Moisture Condition	Consistency/Relative Density	STRUCTURE & Other Observations
	Depth (m)	Blows									
				ES 0.20-0.30	0.50m		ML	Grass overlying Sandy SILT, dark brown, fine to medium sand	M	S	
					1.0			Terminated at 0.50 m			
					2.0						
					3.0						
					4.0						
					5.0						
					6.0						
					7.0						
					8.0						
					9.0						

<b>Additional Comments</b>	<b>CLASSIFICATION SYMBOLS &amp; SOIL DESCRIPTION</b> Based on Unified Classification System  Water table Water inflow	<b>SAMPLES &amp; FIELD TESTS</b> U - Undisturbed Sample D - Disturbed Sample ES - Environmental Sample B - Bulk Disturbed Sample  MC - Moisture Content PP - Pocket Penetrometer SPT - Standard Penetration Test VS - Vane Shear	<b>MOISTURE</b> D - Dry M - Moist W - Wet <PL - Moist, below PL ~PL - Moist, approx. PL >PL - Moist, above PL ~LL - Wet, approx. LL >LL - Wet, above LL  PL - Plastic Limit LL - Liquid Limit	<b>CONSISTENCY/RELATIVE DENSITY</b> VS - Very Soft S - Soft F - Firm St - Stiff VSt - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense
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# Annex G

 Geotechnical & Environmental Services	Metals								TRH NEPM (2013)							BTEX			
	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	TRH C6-C10 Fraction	TRH C6-C10 minus BTEX (F1)	TRH >C10-C16 Fraction	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene Total
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of Reporting	1	0.3	0.5	0.5	1	0.5	2	0.05	25	25	25	25	90	120	0.1	0.1	0.1	0.1	0.3
EILs (NEPM 2013)	160				1800										370				
ESLs - Fine (NEPM 2013)										215		170	2500	6600		95	135	185	180
ESLs - Coarse (NEPM 2013)										215		170	1700	3300		75	135	165	95
HIL D (NEPM 2013)	3000	900	3600	240000	1500	6000	400000	730											
HSL D - Soil Vapour Sand 0 - <1m (NEPM 2013)										260		NL			NL	3	NL	NL	230
HSL D - Soil Vapour Sand 1 - <2m (NEPM 2013)										370		NL			NL	3	NL	NL	NL
HSL D - Soil Vapour Sand 2 - <4m (NEPM 2013)										630		NL			NL	3	NL	NL	NL
HSL D - Soil Vapour Sand 4m+ (NEPM 2013)										NL		NL			NL	3	NL	NL	NL
HSL D - Soil Vapour Silt 0 - <1m (NEPM 2013)										250		NL			NL	4	NL	NL	NL
HSL D - Soil Vapour Silt 1 - <2m (NEPM 2013)										360		NL			NL	4	NL	NL	NL
HSL D - Soil Vapour Silt 2 - <4m (NEPM 2013)										590		NL			NL	6	NL	NL	NL
HSL D - Soil Vapour Silt 4m+ (NEPM 2013)										NL		NL			NL	10	NL	NL	NL
HSL D - Soil Vapour Clay 0 - <1m (NEPM 2013)										310		NL			NL	4	NL	NL	NL
HSL D - Soil Vapour Clay 1 - <2m (NEPM 2013)										480		NL			NL	6	NL	NL	NL
HSL D - Soil Vapour Clay 2 - <4m (NEPM 2013)										NL		NL			NL	9	NL	NL	NL
HSL D - Soil Vapour Clay 4m+ (NEPM 2013)										NL		NL			NL	20	NL	NL	NL
Management Limits - Fine Soil (NEPM 2013)									800		1,000		5,000	10,000					
Management Limits - Coarse Soil (NEPM 2013)									700		1,000		3,500	10,000					
HSL D - Direct Contact (CRC Care 2011)									26,000		20,000		27,000	38,000	11,000	430	99,000	27,000	81,000

Sample ID	Sampled Date	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	TRH C6-C10 Fraction	TRH C6-C10 minus BTEX (F1)	TRH >C10-C16 Fraction	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene Total
BH1 0.2-0.3	10/7/2019	3	<0.3	4.6	3.2	4	2.6	9.9	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH2 0.4-0.5	10/7/2019	17	<0.3	16	17	16	11	26	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH4 0.2-0.3	10/7/2019	8	<0.3	7.1	4.8	7	2.6	12	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH4 0.7-0.8	10/7/2019	19	<0.3	17	23	15	19	31	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH5 0.2-0.3	10/7/2019	4	<0.3	5.0	3.1	5	2.3	11	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH5 0.7-0.8	10/7/2019	13	<0.3	16	18	12	9.3	27	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH6 0.2-0.3	10/7/2019	6	<0.3	7.3	5.9	7	4.9	21	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH6 0.7-0.8	10/7/2019	15	<0.3	15	17	12	9.7	28	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH7 0.2-0.3	10/7/2019	7	<0.3	6.8	6.1	8	3.2	16	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH7 0.7-0.8	10/7/2019	13	<0.3	16	15	12	11	25	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH8 0.2-0.3	10/7/2019	5	<0.3	5.8	2.5	5	2.7	11	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH10 0.3-0.4	10/7/2019	2	<0.3	4.5	2.8	5	2.3	15	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH10 0.6-0.7	10/7/2019	13	<0.3	16	14	10	11	23	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH15 0.3-0.4	10/7/2019	3	<0.3	4.5	2.7	4	1.8	12	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH15 0.7-0.8	10/7/2019	14	<0.3	15	17	12	9.1	27	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH17 0.2-0.3	10/7/2019	9	<0.3	11	8.8	11	8.6	22	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH20 0.2-0.3	10/7/2019	4	<0.3	5.6	3.0	7	2.5	13	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH20 0.7-0.8	10/7/2019	16	<0.3	14	10	9	10	25	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH24 0.2-0.3	10/7/2019	3	<0.3	6.5	4.5	7	3.3	17	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH24 0.7-0.8	10/7/2019	8	<0.3	13	14	9	9.3	21	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH27 0.3-0.4	10/7/2019	2	<0.3	4.5	3.6	5	2.6	9.7	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
BH27 0.7-0.8	10/7/2019	15	<0.3	11	11	8	8.6	23	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3

Statistical Summary	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	TRH C6-C10 Fraction	TRH C6-C10 minus BTEX (F1)	TRH >C10-C16 Fraction	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	Naphthalene	Benzene	Toluene	Ethylbenzene	Xylene Total
Number of Results	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Number of Detects	22	0	22	22	22	22	22	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Detect	2	0	4.5	2.5	4	1.8	9.7	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Detect	19	0	17	23	16	19	31	0	0	0	0	0	0	0	0	0	0	0	0
Average Concentration	9.045455	-	10.1	9.409091	8.636364	6.7	19.34545	-	-	-	-	-	-	-	-	-	-	-	-
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0


	PAH						OCP													OPP	PCB	
	Naphthalene	Benzo(a)pyrene	Carcinogenic PAHs, BaP TEQ <LOR=0	Carcinogenic PAHs, BaP TEQ <LOR=LOR	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	Total PAH	Aldrin	o,p'-DDE	o,p'-DDD	o,p'-DDT	Gamma Chlordane	Alpha Chlordane	Dieldrin	Alpha Endosulfan	Beta Endosulfan	Endrin	Heptachlor	Hexachlorobenzene (HCB)	Methoxychlor	Chlorpyrifos (Chlorpyrifos Ethyl)	Total PCBs (Arochlors)	
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of Reporting	0.1	0.1	0.2	0.3	0.2	0.8	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	1	
EILs (NEPM 2013)	370								640													
ESLs - Coarse/Fine (NEPM 2013)		0.7																				
HIL D (NEPM 2013)			40	40	40	4000	45	3600	3600	3600	530	530	45	2000	2000	100	50	80	2500	2000	7	
HSL B - Direct Contact (CRC Care 2011)	11,000																					

Sample ID	Sampled Date	PAH						OCP													OPP	PCB
BH1 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH2 0.4-0.5	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH4 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH4 0.7-0.8	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH5 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH5 0.7-0.8	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH6 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH6 0.7-0.8	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH7 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH7 0.7-0.8	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH8 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH10 0.3-0.4	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH10 0.6-0.7	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH15 0.3-0.4	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH15 0.7-0.8	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH17 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH20 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH20 0.7-0.8	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH24 0.2-0.3	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH24 0.7-0.8	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH27 0.3-0.4	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
BH27 0.7-0.8	10/7/2019	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Statistical Summary	PAH						OCP													OPP	PCB	
Number of Results	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Detect	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Detect	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average Concentration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note:

- <sup>(1)</sup> The NEPM presents a cumulative HIL for DDD, DDE and DDT (240 mg/kg). Concentrations for each of these compounds are presented separately above and conservatively assessed against the HIL.
- <sup>(2)</sup> The NEPM presents a cumulative HIL for Aldrin and Dieldrin (6 mg/kg). Concentrations for each of these compounds are presented separately above and conservatively assessed against the HIL.
- <sup>(3)</sup> The NEPM presents one HIL for Endosulfan (270 mg/kg). Concentrations for Alpha Endosulfan and Beta Endosulfan are presented separately above and conservatively assessed against the HIL.


	LOR	Unit	Primary Sample	QA Sample	RPD	Primary Sample	QA Sample	RPD
			BH7-0.2-0.3	DUP1		BH10 0.3-0.4	DUP2	
<b>TRH</b>								
TRH C6-C10	20	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0	<u>12.5</u>	<u>12.5</u>	0.0
TRH C6-C10 minus BTEX (F1)	20	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0	<u>12.5</u>	<u>12.5</u>	0.0
TRH >C10-C16	50	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0	<u>12.5</u>	<u>12.5</u>	0.0
TRH >C10-C16 - Naphthalene (F2)	50	mg/kg	<u>12.5</u>	<u>12.5</u>	0.0	<u>12.5</u>	<u>12.5</u>	0.0
TRH >C16-C34 (F3)	100	mg/kg	<u>45</u>	<u>45</u>	0.0	<u>45</u>	<u>45</u>	0.0
TRH >C34-C40 (F4)	100	mg/kg	<u>60</u>	<u>60</u>	0.0	<u>60</u>	<u>60</u>	0.0
Naphthalene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
<b>BTEX</b>								
Benzene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Ethylbenzene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
m&p-Xylenes	0.2	mg/kg	<u>0.1</u>	<u>0.1</u>	0.0	<u>0.1</u>	<u>0.1</u>	0.0
o-Xylene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Toluene	0.1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Xylenes - Total	0.3	mg/kg	<u>0.15</u>	<u>0.15</u>	0.0	<u>0.15</u>	<u>0.15</u>	0.0
<b>Metals</b>								
Arsenic	2	mg/kg	<b>7</b>	<b>7</b>	0.0	<b>2</b>	<b>2</b>	0.0
Cadmium	0.3	mg/kg	<u>0.15</u>	<u>0.15</u>	0.0	<u>0.15</u>	<u>0.15</u>	0.0
Chromium	0.3	mg/kg	<b>6.8</b>	<b>7.1</b>	<b>4.3</b>	<b>4.5</b>	<b>6.4</b>	<b>34.9</b>
Copper	0.5	mg/kg	<b>6.1</b>	<b>6.2</b>	<b>1.6</b>	<b>2.8</b>	<b>4.5</b>	<b>46.6</b>
Lead	1	mg/kg	<b>8</b>	<b>7</b>	<b>13.3</b>	<b>5</b>	<b>6</b>	<b>18.2</b>
Mercury	0.05	mg/kg	<u>0.025</u>	<u>0.025</u>	0.0	<u>0.025</u>	<u>0.025</u>	0.0
Nickel	0.5	mg/kg	<b>3.2</b>	<b>3.5</b>	<b>9.0</b>	<b>2.3</b>	<b>3.5</b>	<b>41.4</b>
Zinc	2	mg/kg	<b>16</b>	<b>16</b>	0.0	<b>15</b>	<b>14</b>	<b>6.9</b>
<b>PAH</b>								
Acenaphthene	1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Acenaphthylene	1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Anthracene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Benz(a)anthracene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Benzo(a)pyrene	5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Benzo(a)pyrene TEQ (lower bound)	0.5	mg/kg	<u>0.1</u>	<u>0.1</u>	0.0	<u>0.1</u>	<u>0.1</u>	0.0
Benzo(a)pyrene TEQ (medium bound)	0.5	mg/kg	<u>0.15</u>	<u>0.15</u>	0.0	<u>0.15</u>	<u>0.15</u>	0.0
Benzo(a)pyrene TEQ (upper bound)	0.2	mg/kg	<u>0.1</u>	<u>0.1</u>	0.0	<u>0.1</u>	<u>0.1</u>	0.0
Benzo(b&j)fluoranthene	1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Benzo(g,h,i)perylene	0.4	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Benzo(k)fluoranthene	5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Chrysene	1	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Dibenz(a,h)anthracene	5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Fluoranthene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Fluorene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Naphthalene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Phenanthrene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Pyrene	0.5	mg/kg	<u>0.05</u>	<u>0.05</u>	0.0	<u>0.05</u>	<u>0.05</u>	0.0
Total PAH	0.5	mg/kg	<u>0.4</u>	<u>0.4</u>	0.0	<u>0.4</u>	<u>0.4</u>	0.0

**Notes**

RPD = Relative Percentage Difference.

RPD assessment criteria were adopted in general accordance with NEPM Schedule B3 Section 3.5 (NEPC 2013). RPDs where both primary and duplicate results were < 2.5 times the LOR were not considered. RPDs where primary and/or duplicate results were >2.5 times the LOR were assessed based on a threshold of +/- 30%. Exceedence of this threshold triggered consideration of associated data quality.

**Table 4:** Trip Spike / Trip Blank

 VALLEY/CIVILAB Geotechnical & Environmental Services	LOR	Trip Spike Soil	Trip Blank Soil	Rinsate RIN
Unit of Measure	mg/kg	% Recovery	mg/kg	µg/L
<b>BTEX</b>				
Benzene	0.1	[97.78%]	<0.1	-
Toluene	0.1	[94.40%]	<0.1	-
Ethylbenzene	0.1	[96.66%]	<0.1	-
m&p-Xylenes	0.2	[96.20%]	<0.2	-
o-Xylene	0.1	[97.39%]	<0.1	-
Xylenes - Total	0.3	N.A.	<0.3	-
<b>Metals</b>				
Unit of Measure	µg/L	-	-	µg/L
Arsenic	1	-	-	<1
Cadmium	0.1	-	-	<0.1
Chromium	1	-	-	<1
Copper	1	-	-	<1
Lead	1	-	-	<1
Mercury - mg/L	0.0001	-	-	<0.0001
Nickel	1	-	-	<1
Zinc	5	-	-	<5



# Annex H



CLIENT DETAILS

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Project **P1834**  
 Order Number **VC: 04343**  
 Samples **27**

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SGS Reference **SE195298 R0**  
 Date Received **12 Jul 2019**  
 Date Reported **22 Jul 2019**

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES



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Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Sample Number			SE195298.001	SE195298.002	SE195298.003	SE195298.004
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH1 0.2-0.3	BH2 0.4-0.5	BH4 0.2-0.3	BH4 0.7-0.8

**VOC's in Soil Method: AN433 Tested: 16/7/2019**

Monocyclic Aromatic Hydrocarbons

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Polycyclic VOCs

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Surrogates

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Dibromofluoromethane (Surrogate)	%	-	94	86	90	83
d4-1,2-dichloroethane (Surrogate)	%	-	100	92	92	87
d8-toluene (Surrogate)	%	-	98	89	90	86
Bromofluorobenzene (Surrogate)	%	-	96	88	87	83

Totals

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6

**Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20

Surrogates

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Dibromofluoromethane (Surrogate)	%	-	94	86	90	83
d4-1,2-dichloroethane (Surrogate)	%	-	100	92	92	87
d8-toluene (Surrogate)	%	-	98	89	90	86
Bromofluorobenzene (Surrogate)	%	-	96	88	87	83

VPH F Bands

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number	SE195298.001	SE195298.002	SE195298.003	SE195298.004
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH1 0.2-0.3	BH2 0.4-0.5	BH4 0.2-0.3	BH4 0.7-0.8

**TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210

TRH F Bands

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	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	<0.1	<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)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8

Surrogates

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
d5-nitrobenzene (Surrogate)	%	-	<b>78</b>	<b>76</b>	<b>86</b>	<b>82</b>
2-fluorobiphenyl (Surrogate)	%	-	<b>86</b>	<b>80</b>	<b>88</b>	<b>84</b>
d14-p-terphenyl (Surrogate)	%	-	<b>94</b>	<b>86</b>	<b>96</b>	<b>94</b>

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	-
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	-
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	-
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	-
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	-
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	-
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	-
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	-
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	-
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	-
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	-
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	-
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	-
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	-
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	-
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	-

Parameter	Units	LOR	SE195298.001 Sample Number Sample Matrix Sample Date Sample Name	SE195298.002 Soil 10 Jul 2019 BH2 0.4-0.5	SE195298.003 Soil 10 Jul 2019 BH4 0.2-0.3	SE195298.004 Soil 10 Jul 2019 BH4 0.7-0.8
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**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019 (continued)**

o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	-
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	-
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	-
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	-
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	-
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	-
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	-
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	-
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	-
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	-
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	-
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	-

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	<b>94</b>	<b>94</b>	<b>97</b>	-
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**OP Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	-
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	-
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	-
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	-
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	-
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	-
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	-
Methodathion	mg/kg	0.5	<0.5	<0.5	<0.5	-
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	-
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	-
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	-

Surrogates

2-fluorobiphenyl (Surrogate)	%	-	<b>86</b>	<b>80</b>	<b>88</b>	-
d14-p-terphenyl (Surrogate)	%	-	<b>94</b>	<b>86</b>	<b>96</b>	-

**PCBs in Soil Method: AN420 Tested: 16/7/2019**

Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	-
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	-
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	-
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	-
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	-
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	-
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	-
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	-
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	-
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	-

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	<b>94</b>	<b>94</b>	<b>97</b>	-
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Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Sample Number			SE195298.001	SE195298.002	SE195298.003	SE195298.004
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH1 0.2-0.3	BH2 0.4-0.5	BH4 0.2-0.3	BH4 0.7-0.8

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Arsenic, As	mg/kg	1	3	17	8	19
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	4.6	16	7.1	17
Copper, Cu	mg/kg	0.5	3.2	17	4.8	23
Nickel, Ni	mg/kg	0.5	2.6	11	2.6	19
Lead, Pb	mg/kg	1	4	16	7	15
Zinc, Zn	mg/kg	2	9.9	26	12	31

**Mercury in Soil Method: AN312 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05

**Moisture Content Method: AN002 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
% Moisture	%w/w	0.5	5.6	7.5	5.8	11

**Trace Metals (Total) in Water by ICPMS Method: AN022/AN318 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Total Arsenic	µg/L	1	-	-	-	-
Total Cadmium	µg/L	0.1	-	-	-	-
Total Chromium	µg/L	1	-	-	-	-
Total Copper	µg/L	1	-	-	-	-
Total Lead	µg/L	1	-	-	-	-
Total Nickel	µg/L	1	-	-	-	-
Total Zinc	µg/L	5	-	-	-	-

**Mercury (total) in Water Method: AN311(Perth) /AN312 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.001	SE195298.002	SE195298.003	SE195298.004
Total Mercury	mg/L	0.0001	-	-	-	-

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Sample Number			SE195298.005	SE195298.006	SE195298.007	SE195298.008
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH5 0.2-0.3	BH5 0.7-0.8	BH6 0.2-0.3	BH6 0.7-0.8

**VOC's in Soil Method: AN433 Tested: 16/7/2019**

Monocyclic Aromatic Hydrocarbons

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Polycyclic VOCs

Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	<b>84</b>	<b>85</b>	<b>87</b>	<b>89</b>
d4-1,2-dichloroethane (Surrogate)	%	-	<b>92</b>	<b>88</b>	<b>93</b>	<b>93</b>
d8-toluene (Surrogate)	%	-	<b>89</b>	<b>87</b>	<b>91</b>	<b>91</b>
Bromofluorobenzene (Surrogate)	%	-	<b>85</b>	<b>83</b>	<b>87</b>	<b>88</b>

Totals

Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6

**Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 16/7/2019**

TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20

Surrogates

Dibromofluoromethane (Surrogate)	%	-	<b>84</b>	<b>85</b>	<b>87</b>	<b>89</b>
d4-1,2-dichloroethane (Surrogate)	%	-	<b>92</b>	<b>88</b>	<b>93</b>	<b>93</b>
d8-toluene (Surrogate)	%	-	<b>89</b>	<b>87</b>	<b>91</b>	<b>91</b>
Bromofluorobenzene (Surrogate)	%	-	<b>85</b>	<b>83</b>	<b>87</b>	<b>88</b>

VPH F Bands

Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number	SE195298.005	SE195298.006	SE195298.007	SE195298.008
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH5 0.2-0.3	BH5 0.7-0.8	BH6 0.2-0.3	BH6 0.7-0.8

**TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210

TRH F Bands

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	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	<0.1	<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)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8

Surrogates

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
d5-nitrobenzene (Surrogate)	%	-	94	86	86	84
2-fluorobiphenyl (Surrogate)	%	-	86	86	84	86
d14-p-terphenyl (Surrogate)	%	-	96	92	90	94

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	-	<0.1	-
Alpha BHC	mg/kg	0.1	<0.1	-	<0.1	-
Lindane	mg/kg	0.1	<0.1	-	<0.1	-
Heptachlor	mg/kg	0.1	<0.1	-	<0.1	-
Aldrin	mg/kg	0.1	<0.1	-	<0.1	-
Beta BHC	mg/kg	0.1	<0.1	-	<0.1	-
Delta BHC	mg/kg	0.1	<0.1	-	<0.1	-
Heptachlor epoxide	mg/kg	0.1	<0.1	-	<0.1	-
o,p'-DDE	mg/kg	0.1	<0.1	-	<0.1	-
Alpha Endosulfan	mg/kg	0.2	<0.2	-	<0.2	-
Gamma Chlordane	mg/kg	0.1	<0.1	-	<0.1	-
Alpha Chlordane	mg/kg	0.1	<0.1	-	<0.1	-
trans-Nonachlor	mg/kg	0.1	<0.1	-	<0.1	-
p,p'-DDE	mg/kg	0.1	<0.1	-	<0.1	-
Dieldrin	mg/kg	0.2	<0.2	-	<0.2	-
Endrin	mg/kg	0.2	<0.2	-	<0.2	-

Parameter	Units	LOR	Sample Number	SE195298.005	SE195298.006	SE195298.007	SE195298.008
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH5 0.2-0.3	BH5 0.7-0.8	BH6 0.2-0.3	BH6 0.7-0.8

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019 (continued)**

o,p'-DDD	mg/kg	0.1	<0.1	-	<0.1	-
o,p'-DDT	mg/kg	0.1	<0.1	-	<0.1	-
Beta Endosulfan	mg/kg	0.2	<0.2	-	<0.2	-
p,p'-DDD	mg/kg	0.1	<0.1	-	<0.1	-
p,p'-DDT	mg/kg	0.1	<0.1	-	<0.1	-
Endosulfan sulphate	mg/kg	0.1	<0.1	-	<0.1	-
Endrin Aldehyde	mg/kg	0.1	<0.1	-	<0.1	-
Methoxychlor	mg/kg	0.1	<0.1	-	<0.1	-
Endrin Ketone	mg/kg	0.1	<0.1	-	<0.1	-
Isodrin	mg/kg	0.1	<0.1	-	<0.1	-
Mirex	mg/kg	0.1	<0.1	-	<0.1	-
Total CLP OC Pesticides	mg/kg	1	<1	-	<1	-

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	<b>101</b>	-	<b>100</b>	-
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**OP Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Dichlorvos	mg/kg	0.5	<0.5	-	<0.5	-
Dimethoate	mg/kg	0.5	<0.5	-	<0.5	-
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	-	<0.5	-
Fenitrothion	mg/kg	0.2	<0.2	-	<0.2	-
Malathion	mg/kg	0.2	<0.2	-	<0.2	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	-	<0.2	-
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	-	<0.2	-
Bromophos Ethyl	mg/kg	0.2	<0.2	-	<0.2	-
Methodathion	mg/kg	0.5	<0.5	-	<0.5	-
Ethion	mg/kg	0.2	<0.2	-	<0.2	-
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	-	<0.2	-
Total OP Pesticides*	mg/kg	1.7	<1.7	-	<1.7	-

Surrogates

2-fluorobiphenyl (Surrogate)	%	-	<b>86</b>	-	<b>84</b>	-
d14-p-terphenyl (Surrogate)	%	-	<b>96</b>	-	<b>90</b>	-

**PCBs in Soil Method: AN420 Tested: 16/7/2019**

Arochlor 1016	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1221	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1232	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1242	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1248	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1254	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1260	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1262	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1268	mg/kg	0.2	<0.2	-	<0.2	-
Total PCBs (Arochlors)	mg/kg	1	<1	-	<1	-

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	<b>101</b>	-	<b>100</b>	-
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Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Sample Number			SE195298.005	SE195298.006	SE195298.007	SE195298.008
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH5 0.2-0.3	BH5 0.7-0.8	BH6 0.2-0.3	BH6 0.7-0.8

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Arsenic, As	mg/kg	1	4	13	6	15
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	5.0	16	7.3	15
Copper, Cu	mg/kg	0.5	3.1	18	5.9	17
Nickel, Ni	mg/kg	0.5	2.3	9.3	4.9	9.7
Lead, Pb	mg/kg	1	5	12	7	12
Zinc, Zn	mg/kg	2	11	27	21	28

**Mercury in Soil Method: AN312 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05

**Moisture Content Method: AN002 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
% Moisture	%w/w	0.5	2.8	12	3.7	7.7

**Trace Metals (Total) in Water by ICPMS Method: AN022/AN318 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Total Arsenic	µg/L	1	-	-	-	-
Total Cadmium	µg/L	0.1	-	-	-	-
Total Chromium	µg/L	1	-	-	-	-
Total Copper	µg/L	1	-	-	-	-
Total Lead	µg/L	1	-	-	-	-
Total Nickel	µg/L	1	-	-	-	-
Total Zinc	µg/L	5	-	-	-	-

**Mercury (total) in Water Method: AN311(Perth) /AN312 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.005	SE195298.006	SE195298.007	SE195298.008
Total Mercury	mg/L	0.0001	-	-	-	-

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Sample Number			SE195298.009	SE195298.010	SE195298.011	SE195298.012
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH7 0.2-0.3	BH7 0.7-0.8	BH8 0.2-0.3	BH10 0.3-0.4

**VOC's in Soil Method: AN433 Tested: 16/7/2019**

Monocyclic Aromatic Hydrocarbons

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Polycyclic VOCs

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Surrogates

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Dibromofluoromethane (Surrogate)	%	-	88	84	89	86
d4-1,2-dichloroethane (Surrogate)	%	-	95	96	91	90
d8-toluene (Surrogate)	%	-	91	92	88	86
Bromofluorobenzene (Surrogate)	%	-	87	88	83	82

Totals

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6

**Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20

Surrogates

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Dibromofluoromethane (Surrogate)	%	-	88	84	89	86
d4-1,2-dichloroethane (Surrogate)	%	-	95	96	91	90
d8-toluene (Surrogate)	%	-	91	92	88	86
Bromofluorobenzene (Surrogate)	%	-	87	88	83	82

VPH F Bands

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number	SE195298.009	SE195298.010	SE195298.011	SE195298.012
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH7 0.2-0.3	BH7 0.7-0.8	BH8 0.2-0.3	BH10 0.3-0.4

**TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210

TRH F Bands

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	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	<0.1	<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)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8

Surrogates

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
d5-nitrobenzene (Surrogate)	%	-	<b>84</b>	<b>84</b>	<b>84</b>	<b>82</b>
2-fluorobiphenyl (Surrogate)	%	-	<b>90</b>	<b>86</b>	<b>84</b>	<b>84</b>
d14-p-terphenyl (Surrogate)	%	-	<b>98</b>	<b>88</b>	<b>98</b>	<b>86</b>

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	-	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	-	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	-	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	-	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	-	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	-	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	-	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	-	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	-	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	-	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	-	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	-	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	-	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	-	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	-	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	-	<0.2	<0.2

Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Sample Number			SE195298.009	SE195298.010	SE195298.011	SE195298.012
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH7 0.2-0.3	BH7 0.7-0.8	BH8 0.2-0.3	BH10 0.3-0.4

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019 (continued)**

o,p'-DDD	mg/kg	0.1	<0.1	-	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	-	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	-	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	-	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	-	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	-	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	-	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	-	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	-	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	-	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	-	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	-	<1	<1

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	<b>95</b>	-	<b>95</b>	<b>97</b>
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**OP Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Dichlorvos	mg/kg	0.5	<0.5	-	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	-	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	-	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	-	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	-	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	-	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	-	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	-	<0.2	<0.2
Methodathion	mg/kg	0.5	<0.5	-	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	-	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	-	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	-	<1.7	<1.7

Surrogates

2-fluorobiphenyl (Surrogate)	%	-	<b>90</b>	-	<b>84</b>	<b>84</b>
d14-p-terphenyl (Surrogate)	%	-	<b>98</b>	-	<b>98</b>	<b>86</b>

**PCBs in Soil Method: AN420 Tested: 16/7/2019**

Arochlor 1016	mg/kg	0.2	<0.2	-	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	-	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	-	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	-	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	-	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	-	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	-	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	-	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	-	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	-	<1	<1

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	<b>95</b>	-	<b>95</b>	<b>97</b>
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Parameter	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Sample Number			SE195298.009	SE195298.010	SE195298.011	SE195298.012
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH7 0.2-0.3	BH7 0.7-0.8	BH8 0.2-0.3	BH10 0.3-0.4

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 17/7/2019**

Element	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Arsenic, As	mg/kg	1	7	13	5	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	6.8	16	5.8	4.5
Copper, Cu	mg/kg	0.5	6.1	15	2.5	2.8
Nickel, Ni	mg/kg	0.5	3.2	11	2.7	2.3
Lead, Pb	mg/kg	1	8	12	5	5
Zinc, Zn	mg/kg	2	16	25	11	15

**Mercury in Soil Method: AN312 Tested: 17/7/2019**

Element	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05

**Moisture Content Method: AN002 Tested: 16/7/2019**

Element	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
% Moisture	%w/w	0.5	5.6	6.3	3.2	6.4

**Trace Metals (Total) in Water by ICPMS Method: AN022/AN318 Tested: 17/7/2019**

Element	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Total Arsenic	µg/L	1	-	-	-	-
Total Cadmium	µg/L	0.1	-	-	-	-
Total Chromium	µg/L	1	-	-	-	-
Total Copper	µg/L	1	-	-	-	-
Total Lead	µg/L	1	-	-	-	-
Total Nickel	µg/L	1	-	-	-	-
Total Zinc	µg/L	5	-	-	-	-

**Mercury (total) in Water Method: AN311(Perth) /AN312 Tested: 16/7/2019**

Element	Units	LOR	SE195298.009	SE195298.010	SE195298.011	SE195298.012
Total Mercury	mg/L	0.0001	-	-	-	-

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Sample Number			SE195298.013	SE195298.014	SE195298.015	SE195298.016
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH10 0.6-0.7	BH15 0.3-0.4	BH15 0.7-0.8	BH17 0.2-0.3

**VOC's in Soil Method: AN433 Tested: 16/7/2019**

Monocyclic Aromatic Hydrocarbons

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Polycyclic VOCs

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Surrogates

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Dibromofluoromethane (Surrogate)	%	-	87	85	88	86
d4-1,2-dichloroethane (Surrogate)	%	-	91	93	96	95
d8-toluene (Surrogate)	%	-	87	89	90	91
Bromofluorobenzene (Surrogate)	%	-	85	86	88	88

Totals

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6

**Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20

Surrogates

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Dibromofluoromethane (Surrogate)	%	-	87	85	88	86
d4-1,2-dichloroethane (Surrogate)	%	-	91	93	96	95
d8-toluene (Surrogate)	%	-	87	89	90	91
Bromofluorobenzene (Surrogate)	%	-	85	86	88	88

VPH F Bands

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number	SE195298.013	SE195298.014	SE195298.015	SE195298.016
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH10 0.6-0.7	BH15 0.3-0.4	BH15 0.7-0.8	BH17 0.2-0.3

**TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210

TRH F Bands

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	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	<0.1	<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)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8

Surrogates

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
d5-nitrobenzene (Surrogate)	%	-	86	80	92	88
2-fluorobiphenyl (Surrogate)	%	-	88	86	94	90
d14-p-terphenyl (Surrogate)	%	-	88	100	88	92

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Hexachlorobenzene (HCB)	mg/kg	0.1	-	<0.1	-	<0.1
Alpha BHC	mg/kg	0.1	-	<0.1	-	<0.1
Lindane	mg/kg	0.1	-	<0.1	-	<0.1
Heptachlor	mg/kg	0.1	-	<0.1	-	<0.1
Aldrin	mg/kg	0.1	-	<0.1	-	<0.1
Beta BHC	mg/kg	0.1	-	<0.1	-	<0.1
Delta BHC	mg/kg	0.1	-	<0.1	-	<0.1
Heptachlor epoxide	mg/kg	0.1	-	<0.1	-	<0.1
o,p'-DDE	mg/kg	0.1	-	<0.1	-	<0.1
Alpha Endosulfan	mg/kg	0.2	-	<0.2	-	<0.2
Gamma Chlordane	mg/kg	0.1	-	<0.1	-	<0.1
Alpha Chlordane	mg/kg	0.1	-	<0.1	-	<0.1
trans-Nonachlor	mg/kg	0.1	-	<0.1	-	<0.1
p,p'-DDE	mg/kg	0.1	-	<0.1	-	<0.1
Dieldrin	mg/kg	0.2	-	<0.2	-	<0.2
Endrin	mg/kg	0.2	-	<0.2	-	<0.2

Parameter	Units	LOR	Sample Number	SE195298.013	SE195298.014	SE195298.015	SE195298.016
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH10 0.6-0.7	BH15 0.3-0.4	BH15 0.7-0.8	BH17 0.2-0.3

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019 (continued)**

o,p'-DDD	mg/kg	0.1	-	<0.1	-	<0.1
o,p'-DDT	mg/kg	0.1	-	<0.1	-	<0.1
Beta Endosulfan	mg/kg	0.2	-	<0.2	-	<0.2
p,p'-DDD	mg/kg	0.1	-	<0.1	-	<0.1
p,p'-DDT	mg/kg	0.1	-	<0.1	-	<0.1
Endosulfan sulphate	mg/kg	0.1	-	<0.1	-	<0.1
Endrin Aldehyde	mg/kg	0.1	-	<0.1	-	<0.1
Methoxychlor	mg/kg	0.1	-	<0.1	-	<0.1
Endrin Ketone	mg/kg	0.1	-	<0.1	-	<0.1
Isodrin	mg/kg	0.1	-	<0.1	-	<0.1
Mirex	mg/kg	0.1	-	<0.1	-	<0.1
Total CLP OC Pesticides	mg/kg	1	-	<1	-	<1

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	<b>94</b>	-	<b>92</b>
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**OP Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Dichlorvos	mg/kg	0.5	-	<0.5	-	<0.5
Dimethoate	mg/kg	0.5	-	<0.5	-	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	-	<0.5	-	<0.5
Fenitrothion	mg/kg	0.2	-	<0.2	-	<0.2
Malathion	mg/kg	0.2	-	<0.2	-	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	<0.2	-	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	-	<0.2	-	<0.2
Bromophos Ethyl	mg/kg	0.2	-	<0.2	-	<0.2
Methidathion	mg/kg	0.5	-	<0.5	-	<0.5
Ethion	mg/kg	0.2	-	<0.2	-	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	-	<0.2	-	<0.2
Total OP Pesticides*	mg/kg	1.7	-	<1.7	-	<1.7

Surrogates

2-fluorobiphenyl (Surrogate)	%	-	-	<b>86</b>	-	<b>90</b>
d14-p-terphenyl (Surrogate)	%	-	-	<b>100</b>	-	<b>92</b>

**PCBs in Soil Method: AN420 Tested: 16/7/2019**

Arochlor 1016	mg/kg	0.2	-	<0.2	-	<0.2
Arochlor 1221	mg/kg	0.2	-	<0.2	-	<0.2
Arochlor 1232	mg/kg	0.2	-	<0.2	-	<0.2
Arochlor 1242	mg/kg	0.2	-	<0.2	-	<0.2
Arochlor 1248	mg/kg	0.2	-	<0.2	-	<0.2
Arochlor 1254	mg/kg	0.2	-	<0.2	-	<0.2
Arochlor 1260	mg/kg	0.2	-	<0.2	-	<0.2
Arochlor 1262	mg/kg	0.2	-	<0.2	-	<0.2
Arochlor 1268	mg/kg	0.2	-	<0.2	-	<0.2
Total PCBs (Arochlors)	mg/kg	1	-	<1	-	<1

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	<b>94</b>	-	<b>92</b>
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Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Sample Number			SE195298.013	SE195298.014	SE195298.015	SE195298.016
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH10 0.6-0.7	BH15 0.3-0.4	BH15 0.7-0.8	BH17 0.2-0.3

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Arsenic, As	mg/kg	1	13	3	14	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	16	4.5	15	11
Copper, Cu	mg/kg	0.5	14	2.7	17	8.8
Nickel, Ni	mg/kg	0.5	11	1.8	9.1	8.6
Lead, Pb	mg/kg	1	10	4	12	11
Zinc, Zn	mg/kg	2	23	12	27	22

**Mercury in Soil Method: AN312 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05

**Moisture Content Method: AN002 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
% Moisture	%w/w	0.5	8.4	2.1	9.9	4.4

**Trace Metals (Total) in Water by ICPMS Method: AN022/AN318 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Total Arsenic	µg/L	1	-	-	-	-
Total Cadmium	µg/L	0.1	-	-	-	-
Total Chromium	µg/L	1	-	-	-	-
Total Copper	µg/L	1	-	-	-	-
Total Lead	µg/L	1	-	-	-	-
Total Nickel	µg/L	1	-	-	-	-
Total Zinc	µg/L	5	-	-	-	-

**Mercury (total) in Water Method: AN311(Perth) /AN312 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.013	SE195298.014	SE195298.015	SE195298.016
Total Mercury	mg/L	0.0001	-	-	-	-

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Sample Number			SE195298.017	SE195298.018	SE195298.019	SE195298.020
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH20 0.2-0.3	BH20 0.7-0.8	BH24 0.2-0.3	BH24 0.7-0.8

**VOC's in Soil Method: AN433 Tested: 16/7/2019**

Monocyclic Aromatic Hydrocarbons

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Polycyclic VOCs

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Surrogates

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Dibromofluoromethane (Surrogate)	%	-	88	85	90	90
d4-1,2-dichloroethane (Surrogate)	%	-	90	96	96	91
d8-toluene (Surrogate)	%	-	85	90	91	91
Bromofluorobenzene (Surrogate)	%	-	82	89	87	95

Totals

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6

**Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20

Surrogates

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Dibromofluoromethane (Surrogate)	%	-	88	85	90	90
d4-1,2-dichloroethane (Surrogate)	%	-	90	96	96	91
d8-toluene (Surrogate)	%	-	85	90	91	91
Bromofluorobenzene (Surrogate)	%	-	82	89	87	95

VPH F Bands

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number	SE195298.017	SE195298.018	SE195298.019	SE195298.020
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH20 0.2-0.3	BH20 0.7-0.8	BH24 0.2-0.3	BH24 0.7-0.8

**TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210

TRH F Bands

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	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	<0.1	<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)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8

Surrogates

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
d5-nitrobenzene (Surrogate)	%	-	<b>82</b>	<b>80</b>	<b>86</b>	<b>94</b>
2-fluorobiphenyl (Surrogate)	%	-	<b>78</b>	<b>88</b>	<b>92</b>	<b>90</b>
d14-p-terphenyl (Surrogate)	%	-	<b>102</b>	<b>88</b>	<b>92</b>	<b>94</b>

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	-	<0.1	-
Alpha BHC	mg/kg	0.1	<0.1	-	<0.1	-
Lindane	mg/kg	0.1	<0.1	-	<0.1	-
Heptachlor	mg/kg	0.1	<0.1	-	<0.1	-
Aldrin	mg/kg	0.1	<0.1	-	<0.1	-
Beta BHC	mg/kg	0.1	<0.1	-	<0.1	-
Delta BHC	mg/kg	0.1	<0.1	-	<0.1	-
Heptachlor epoxide	mg/kg	0.1	<0.1	-	<0.1	-
o,p'-DDE	mg/kg	0.1	<0.1	-	<0.1	-
Alpha Endosulfan	mg/kg	0.2	<0.2	-	<0.2	-
Gamma Chlordane	mg/kg	0.1	<0.1	-	<0.1	-
Alpha Chlordane	mg/kg	0.1	<0.1	-	<0.1	-
trans-Nonachlor	mg/kg	0.1	<0.1	-	<0.1	-
p,p'-DDE	mg/kg	0.1	<0.1	-	<0.1	-
Dieldrin	mg/kg	0.2	<0.2	-	<0.2	-
Endrin	mg/kg	0.2	<0.2	-	<0.2	-

Parameter	Units	LOR	Sample Number	SE195298.017	SE195298.018	SE195298.019	SE195298.020
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH20 0.2-0.3	BH20 0.7-0.8	BH24 0.2-0.3	BH24 0.7-0.8

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019 (continued)**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
o,p'-DDD	mg/kg	0.1	<0.1	-	<0.1	-
o,p'-DDT	mg/kg	0.1	<0.1	-	<0.1	-
Beta Endosulfan	mg/kg	0.2	<0.2	-	<0.2	-
p,p'-DDD	mg/kg	0.1	<0.1	-	<0.1	-
p,p'-DDT	mg/kg	0.1	<0.1	-	<0.1	-
Endosulfan sulphate	mg/kg	0.1	<0.1	-	<0.1	-
Endrin Aldehyde	mg/kg	0.1	<0.1	-	<0.1	-
Methoxychlor	mg/kg	0.1	<0.1	-	<0.1	-
Endrin Ketone	mg/kg	0.1	<0.1	-	<0.1	-
Isodrin	mg/kg	0.1	<0.1	-	<0.1	-
Mirex	mg/kg	0.1	<0.1	-	<0.1	-
Total CLP OC Pesticides	mg/kg	1	<1	-	<1	-

Surrogates

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97	-	95	-

**OP Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Dichlorvos	mg/kg	0.5	<0.5	-	<0.5	-
Dimethoate	mg/kg	0.5	<0.5	-	<0.5	-
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	-	<0.5	-
Fenitrothion	mg/kg	0.2	<0.2	-	<0.2	-
Malathion	mg/kg	0.2	<0.2	-	<0.2	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	-	<0.2	-
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	-	<0.2	-
Bromophos Ethyl	mg/kg	0.2	<0.2	-	<0.2	-
Methodathion	mg/kg	0.5	<0.5	-	<0.5	-
Ethion	mg/kg	0.2	<0.2	-	<0.2	-
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	-	<0.2	-
Total OP Pesticides*	mg/kg	1.7	<1.7	-	<1.7	-

Surrogates

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
2-fluorobiphenyl (Surrogate)	%	-	78	-	92	-
d14-p-terphenyl (Surrogate)	%	-	102	-	92	-

**PCBs in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Arochlor 1016	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1221	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1232	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1242	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1248	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1254	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1260	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1262	mg/kg	0.2	<0.2	-	<0.2	-
Arochlor 1268	mg/kg	0.2	<0.2	-	<0.2	-
Total PCBs (Arochlors)	mg/kg	1	<1	-	<1	-

Surrogates

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97	-	95	-

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Sample Number			SE195298.017	SE195298.018	SE195298.019	SE195298.020
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH20 0.2-0.3	BH20 0.7-0.8	BH24 0.2-0.3	BH24 0.7-0.8

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Arsenic, As	mg/kg	1	4	16	3	8
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	5.6	14	6.5	13
Copper, Cu	mg/kg	0.5	3.0	10	4.5	14
Nickel, Ni	mg/kg	0.5	2.5	10	3.3	9.3
Lead, Pb	mg/kg	1	7	9	7	9
Zinc, Zn	mg/kg	2	13	25	17	21

**Mercury in Soil Method: AN312 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05

**Moisture Content Method: AN002 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
% Moisture	%w/w	0.5	8.7	8.4	5.2	6.1

**Trace Metals (Total) in Water by ICPMS Method: AN022/AN318 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Total Arsenic	µg/L	1	-	-	-	-
Total Cadmium	µg/L	0.1	-	-	-	-
Total Chromium	µg/L	1	-	-	-	-
Total Copper	µg/L	1	-	-	-	-
Total Lead	µg/L	1	-	-	-	-
Total Nickel	µg/L	1	-	-	-	-
Total Zinc	µg/L	5	-	-	-	-

**Mercury (total) in Water Method: AN311(Perth) /AN312 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.017	SE195298.018	SE195298.019	SE195298.020
Total Mercury	mg/L	0.0001	-	-	-	-

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Sample Number			SE195298.021	SE195298.022	SE195298.023	SE195298.024
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH27 0.3-0.4	BH27 0.7-0.8	DUP1	DUP2

**VOC's in Soil Method: AN433 Tested: 16/7/2019**

Monocyclic Aromatic Hydrocarbons

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Polycyclic VOCs

Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	91	86	90	90
d4-1,2-dichloroethane (Surrogate)	%	-	91	89	94	95
d8-toluene (Surrogate)	%	-	92	89	95	95
Bromofluorobenzene (Surrogate)	%	-	94	93	97	98

Totals

Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6

**Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 16/7/2019**

TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20

Surrogates

Dibromofluoromethane (Surrogate)	%	-	91	86	90	90
d4-1,2-dichloroethane (Surrogate)	%	-	91	89	94	95
d8-toluene (Surrogate)	%	-	92	89	95	95
Bromofluorobenzene (Surrogate)	%	-	94	93	97	98

VPH F Bands

Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

Parameter	Units	LOR	Sample Number	SE195298.021	SE195298.022	SE195298.023	SE195298.024
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH27 0.3-0.4	BH27 0.7-0.8	DUP1	DUP2

**TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210

TRH F Bands

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	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	<0.1	<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)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8

Surrogates

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
d5-nitrobenzene (Surrogate)	%	-	88	86	98	84
2-fluorobiphenyl (Surrogate)	%	-	94	92	98	90
d14-p-terphenyl (Surrogate)	%	-	88	90	94	86

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	-	-	-
Alpha BHC	mg/kg	0.1	<0.1	-	-	-
Lindane	mg/kg	0.1	<0.1	-	-	-
Heptachlor	mg/kg	0.1	<0.1	-	-	-
Aldrin	mg/kg	0.1	<0.1	-	-	-
Beta BHC	mg/kg	0.1	<0.1	-	-	-
Delta BHC	mg/kg	0.1	<0.1	-	-	-
Heptachlor epoxide	mg/kg	0.1	<0.1	-	-	-
o,p'-DDE	mg/kg	0.1	<0.1	-	-	-
Alpha Endosulfan	mg/kg	0.2	<0.2	-	-	-
Gamma Chlordane	mg/kg	0.1	<0.1	-	-	-
Alpha Chlordane	mg/kg	0.1	<0.1	-	-	-
trans-Nonachlor	mg/kg	0.1	<0.1	-	-	-
p,p'-DDE	mg/kg	0.1	<0.1	-	-	-
Dieldrin	mg/kg	0.2	<0.2	-	-	-
Endrin	mg/kg	0.2	<0.2	-	-	-

Parameter	Units	LOR	Sample Number	SE195298.021	SE195298.022	SE195298.023	SE195298.024
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	BH27 0.3-0.4	BH27 0.7-0.8	DUP1	DUP2

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019 (continued)**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
o,p'-DDD	mg/kg	0.1	<0.1	-	-	-
o,p'-DDT	mg/kg	0.1	<0.1	-	-	-
Beta Endosulfan	mg/kg	0.2	<0.2	-	-	-
p,p'-DDD	mg/kg	0.1	<0.1	-	-	-
p,p'-DDT	mg/kg	0.1	<0.1	-	-	-
Endosulfan sulphate	mg/kg	0.1	<0.1	-	-	-
Endrin Aldehyde	mg/kg	0.1	<0.1	-	-	-
Methoxychlor	mg/kg	0.1	<0.1	-	-	-
Endrin Ketone	mg/kg	0.1	<0.1	-	-	-
Isodrin	mg/kg	0.1	<0.1	-	-	-
Mirex	mg/kg	0.1	<0.1	-	-	-
Total CLP OC Pesticides	mg/kg	1	<1	-	-	-

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	<b>94</b>	-	-	-
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**OP Pesticides in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Dichlorvos	mg/kg	0.5	<0.5	-	-	-
Dimethoate	mg/kg	0.5	<0.5	-	-	-
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	-	-	-
Fenitrothion	mg/kg	0.2	<0.2	-	-	-
Malathion	mg/kg	0.2	<0.2	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	-	-	-
Bromophos Ethyl	mg/kg	0.2	<0.2	-	-	-
Methodathion	mg/kg	0.5	<0.5	-	-	-
Ethion	mg/kg	0.2	<0.2	-	-	-
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	-	-	-
Total OP Pesticides*	mg/kg	1.7	<1.7	-	-	-

Surrogates

2-fluorobiphenyl (Surrogate)	%	-	<b>94</b>	-	-	-
d14-p-terphenyl (Surrogate)	%	-	<b>88</b>	-	-	-

**PCBs in Soil Method: AN420 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Arochlor 1016	mg/kg	0.2	<0.2	-	-	-
Arochlor 1221	mg/kg	0.2	<0.2	-	-	-
Arochlor 1232	mg/kg	0.2	<0.2	-	-	-
Arochlor 1242	mg/kg	0.2	<0.2	-	-	-
Arochlor 1248	mg/kg	0.2	<0.2	-	-	-
Arochlor 1254	mg/kg	0.2	<0.2	-	-	-
Arochlor 1260	mg/kg	0.2	<0.2	-	-	-
Arochlor 1262	mg/kg	0.2	<0.2	-	-	-
Arochlor 1268	mg/kg	0.2	<0.2	-	-	-
Total PCBs (Arochlors)	mg/kg	1	<1	-	-	-

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	<b>94</b>	-	-	-
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Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Sample Number			SE195298.021	SE195298.022	SE195298.023	SE195298.024
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			10 Jul 2019	10 Jul 2019	10 Jul 2019	10 Jul 2019
Sample Name			BH27 0.3-0.4	BH27 0.7-0.8	DUP1	DUP2

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Arsenic, As	mg/kg	1	2	15	7	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	4.5	11	7.1	6.4
Copper, Cu	mg/kg	0.5	3.6	11	6.2	4.5
Nickel, Ni	mg/kg	0.5	2.6	8.6	3.5	3.5
Lead, Pb	mg/kg	1	5	8	7	6
Zinc, Zn	mg/kg	2	9.7	23	16	14

**Mercury in Soil Method: AN312 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05

**Moisture Content Method: AN002 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
% Moisture	%w/w	0.5	5.7	5.5	5.1	5.2

**Trace Metals (Total) in Water by ICPMS Method: AN022/AN318 Tested: 17/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Total Arsenic	µg/L	1	-	-	-	-
Total Cadmium	µg/L	0.1	-	-	-	-
Total Chromium	µg/L	1	-	-	-	-
Total Copper	µg/L	1	-	-	-	-
Total Lead	µg/L	1	-	-	-	-
Total Nickel	µg/L	1	-	-	-	-
Total Zinc	µg/L	5	-	-	-	-

**Mercury (total) in Water Method: AN311(Perth) /AN312 Tested: 16/7/2019**

Parameter	Units	LOR	SE195298.021	SE195298.022	SE195298.023	SE195298.024
Total Mercury	mg/L	0.0001	-	-	-	-

Parameter	Units	LOR	Sample Number	SE195298.025	SE195298.026	SE195298.027
			Sample Matrix	Water	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	RINS	Trip Spike	Trip Blank

**VOC's in Soil Method: AN433 Tested: 19/7/2019**

Monocyclic Aromatic Hydrocarbons

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Benzene	mg/kg	0.1	-	[97.78%]	<0.1
Toluene	mg/kg	0.1	-	[94.40%]	<0.1
Ethylbenzene	mg/kg	0.1	-	[96.66%]	<0.1
m/p-xylene	mg/kg	0.2	-	[96.20%]	<0.2
o-xylene	mg/kg	0.1	-	[97.39%]	<0.1

Polycyclic VOCs

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Naphthalene	mg/kg	0.1	-	-	<0.1

Surrogates

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Dibromofluoromethane (Surrogate)	%	-	-	<b>80</b>	<b>86</b>
d4-1,2-dichloroethane (Surrogate)	%	-	-	<b>84</b>	<b>93</b>
d8-toluene (Surrogate)	%	-	-	<b>83</b>	<b>92</b>
Bromofluorobenzene (Surrogate)	%	-	-	<b>83</b>	<b>94</b>

Totals

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Total Xylenes	mg/kg	0.3	-	-	<0.3
Total BTEX	mg/kg	0.6	-	-	<0.6

**Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 19/7/2019**

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
TRH C6-C10	mg/kg	25	-	-	-
TRH C6-C9	mg/kg	20	-	-	-

Surrogates

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Dibromofluoromethane (Surrogate)	%	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-

VPH F Bands

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Benzene (F0)	mg/kg	0.1	-	-	-
TRH C6-C10 minus BTEX (F1)	mg/kg	25	-	-	-

Parameter	Units	LOR	Sample Number	SE195298.025	SE195298.026	SE195298.027
			Sample Matrix	Water	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	RINS	Trip Spike	Trip Blank

**TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 18/7/2019**

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
TRH C10-C14	mg/kg	20	-	-	<20
TRH C15-C28	mg/kg	45	-	-	<45
TRH C29-C36	mg/kg	45	-	-	<45
TRH C37-C40	mg/kg	100	-	-	<100
TRH C10-C36 Total	mg/kg	110	-	-	<110
TRH C10-C40 Total (F bands)	mg/kg	210	-	-	<210

TRH F Bands

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
TRH >C10-C16	mg/kg	25	-	-	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	-	-	<25
TRH >C16-C34 (F3)	mg/kg	90	-	-	<90
TRH >C34-C40 (F4)	mg/kg	120	-	-	<120

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 18/7/2019**

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Naphthalene	mg/kg	0.1	-	-	-
2-methylnaphthalene	mg/kg	0.1	-	-	-
1-methylnaphthalene	mg/kg	0.1	-	-	-
Acenaphthylene	mg/kg	0.1	-	-	-
Acenaphthene	mg/kg	0.1	-	-	-
Fluorene	mg/kg	0.1	-	-	-
Phenanthrene	mg/kg	0.1	-	-	-
Anthracene	mg/kg	0.1	-	-	-
Fluoranthene	mg/kg	0.1	-	-	-
Pyrene	mg/kg	0.1	-	-	-
Benzo(a)anthracene	mg/kg	0.1	-	-	-
Chrysene	mg/kg	0.1	-	-	-
Benzo(b&j)fluoranthene	mg/kg	0.1	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	-	-	-
Benzo(a)pyrene	mg/kg	0.1	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	-	-
Dibenzo(ah)anthracene	mg/kg	0.1	-	-	-
Benzo(ghi)perylene	mg/kg	0.1	-	-	-
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	-	-	-
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	-	-	-
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	-	-	-
Total PAH (18)	mg/kg	0.8	-	-	-
Total PAH (NEPM/WHO 16)	mg/kg	0.8	-	-	-

Surrogates

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
d5-nitrobenzene (Surrogate)	%	-	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-

**OC Pesticides in Soil Method: AN420 Tested: 19/7/2019**

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Hexachlorobenzene (HCB)	mg/kg	0.1	-	-	-
Alpha BHC	mg/kg	0.1	-	-	-
Lindane	mg/kg	0.1	-	-	-
Heptachlor	mg/kg	0.1	-	-	-
Aldrin	mg/kg	0.1	-	-	-
Beta BHC	mg/kg	0.1	-	-	-
Delta BHC	mg/kg	0.1	-	-	-
Heptachlor epoxide	mg/kg	0.1	-	-	-
o,p'-DDE	mg/kg	0.1	-	-	-
Alpha Endosulfan	mg/kg	0.2	-	-	-
Gamma Chlordane	mg/kg	0.1	-	-	-
Alpha Chlordane	mg/kg	0.1	-	-	-
trans-Nonachlor	mg/kg	0.1	-	-	-
p,p'-DDE	mg/kg	0.1	-	-	-
Dieldrin	mg/kg	0.2	-	-	-

Parameter	Units	LOR	Sample Number	SE195298.025	SE195298.026	SE195298.027
			Sample Matrix	Water	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	RINS	Trip Spike	Trip Blank

**OC Pesticides in Soil Method: AN420 Tested: 16/7/2019 (continued)**

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Endrin	mg/kg	0.2	-	-	-
o,p'-DDD	mg/kg	0.1	-	-	-
o,p'-DDT	mg/kg	0.1	-	-	-
Beta Endosulfan	mg/kg	0.2	-	-	-
p,p'-DDD	mg/kg	0.1	-	-	-
p,p'-DDT	mg/kg	0.1	-	-	-
Endosulfan sulphate	mg/kg	0.1	-	-	-
Endrin Aldehyde	mg/kg	0.1	-	-	-
Methoxychlor	mg/kg	0.1	-	-	-
Endrin Ketone	mg/kg	0.1	-	-	-
Isodrin	mg/kg	0.1	-	-	-
Mirex	mg/kg	0.1	-	-	-
Total CLP OC Pesticides	mg/kg	1	-	-	-

Surrogates

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-

**OP Pesticides in Soil Method: AN420 Tested: 18/7/2019**

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Dichlorvos	mg/kg	0.5	-	-	-
Dimethoate	mg/kg	0.5	-	-	-
Diazinon (Dimpylate)	mg/kg	0.5	-	-	-
Fenitrothion	mg/kg	0.2	-	-	-
Malathion	mg/kg	0.2	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	-	-
Bromophos Ethyl	mg/kg	0.2	-	-	-
Methidathion	mg/kg	0.5	-	-	-
Ethion	mg/kg	0.2	-	-	-
Azinphos-methyl (Guthion)	mg/kg	0.2	-	-	-
Total OP Pesticides*	mg/kg	1.7	-	-	-

Surrogates

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
2-fluorobiphenyl (Surrogate)	%	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-

**PCBs in Soil Method: AN420 Tested: 19/7/2019**

Parameter	Units	LOR	SE195298.025	SE195298.026	SE195298.027
Arochlor 1016	mg/kg	0.2	-	-	-
Arochlor 1221	mg/kg	0.2	-	-	-
Arochlor 1232	mg/kg	0.2	-	-	-
Arochlor 1242	mg/kg	0.2	-	-	-
Arochlor 1248	mg/kg	0.2	-	-	-
Arochlor 1254	mg/kg	0.2	-	-	-
Arochlor 1260	mg/kg	0.2	-	-	-
Arochlor 1262	mg/kg	0.2	-	-	-
Arochlor 1268	mg/kg	0.2	-	-	-
Total PCBs (Arochlors)	mg/kg	1	-	-	-

Parameter	Units	LOR	Sample Number	SE195298.025	SE195298.026	SE195298.027
			Sample Matrix	Water	Soil	Soil
			Sample Date	10 Jul 2019	10 Jul 2019	10 Jul 2019
			Sample Name	RINS	Trip Spike	Trip Blank

**PCBs in Soil Method: AN420 Tested: 19/7/2019 (continued)**

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-
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**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 18/7/2019**

Arsenic, As	mg/kg	1	-	-	-
Cadmium, Cd	mg/kg	0.3	-	-	-
Chromium, Cr	mg/kg	0.3	-	-	-
Copper, Cu	mg/kg	0.5	-	-	-
Nickel, Ni	mg/kg	0.5	-	-	-
Lead, Pb	mg/kg	1	-	-	-
Zinc, Zn	mg/kg	2	-	-	-

**Mercury in Soil Method: AN312 Tested: 18/7/2019**

Mercury	mg/kg	0.05	-	-	-
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**Moisture Content Method: AN002 Tested: 17/7/2019**

% Moisture	%w/w	0.5	-	-	<0.5
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**Trace Metals (Total) in Water by ICPMS Method: AN022/AN318 Tested: 16/7/2019**

Total Arsenic	µg/L	1	-	-	-
Total Cadmium	µg/L	0.1	-	-	-
Total Chromium	µg/L	1	-	-	-
Total Copper	µg/L	1	-	-	-
Total Lead	µg/L	1	-	-	-
Total Nickel	µg/L	1	-	-	-
Total Zinc	µg/L	5	-	-	-

**Mercury (total) in Water Method: AN311(Perth) /AN312 Tested: 16/7/2019**

Total Mercury	mg/L	0.0001	<0.0001	-	-
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MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared to the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

**Mercury (total) in Water Method: ME-(AU)-[ENV]AN311(Perth) /AN312**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Total Mercury	LB178511	mg/L	0.0001	<0.0001	NA

**Mercury in Soil Method: ME-(AU)-[ENV]AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB178676	mg/kg	0.05	<0.05	0%	110%	104%
	LB178677	mg/kg	0.05	<0.05	0%	101%	91%

**Moisture Content Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB178555	%w/w	0.5	1%
	LB178564	%w/w	0.5	0 - 15%

**OC Pesticides in Soil Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Hexachlorobenzene (HCB)	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Alpha BHC	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Lindane	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Heptachlor	LB178547	mg/kg	0.1	<0.1	0%	79%	90%
	LB178549	mg/kg	0.1	<0.1		82%	
Aldrin	LB178547	mg/kg	0.1	<0.1	0%	90%	93%
	LB178549	mg/kg	0.1	<0.1		95%	
Beta BHC	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Delta BHC	LB178547	mg/kg	0.1	<0.1	0%	81%	81%
	LB178549	mg/kg	0.1	<0.1		76%	
Heptachlor epoxide	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
o,p'-DDE	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Alpha Endosulfan	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Gamma Chlordane	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Alpha Chlordane	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
trans-Nonachlor	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
p,p'-DDE	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Dieldrin	LB178547	mg/kg	0.2	<0.2	0%	88%	92%
	LB178549	mg/kg	0.2	<0.2		92%	
Endrin	LB178547	mg/kg	0.2	<0.2	0%	85%	90%
	LB178549	mg/kg	0.2	<0.2		86%	
o,p'-DDD	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
o,p'-DDT	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Beta Endosulfan	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
p,p'-DDD	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
p,p'-DDT	LB178547	mg/kg	0.1	<0.1	0%	78%	76%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

OC Pesticides in Soil Method: ME-(AU)-[ENV]AN420 (continued)

				MB	DUP %RPD	LCS %Recovery	MS %Recovery
p,p'-DDT	LB178549	mg/kg	0.1	<0.1		77%	
Endosulfan sulphate	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Endrin Aldehyde	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Methoxychlor	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Endrin Ketone	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Isodrin	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Mirex	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1		NA	
Total CLP OC Pesticides	LB178547	mg/kg	1	<1	0%	NA	NA
	LB178549	mg/kg	1	<1		NA	

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB178547	%	-	94%	4%	97%	97%
	LB178549	%	-	95%		97%	

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared to the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
Dichlorvos	LB178547	mg/kg	0.5	<0.5	0%	125%	105%
	LB178549	mg/kg	0.5	<0.5		108%	
Dimethoate	LB178547	mg/kg	0.5	<0.5	0%	NA	NA
	LB178549	mg/kg	0.5	<0.5		NA	
Diazinon (Dimpylate)	LB178547	mg/kg	0.5	<0.5	0%	112%	108%
	LB178549	mg/kg	0.5	<0.5		100%	
Fenitrothion	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Malathion	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Chlorpyrifos (Chlorpyrifos Ethyl)	LB178547	mg/kg	0.2	<0.2	0%	108%	107%
	LB178549	mg/kg	0.2	<0.2		88%	
Parathion-ethyl (Parathion)	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Bromophos Ethyl	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Methidathion	LB178547	mg/kg	0.5	<0.5	0%	NA	NA
	LB178549	mg/kg	0.5	<0.5		NA	
Ethion	LB178547	mg/kg	0.2	<0.2	0%	107%	106%
	LB178549	mg/kg	0.2	<0.2		90%	
Azinphos-methyl (Guthion)	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Total OP Pesticides*	LB178547	mg/kg	1.7	<1.7	0%	NA	NA
	LB178549	mg/kg	1.7	<1.7		NA	

Surrogates

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
2-fluorobiphenyl (Surrogate)	LB178547	%	-	90%	5 - 7%	86%	88%
	LB178549	%	-	88%		84%	
d14-p-terphenyl (Surrogate)	LB178547	%	-	96%	4 - 16%	90%	86%
	LB178549	%	-	82%		84%	



MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared to the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
Naphthalene	LB178547	mg/kg	0.1	<0.1	0%	99%	106%
	LB178549	mg/kg	0.1	<0.1	0%	105%	99%
2-methylnaphthalene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
1-methylnaphthalene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Acenaphthylene	LB178547	mg/kg	0.1	<0.1	0%	107%	115%
	LB178549	mg/kg	0.1	<0.1	0%	110%	101%
Acenaphthene	LB178547	mg/kg	0.1	<0.1	0%	104%	104%
	LB178549	mg/kg	0.1	<0.1	0%	109%	105%
Fluorene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Phenanthrene	LB178547	mg/kg	0.1	<0.1	0%	105%	113%
	LB178549	mg/kg	0.1	<0.1	0%	113%	103%
Anthracene	LB178547	mg/kg	0.1	<0.1	0%	99%	108%
	LB178549	mg/kg	0.1	<0.1	0%	105%	95%
Fluoranthene	LB178547	mg/kg	0.1	<0.1	0%	97%	105%
	LB178549	mg/kg	0.1	<0.1	0%	104%	97%
Pyrene	LB178547	mg/kg	0.1	<0.1	0%	100%	110%
	LB178549	mg/kg	0.1	<0.1	3%	110%	101%
Benzo(a)anthracene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Chrysene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(b&j)fluoranthene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(k)fluoranthene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(a)pyrene	LB178547	mg/kg	0.1	<0.1	0%	109%	118%
	LB178549	mg/kg	0.1	<0.1	0%	110%	107%
Indeno(1,2,3-cd)pyrene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Dibenzo(ah)anthracene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(ghi)perylene	LB178547	mg/kg	0.1	<0.1	0%	NA	NA
	LB178549	mg/kg	0.1	<0.1	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=0	LB178547	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
	LB178549	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR	LB178547	TEQ (mg/kg)	0.3	<0.3	0%	NA	NA
	LB178549	TEQ (mg/kg)	0.3	<0.3	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	LB178547	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
	LB178549	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Total PAH (18)	LB178547	mg/kg	0.8	<0.8	0%	NA	NA
	LB178549	mg/kg	0.8	<0.8	0%	NA	NA
Total PAH (NEPM/WHO 16)	LB178547	mg/kg	0.8	<0.8			
	LB178549	mg/kg	0.8	<0.8			

Surrogates

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
d5-nitrobenzene (Surrogate)	LB178547	%	-	84%	2 - 5%	88%	94%
	LB178549	%	-	86%	4%	90%	86%
2-fluorobiphenyl (Surrogate)	LB178547	%	-	90%	5 - 7%	86%	88%
	LB178549	%	-	88%	2%	84%	84%
d14-p-terphenyl (Surrogate)	LB178547	%	-	96%	4 - 16%	90%	86%
	LB178549	%	-	82%	7%	84%	88%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared to the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

PCBs in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
Arochlor 1016	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Arochlor 1221	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Arochlor 1232	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Arochlor 1242	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Arochlor 1248	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Arochlor 1254	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Arochlor 1260	LB178547	mg/kg	0.2	<0.2	0%	103%	105%
	LB178549	mg/kg	0.2	<0.2		108%	
Arochlor 1262	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Arochlor 1268	LB178547	mg/kg	0.2	<0.2	0%	NA	NA
	LB178549	mg/kg	0.2	<0.2		NA	
Total PCBs (Arochlors)	LB178547	mg/kg	1	<1	0%	NA	NA
	LB178549	mg/kg	1	<1		NA	

Surrogates

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB178547	%	-	97%	4%	95%	97%
	LB178549	%	-	95%		95%	

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: ME-(AU)-[ENV]AN040/AN320

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
Arsenic, As	LB178671	mg/kg	1	<1	2 - 17%	102%	90%
	LB178672	mg/kg	1	<1	5%	96%	90%
Cadmium, Cd	LB178671	mg/kg	0.3	<0.3	0%	103%	94%
	LB178672	mg/kg	0.3	<0.3	0%	102%	94%
Chromium, Cr	LB178671	mg/kg	0.3	<0.3	5 - 18%	107%	94%
	LB178672	mg/kg	0.3	<0.3	35%	97%	95%
Copper, Cu	LB178671	mg/kg	0.5	<0.5	1 - 18%	87%	99%
	LB178672	mg/kg	0.5	<0.5	2%	84%	101%
Nickel, Ni	LB178671	mg/kg	0.5	<0.5	0 - 22%	88%	95%
	LB178672	mg/kg	0.5	<0.5	7%	85%	94%
Lead, Pb	LB178671	mg/kg	1	<1	6 - 11%	84%	92%
	LB178672	mg/kg	1	<1	20%	82%	91%
Zinc, Zn	LB178671	mg/kg	2	<2.0	2 - 11%	95%	94%
	LB178672	mg/kg	2	<2.0	8%	91%	96%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared to the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

**TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C10-C14	LB178547	mg/kg	20	<20	0%	113%	105%
	LB178549	mg/kg	20	<20	0%	113%	65%
TRH C15-C28	LB178547	mg/kg	45	<45	0%	100%	103%
	LB178549	mg/kg	45	<45	7%	105%	83%
TRH C29-C36	LB178547	mg/kg	45	<45	0%	78%	95%
	LB178549	mg/kg	45	<45	0%	105%	100%
TRH C37-C40	LB178547	mg/kg	100	<100	0%	NA	NA
	LB178549	mg/kg	100	<100	0%	NA	NA
TRH C10-C36 Total	LB178547	mg/kg	110	<110	0%	NA	NA
	LB178549	mg/kg	110	<110	6%	NA	NA
TRH C10-C40 Total (F bands)	LB178547	mg/kg	210	<210	0%	NA	NA
	LB178549	mg/kg	210	<210	6%	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH >C10-C16	LB178547	mg/kg	25	<25	0%	108%	103%
	LB178549	mg/kg	25	<25	3%	110%	78%
TRH >C10-C16 - Naphthalene (F2)	LB178547	mg/kg	25	<25	0%	NA	NA
	LB178549	mg/kg	25	<25	3%	NA	NA
TRH >C16-C34 (F3)	LB178547	mg/kg	90	<90	0%	90%	108%
	LB178549	mg/kg	90	<90	7%	98%	93%
TRH >C34-C40 (F4)	LB178547	mg/kg	120	<120	0%	70%	NA
	LB178549	mg/kg	120	<120	0%	120%	NA

**VOC's in Soil Method: ME-(AU)-[ENV]AN433**

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB178536	mg/kg	0.1	<0.1	0%	74%	73%
	LB178537	mg/kg	0.1	<0.1	0%	70%	71%
Toluene	LB178536	mg/kg	0.1	<0.1	0%	76%	73%
	LB178537	mg/kg	0.1	<0.1	0%	63%	74%
Ethylbenzene	LB178536	mg/kg	0.1	<0.1	0%	76%	73%
	LB178537	mg/kg	0.1	<0.1	0%	69%	75%
m/p-xylene	LB178536	mg/kg	0.2	<0.2	0%	78%	75%
	LB178537	mg/kg	0.2	<0.2	0%	69%	76%
o-xylene	LB178536	mg/kg	0.1	<0.1	0%	76%	73%
	LB178537	mg/kg	0.1	<0.1	0%	68%	76%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB178536	mg/kg	0.1	<0.1	0%	NA	NA
	LB178537	mg/kg	0.1	<0.1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB178536	%	-	90%	7 - 9%	89%	91%
	LB178537	%	-	98%	2%	84%	90%
d4-1,2-dichloroethane (Surrogate)	LB178536	%	-	90%	8 - 9%	94%	97%
	LB178537	%	-	99%	2%	93%	91%
d8-toluene (Surrogate)	LB178536	%	-	89%	1 - 7%	92%	93%
	LB178537	%	-	100%	4%	85%	91%
Bromofluorobenzene (Surrogate)	LB178536	%	-	85%	0 - 8%	88%	90%
	LB178537	%	-	101%	25%	98%	91%

Totals

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared to the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

**VOC's in Soil Method: ME-(AU)-[ENV]AN433 (continued)**

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
Total Xylenes	LB178536	mg/kg	0.3	<0.3	0%	NA	NA
	LB178537	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX	LB178536	mg/kg	0.6	<0.6	0%	NA	NA
	LB178537	mg/kg	0.6	<0.6	0%	NA	NA

**Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433**

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
TRH C6-C10	LB178536	mg/kg	25	<25	0%	91%	91%
	LB178537	mg/kg	25	<25	0%	77%	93%
TRH C6-C9	LB178536	mg/kg	20	<20	0%	92%	91%
	LB178537	mg/kg	20	<20	0%	79%	96%

Surrogates

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
Dibromofluoromethane (Surrogate)	LB178536	%	-	90%	7 - 9%	89%	91%
	LB178537	%	-	98%	2%	84%	90%
d4-1,2-dichloroethane (Surrogate)	LB178536	%	-	90%	8 - 9%	94%	97%
	LB178537	%	-	99%	2%	93%	91%
d8-toluene (Surrogate)	LB178536	%	-	89%	1 - 7%	92%	93%
	LB178537	%	-	100%	4%	85%	91%
Bromofluorobenzene (Surrogate)	LB178536	%	-	85%	0 - 8%	88%	90%
	LB178537	%	-	101%	25%	98%	91%

VPH F Bands

Parameter	QC	Units	LOR	MB	DUP %RPD	LCS	MS
	Reference					%Recovery	%Recovery
Benzene (F0)	LB178536	mg/kg	0.1	<0.1	0%	NA	NA
	LB178537	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB178536	mg/kg	25	<25	0%	127%	131%
	LB178537	mg/kg	25	<25	0%	99%	135%

METHOD

METHODOLOGY SUMMARY

AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN022	The water sample is digested with Nitric Acid and made up to the original volume similar to APHA3030E.
AN022/AN318	Following acid digestion of un filtered sample, determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN311(Perth) /AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions taken from unfiltered sample are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

METHOD

METHODOLOGY SUMMARY

AN433

VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
		-	The sample was not analysed for this analyte
		NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received. Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- a. 1 Bq is equivalent to 27 pCi
- b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: [www.sgs.com.au/pv.sgsvr/en-gb/environment](http://www.sgs.com.au/pv.sgsvr/en-gb/environment).

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 Order Number **VC: 04343**  
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SGS Reference **SE195298 R0**  
 Date Received **12 Jul 2019**  
 Date Reported **22 Jul 2019**

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.  
 This QA/QC Statement must be read in conjunction with the referenced Analytical Report.  
 The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
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SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	26 Soil, 1 Water
Date documentation received	12/7/2019	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	15°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Mercury (total) In Water

Method: ME-(AU)-[ENV]AN311(Perth) /AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE195298.025	LB178511	10 Jul 2019	12 Jul 2019	07 Aug 2019	16 Jul 2019	07 Aug 2019	16 Jul 2019

### Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178676	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178676	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178676	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178676	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178676	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178676	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178676	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178676	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
DUP1	SE195298.023	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019
DUP2	SE195298.024	LB178677	10 Jul 2019	12 Jul 2019	07 Aug 2019	17 Jul 2019	07 Aug 2019	19 Jul 2019

### Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178555	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178564	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178564	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178564	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
DUP1	SE195298.023	LB178564	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
DUP2	SE195298.024	LB178564	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019
Trip Blank	SE195298.027	LB178564	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	21 Jul 2019	18 Jul 2019

### OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref
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SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### OC Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP1	SE195298.023	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP2	SE195298.024	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
Trip Blank	SE195298.027	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019

### OP Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP1	SE195298.023	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP2	SE195298.024	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
Trip Blank	SE195298.027	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH5 0.7-0.8	SE195298.006	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP1	SE195298.023	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP2	SE195298.024	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
Trip Blank	SE195298.027	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019

### PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP1	SE195298.023	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP2	SE195298.024	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
Trip Blank	SE195298.027	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019

### Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178671	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178671	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178671	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178671	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178671	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178671	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178671	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178671	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH8 0.2-0.3	SE195298.011	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
DUP1	SE195298.023	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019
DUP2	SE195298.024	LB178672	10 Jul 2019	12 Jul 2019	06 Jan 2020	17 Jul 2019	06 Jan 2020	18 Jul 2019

### Trace Metals (Total) in Water by ICPMS

Method: ME-(AU)-[ENV]AN022/AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE195298.025	LB178506	10 Jul 2019	12 Jul 2019	06 Jan 2020	16 Jul 2019	06 Jan 2020	17 Jul 2019

### TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178547	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
DUP1	SE195298.023	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
DUP2	SE195298.024	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019
Trip Blank	SE195298.027	LB178549	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	18 Jul 2019

### VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

### VOC's in Soil (continued)

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10 0.3-0.4	SE195298.012	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP1	SE195298.023	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP2	SE195298.024	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
Trip Spike	SE195298.026	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
Trip Blank	SE195298.027	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019

### Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1 0.2-0.3	SE195298.001	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH2 0.4-0.5	SE195298.002	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH4 0.2-0.3	SE195298.003	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH4 0.7-0.8	SE195298.004	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH5 0.2-0.3	SE195298.005	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH5 0.7-0.8	SE195298.006	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH6 0.2-0.3	SE195298.007	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH6 0.7-0.8	SE195298.008	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	20 Jul 2019
BH7 0.2-0.3	SE195298.009	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH7 0.7-0.8	SE195298.010	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH8 0.2-0.3	SE195298.011	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH10 0.3-0.4	SE195298.012	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH10 0.6-0.7	SE195298.013	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH15 0.3-0.4	SE195298.014	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH15 0.7-0.8	SE195298.015	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH17 0.2-0.3	SE195298.016	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH20 0.2-0.3	SE195298.017	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH20 0.7-0.8	SE195298.018	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH24 0.2-0.3	SE195298.019	LB178536	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
BH24 0.7-0.8	SE195298.020	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.3-0.4	SE195298.021	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
BH27 0.7-0.8	SE195298.022	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP1	SE195298.023	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
DUP2	SE195298.024	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019
Trip Spike	SE195298.026	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	22 Jul 2019
Trip Blank	SE195298.027	LB178537	10 Jul 2019	12 Jul 2019	24 Jul 2019	16 Jul 2019	25 Aug 2019	19 Jul 2019

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides In Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	94
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	94
	BH4 0.2-0.3	SE195298.003	%	60 - 130%	97
	BH5 0.2-0.3	SE195298.005	%	60 - 130%	101
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	100
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	95
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	95
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	97
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	94
	BH17 0.2-0.3	SE195298.016	%	60 - 130%	92
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	97
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	95
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	94

OP Pesticides In Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	86
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	80
	BH4 0.2-0.3	SE195298.003	%	60 - 130%	88
	BH5 0.2-0.3	SE195298.005	%	60 - 130%	86
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	84
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	90
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	84
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	84
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	86
	BH17 0.2-0.3	SE195298.016	%	60 - 130%	90
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	78
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	92
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	94
	d14-p-terphenyl (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%
BH2 0.4-0.5		SE195298.002	%	60 - 130%	86
BH4 0.2-0.3		SE195298.003	%	60 - 130%	96
BH5 0.2-0.3		SE195298.005	%	60 - 130%	96
BH6 0.2-0.3		SE195298.007	%	60 - 130%	90
BH7 0.2-0.3		SE195298.009	%	60 - 130%	98
BH8 0.2-0.3		SE195298.011	%	60 - 130%	98
BH10 0.3-0.4		SE195298.012	%	60 - 130%	86
BH15 0.3-0.4		SE195298.014	%	60 - 130%	100
BH17 0.2-0.3		SE195298.016	%	60 - 130%	92
BH20 0.2-0.3		SE195298.017	%	60 - 130%	102
BH24 0.2-0.3		SE195298.019	%	60 - 130%	92
BH27 0.3-0.4		SE195298.021	%	60 - 130%	88

PAH (Polynuclear Aromatic Hydrocarbons) In Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1 0.2-0.3	SE195298.001	%	70 - 130%	86
	BH2 0.4-0.5	SE195298.002	%	70 - 130%	80
	BH4 0.2-0.3	SE195298.003	%	70 - 130%	88
	BH4 0.7-0.8	SE195298.004	%	70 - 130%	84
	BH5 0.2-0.3	SE195298.005	%	70 - 130%	86
	BH5 0.7-0.8	SE195298.006	%	70 - 130%	86
	BH6 0.2-0.3	SE195298.007	%	70 - 130%	84
	BH6 0.7-0.8	SE195298.008	%	70 - 130%	86
	BH7 0.2-0.3	SE195298.009	%	70 - 130%	90
	BH7 0.7-0.8	SE195298.010	%	70 - 130%	86
	BH8 0.2-0.3	SE195298.011	%	70 - 130%	84
	BH10 0.3-0.4	SE195298.012	%	70 - 130%	84
	BH10 0.6-0.7	SE195298.013	%	70 - 130%	88
	BH15 0.3-0.4	SE195298.014	%	70 - 130%	86
	BH15 0.7-0.8	SE195298.015	%	70 - 130%	94
	BH17 0.2-0.3	SE195298.016	%	70 - 130%	90
	BH20 0.2-0.3	SE195298.017	%	70 - 130%	78

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH20 0.7-0.8	SE195298.018	%	70 - 130%	88
	BH24 0.2-0.3	SE195298.019	%	70 - 130%	92
	BH24 0.7-0.8	SE195298.020	%	70 - 130%	90
	BH27 0.3-0.4	SE195298.021	%	70 - 130%	94
	BH27 0.7-0.8	SE195298.022	%	70 - 130%	92
	DUP1	SE195298.023	%	70 - 130%	98
	DUP2	SE195298.024	%	70 - 130%	90
	d14-p-terphenyl (Surrogate)	BH1 0.2-0.3	SE195298.001	%	70 - 130%
BH2 0.4-0.5		SE195298.002	%	70 - 130%	86
BH4 0.2-0.3		SE195298.003	%	70 - 130%	96
BH4 0.7-0.8		SE195298.004	%	70 - 130%	94
BH5 0.2-0.3		SE195298.005	%	70 - 130%	96
BH5 0.7-0.8		SE195298.006	%	70 - 130%	92
BH6 0.2-0.3		SE195298.007	%	70 - 130%	90
BH6 0.7-0.8		SE195298.008	%	70 - 130%	94
BH7 0.2-0.3		SE195298.009	%	70 - 130%	98
BH7 0.7-0.8		SE195298.010	%	70 - 130%	88
BH8 0.2-0.3		SE195298.011	%	70 - 130%	98
BH10 0.3-0.4		SE195298.012	%	70 - 130%	86
BH10 0.6-0.7		SE195298.013	%	70 - 130%	88
BH15 0.3-0.4		SE195298.014	%	70 - 130%	100
BH15 0.7-0.8		SE195298.015	%	70 - 130%	88
BH17 0.2-0.3		SE195298.016	%	70 - 130%	92
BH20 0.2-0.3		SE195298.017	%	70 - 130%	102
BH20 0.7-0.8		SE195298.018	%	70 - 130%	88
BH24 0.2-0.3		SE195298.019	%	70 - 130%	92
BH24 0.7-0.8		SE195298.020	%	70 - 130%	94
BH27 0.3-0.4		SE195298.021	%	70 - 130%	88
BH27 0.7-0.8		SE195298.022	%	70 - 130%	90
DUP1	SE195298.023	%	70 - 130%	94	
DUP2	SE195298.024	%	70 - 130%	86	
d5-nitrobenzene (Surrogate)	BH1 0.2-0.3	SE195298.001	%	70 - 130%	78
	BH2 0.4-0.5	SE195298.002	%	70 - 130%	76
	BH4 0.2-0.3	SE195298.003	%	70 - 130%	86
	BH4 0.7-0.8	SE195298.004	%	70 - 130%	82
	BH5 0.2-0.3	SE195298.005	%	70 - 130%	94
	BH5 0.7-0.8	SE195298.006	%	70 - 130%	86
	BH6 0.2-0.3	SE195298.007	%	70 - 130%	86
	BH6 0.7-0.8	SE195298.008	%	70 - 130%	84
	BH7 0.2-0.3	SE195298.009	%	70 - 130%	84
	BH7 0.7-0.8	SE195298.010	%	70 - 130%	84
	BH8 0.2-0.3	SE195298.011	%	70 - 130%	84
	BH10 0.3-0.4	SE195298.012	%	70 - 130%	82
	BH10 0.6-0.7	SE195298.013	%	70 - 130%	86
	BH15 0.3-0.4	SE195298.014	%	70 - 130%	80
	BH15 0.7-0.8	SE195298.015	%	70 - 130%	92
	BH17 0.2-0.3	SE195298.016	%	70 - 130%	88
	BH20 0.2-0.3	SE195298.017	%	70 - 130%	82
	BH20 0.7-0.8	SE195298.018	%	70 - 130%	80
	BH24 0.2-0.3	SE195298.019	%	70 - 130%	86
	BH24 0.7-0.8	SE195298.020	%	70 - 130%	94
	BH27 0.3-0.4	SE195298.021	%	70 - 130%	88
	BH27 0.7-0.8	SE195298.022	%	70 - 130%	86
DUP1	SE195298.023	%	70 - 130%	98	
DUP2	SE195298.024	%	70 - 130%	84	

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	94
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	94
	BH4 0.2-0.3	SE195298.003	%	60 - 130%	97

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH5 0.2-0.3	SE195298.005	%	60 - 130%	101
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	100
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	95
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	95
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	97
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	94
	BH17 0.2-0.3	SE195298.016	%	60 - 130%	92
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	97
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	95
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	94

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	96
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	88
	BH4 0.2-0.3	SE195298.003	%	60 - 130%	87
	BH4 0.7-0.8	SE195298.004	%	60 - 130%	83
	BH5 0.2-0.3	SE195298.005	%	60 - 130%	85
	BH5 0.7-0.8	SE195298.006	%	60 - 130%	83
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	87
	BH6 0.7-0.8	SE195298.008	%	60 - 130%	88
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	87
	BH7 0.7-0.8	SE195298.010	%	60 - 130%	88
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	83
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	82
	BH10 0.6-0.7	SE195298.013	%	60 - 130%	85
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	86
	BH15 0.7-0.8	SE195298.015	%	60 - 130%	88
	BH17 0.2-0.3	SE195298.016	%	60 - 130%	88
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	82
	BH20 0.7-0.8	SE195298.018	%	60 - 130%	89
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	87
	BH24 0.7-0.8	SE195298.020	%	60 - 130%	95
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	94
	BH27 0.7-0.8	SE195298.022	%	60 - 130%	93
	DUP1	SE195298.023	%	60 - 130%	97
DUP2	SE195298.024	%	60 - 130%	98	
Trip Spike	SE195298.026	%	60 - 130%	83	
Trip Blank	SE195298.027	%	60 - 130%	94	
d4-1,2-dichloroethane (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	100
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	92
	BH4 0.2-0.3	SE195298.003	%	60 - 130%	92
	BH4 0.7-0.8	SE195298.004	%	60 - 130%	87
	BH5 0.2-0.3	SE195298.005	%	60 - 130%	92
	BH5 0.7-0.8	SE195298.006	%	60 - 130%	88
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	93
	BH6 0.7-0.8	SE195298.008	%	60 - 130%	93
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	95
	BH7 0.7-0.8	SE195298.010	%	60 - 130%	96
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	91
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	90
	BH10 0.6-0.7	SE195298.013	%	60 - 130%	91
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	93
	BH15 0.7-0.8	SE195298.015	%	60 - 130%	96
	BH17 0.2-0.3	SE195298.016	%	60 - 130%	95
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	90
	BH20 0.7-0.8	SE195298.018	%	60 - 130%	96
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	96
	BH24 0.7-0.8	SE195298.020	%	60 - 130%	91
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	91
	BH27 0.7-0.8	SE195298.022	%	60 - 130%	89

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %	
d4-1,2-dichloroethane (Surrogate)	DUP1	SE195298.023	%	60 - 130%	94	
	DUP2	SE195298.024	%	60 - 130%	95	
	Trip Spike	SE195298.026	%	60 - 130%	84	
	Trip Blank	SE195298.027	%	60 - 130%	93	
d8-toluene (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	98	
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	89	
	BH4 0.2-0.3	SE195298.003	%	60 - 130%	90	
	BH4 0.7-0.8	SE195298.004	%	60 - 130%	86	
	BH5 0.2-0.3	SE195298.005	%	60 - 130%	89	
	BH5 0.7-0.8	SE195298.006	%	60 - 130%	87	
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	91	
	BH6 0.7-0.8	SE195298.008	%	60 - 130%	91	
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	91	
	BH7 0.7-0.8	SE195298.010	%	60 - 130%	92	
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	88	
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	86	
	BH10 0.6-0.7	SE195298.013	%	60 - 130%	87	
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	89	
	BH15 0.7-0.8	SE195298.015	%	60 - 130%	90	
	BH17 0.2-0.3	SE195298.016	%	60 - 130%	91	
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	85	
	BH20 0.7-0.8	SE195298.018	%	60 - 130%	90	
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	91	
	BH24 0.7-0.8	SE195298.020	%	60 - 130%	91	
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	92	
	BH27 0.7-0.8	SE195298.022	%	60 - 130%	89	
	Dibromofluoromethane (Surrogate)	DUP1	SE195298.023	%	60 - 130%	95
		DUP2	SE195298.024	%	60 - 130%	95
Trip Spike		SE195298.026	%	60 - 130%	83	
Trip Blank		SE195298.027	%	60 - 130%	92	
BH1 0.2-0.3		SE195298.001	%	60 - 130%	94	
BH2 0.4-0.5		SE195298.002	%	60 - 130%	86	
BH4 0.2-0.3		SE195298.003	%	60 - 130%	90	
BH4 0.7-0.8		SE195298.004	%	60 - 130%	83	
BH5 0.2-0.3		SE195298.005	%	60 - 130%	84	
BH5 0.7-0.8		SE195298.006	%	60 - 130%	85	
BH6 0.2-0.3		SE195298.007	%	60 - 130%	87	
BH6 0.7-0.8		SE195298.008	%	60 - 130%	89	
BH7 0.2-0.3	SE195298.009	%	60 - 130%	88		
BH7 0.7-0.8	SE195298.010	%	60 - 130%	84		
BH8 0.2-0.3	SE195298.011	%	60 - 130%	89		
BH10 0.3-0.4	SE195298.012	%	60 - 130%	86		
BH10 0.6-0.7	SE195298.013	%	60 - 130%	87		
BH15 0.3-0.4	SE195298.014	%	60 - 130%	85		
BH15 0.7-0.8	SE195298.015	%	60 - 130%	88		
BH17 0.2-0.3	SE195298.016	%	60 - 130%	86		
BH20 0.2-0.3	SE195298.017	%	60 - 130%	88		
BH20 0.7-0.8	SE195298.018	%	60 - 130%	85		
BH24 0.2-0.3	SE195298.019	%	60 - 130%	90		
BH24 0.7-0.8	SE195298.020	%	60 - 130%	90		
BH27 0.3-0.4	SE195298.021	%	60 - 130%	91		
BH27 0.7-0.8	SE195298.022	%	60 - 130%	86		
DUP1	SE195298.023	%	60 - 130%	90		
DUP2	SE195298.024	%	60 - 130%	90		
Trip Spike	SE195298.026	%	60 - 130%	80		
Trip Blank	SE195298.027	%	60 - 130%	86		

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	96
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	88



Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH4 0.2-0.3	SE195298.003	%	60 - 130%	87
	BH4 0.7-0.8	SE195298.004	%	60 - 130%	83
	BH5 0.2-0.3	SE195298.005	%	60 - 130%	85
	BH5 0.7-0.8	SE195298.006	%	60 - 130%	83
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	87
	BH6 0.7-0.8	SE195298.008	%	60 - 130%	88
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	87
	BH7 0.7-0.8	SE195298.010	%	60 - 130%	88
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	83
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	82
	BH10 0.6-0.7	SE195298.013	%	60 - 130%	85
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	86
	BH15 0.7-0.8	SE195298.015	%	60 - 130%	88
	BH17 0.2-0.3	SE195298.016	%	60 - 130%	88
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	82
	BH20 0.7-0.8	SE195298.018	%	60 - 130%	89
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	87
	BH24 0.7-0.8	SE195298.020	%	60 - 130%	95
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	94
	BH27 0.7-0.8	SE195298.022	%	60 - 130%	93
	DUP1	SE195298.023	%	60 - 130%	97
	DUP2	SE195298.024	%	60 - 130%	98
	d4-1,2-dichloroethane (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%
BH2 0.4-0.5		SE195298.002	%	60 - 130%	92
BH4 0.2-0.3		SE195298.003	%	60 - 130%	92
BH4 0.7-0.8		SE195298.004	%	60 - 130%	87
BH5 0.2-0.3		SE195298.005	%	60 - 130%	92
BH5 0.7-0.8		SE195298.006	%	60 - 130%	88
BH6 0.2-0.3		SE195298.007	%	60 - 130%	93
BH6 0.7-0.8		SE195298.008	%	60 - 130%	93
BH7 0.2-0.3		SE195298.009	%	60 - 130%	95
BH7 0.7-0.8		SE195298.010	%	60 - 130%	96
BH8 0.2-0.3		SE195298.011	%	60 - 130%	91
BH10 0.3-0.4		SE195298.012	%	60 - 130%	90
BH10 0.6-0.7		SE195298.013	%	60 - 130%	91
BH15 0.3-0.4		SE195298.014	%	60 - 130%	93
BH15 0.7-0.8		SE195298.015	%	60 - 130%	96
BH17 0.2-0.3		SE195298.016	%	60 - 130%	95
BH20 0.2-0.3		SE195298.017	%	60 - 130%	90
BH20 0.7-0.8		SE195298.018	%	60 - 130%	96
BH24 0.2-0.3		SE195298.019	%	60 - 130%	96
BH24 0.7-0.8		SE195298.020	%	60 - 130%	91
BH27 0.3-0.4		SE195298.021	%	60 - 130%	91
BH27 0.7-0.8		SE195298.022	%	60 - 130%	89
DUP1		SE195298.023	%	60 - 130%	94
DUP2	SE195298.024	%	60 - 130%	95	
d8-toluene (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	98
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	89
	BH4 0.2-0.3	SE195298.003	%	60 - 130%	90
	BH4 0.7-0.8	SE195298.004	%	60 - 130%	86
	BH5 0.2-0.3	SE195298.005	%	60 - 130%	89
	BH5 0.7-0.8	SE195298.006	%	60 - 130%	87
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	91
	BH6 0.7-0.8	SE195298.008	%	60 - 130%	91
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	91
	BH7 0.7-0.8	SE195298.010	%	60 - 130%	92
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	88
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	86
	BH10 0.6-0.7	SE195298.013	%	60 - 130%	87
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	89
	BH15 0.7-0.8	SE195298.015	%	60 - 130%	90

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

**Volatile Petroleum Hydrocarbons in Soil (continued)**

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	BH17 0.2-0.3	SE195298.016	%	60 - 130%	91
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	85
	BH20 0.7-0.8	SE195298.018	%	60 - 130%	90
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	91
	BH24 0.7-0.8	SE195298.020	%	60 - 130%	91
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	92
	BH27 0.7-0.8	SE195298.022	%	60 - 130%	89
	DUP1	SE195298.023	%	60 - 130%	95
	DUP2	SE195298.024	%	60 - 130%	95
Dibromofluoromethane (Surrogate)	BH1 0.2-0.3	SE195298.001	%	60 - 130%	94
	BH2 0.4-0.5	SE195298.002	%	60 - 130%	86
	BH4 0.2-0.3	SE195298.003	%	60 - 130%	90
	BH4 0.7-0.8	SE195298.004	%	60 - 130%	83
	BH5 0.2-0.3	SE195298.005	%	60 - 130%	84
	BH5 0.7-0.8	SE195298.006	%	60 - 130%	85
	BH6 0.2-0.3	SE195298.007	%	60 - 130%	87
	BH6 0.7-0.8	SE195298.008	%	60 - 130%	89
	BH7 0.2-0.3	SE195298.009	%	60 - 130%	88
	BH7 0.7-0.8	SE195298.010	%	60 - 130%	84
	BH8 0.2-0.3	SE195298.011	%	60 - 130%	89
	BH10 0.3-0.4	SE195298.012	%	60 - 130%	86
	BH10 0.6-0.7	SE195298.013	%	60 - 130%	87
	BH15 0.3-0.4	SE195298.014	%	60 - 130%	85
	BH15 0.7-0.8	SE195298.015	%	60 - 130%	88
	BH17 0.2-0.3	SE195298.016	%	60 - 130%	86
	BH20 0.2-0.3	SE195298.017	%	60 - 130%	88
	BH20 0.7-0.8	SE195298.018	%	60 - 130%	85
	BH24 0.2-0.3	SE195298.019	%	60 - 130%	90
	BH24 0.7-0.8	SE195298.020	%	60 - 130%	90
	BH27 0.3-0.4	SE195298.021	%	60 - 130%	91
	BH27 0.7-0.8	SE195298.022	%	60 - 130%	86
	DUP1	SE195298.023	%	60 - 130%	90
	DUP2	SE195298.024	%	60 - 130%	90

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

**Mercury in Soil**

Method: ME-(AU)-[ENV]JAN312

Sample Number	Parameter	Units	LOR	Result
LB178676.001	Mercury	mg/kg	0.05	<0.05
LB178677.001	Mercury	mg/kg	0.05	<0.05

**OC Pesticides in Soil**

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result
LB178547.001	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Alpha BHC	mg/kg	0.1	<0.1
	Lindane	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	Endrin Aldehyde	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	
Isodrin	mg/kg	0.1	<0.1	
Mirex	mg/kg	0.1	<0.1	
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	94
LB178549.001	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Alpha BHC	mg/kg	0.1	<0.1
	Lindane	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	Endrin Aldehyde	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	
Isodrin	mg/kg	0.1	<0.1	
Mirex	mg/kg	0.1	<0.1	
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	95

**OP Pesticides in Soil**

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result
LB178547.001	Dichlorvos	mg/kg	0.5	<0.5
	Dimethoate	mg/kg	0.5	<0.5
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5
	Fenitrothion	mg/kg	0.2	<0.2
	Malathion	mg/kg	0.2	<0.2

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

OP Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result	
LB178547.001	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	
	Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	
	Bromophos Ethyl	mg/kg	0.2	<0.2	
	Methidathion	mg/kg	0.5	<0.5	
	Ethion	mg/kg	0.2	<0.2	
	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	90
	d14-p-terphenyl (Surrogate)	%	-	96	
LB178549.001	Dichlorvos	mg/kg	0.5	<0.5	
	Dimethoate	mg/kg	0.5	<0.5	
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5	
	Fenitrothion	mg/kg	0.2	<0.2	
	Malathion	mg/kg	0.2	<0.2	
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	
	Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	
	Bromophos Ethyl	mg/kg	0.2	<0.2	
	Methidathion	mg/kg	0.5	<0.5	
	Ethion	mg/kg	0.2	<0.2	
	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	88
	d14-p-terphenyl (Surrogate)	%	-	82	

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result
LB178547.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	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(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-
2-fluorobiphenyl (Surrogate)	%	-	90	
d14-p-terphenyl (Surrogate)	%	-	96	
LB178549.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	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(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB178549.001	Surrogates			
	d5-nitrobenzene (Surrogate)	%	-	86
	2-fluorobiphenyl (Surrogate)	%	-	88
	d14-p-terphenyl (Surrogate)	%	-	82

**PCBs in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB178547.001	Arochlor 1016	mg/kg	0.2	<0.2
	Arochlor 1221	mg/kg	0.2	<0.2
	Arochlor 1232	mg/kg	0.2	<0.2
	Arochlor 1242	mg/kg	0.2	<0.2
	Arochlor 1248	mg/kg	0.2	<0.2
	Arochlor 1254	mg/kg	0.2	<0.2
	Arochlor 1260	mg/kg	0.2	<0.2
	Arochlor 1262	mg/kg	0.2	<0.2
	Arochlor 1268	mg/kg	0.2	<0.2
	Total PCBs (Arochlors)	mg/kg	1	<1
Surrogates				
	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97
LB178549.001	Arochlor 1016	mg/kg	0.2	<0.2
	Arochlor 1221	mg/kg	0.2	<0.2
	Arochlor 1232	mg/kg	0.2	<0.2
	Arochlor 1242	mg/kg	0.2	<0.2
	Arochlor 1248	mg/kg	0.2	<0.2
	Arochlor 1254	mg/kg	0.2	<0.2
	Arochlor 1260	mg/kg	0.2	<0.2
	Arochlor 1262	mg/kg	0.2	<0.2
	Arochlor 1268	mg/kg	0.2	<0.2
	Total PCBs (Arochlors)	mg/kg	1	<1
Surrogates				
	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	95

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES**

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB178671.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0
LB178672.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

**TRH (Total Recoverable Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB178547.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110
LB178549.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

**VOC's in Soil**

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR
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Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result		
LB178536.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1	
		Toluene	mg/kg	0.1	<0.1	
		Ethylbenzene	mg/kg	0.1	<0.1	
		m/p-xylene	mg/kg	0.2	<0.2	
		o-xylene	mg/kg	0.1	<0.1	
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1	
		Surrogates	Dibromofluoromethane (Surrogate)	%	-	90
	d4-1,2-dichloroethane (Surrogate)		%	-	90	
	d8-toluene (Surrogate)		%	-	89	
	Bromofluorobenzene (Surrogate)		%	-	85	
	Totals	Total BTEX	mg/kg	0.6	<0.6	
	LB178537.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
			Toluene	mg/kg	0.1	<0.1
Ethylbenzene			mg/kg	0.1	<0.1	
m/p-xylene			mg/kg	0.2	<0.2	
o-xylene			mg/kg	0.1	<0.1	
Polycyclic VOCs		Naphthalene	mg/kg	0.1	<0.1	
		Surrogates	Dibromofluoromethane (Surrogate)	%	-	98
d4-1,2-dichloroethane (Surrogate)			%	-	99	
d8-toluene (Surrogate)			%	-	100	
Bromofluorobenzene (Surrogate)			%	-	101	
Totals		Total BTEX	mg/kg	0.6	<0.6	

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	
LB178536.001	Surrogates	TRH C6-C9	mg/kg	20	<20
		Dibromofluoromethane (Surrogate)	%	-	90
		d4-1,2-dichloroethane (Surrogate)	%	-	90
		d8-toluene (Surrogate)	%	-	89
LB178537.001	Surrogates	TRH C6-C9	mg/kg	20	<20
		Dibromofluoromethane (Surrogate)	%	-	98
		d4-1,2-dichloroethane (Surrogate)	%	-	99
		d8-toluene (Surrogate)	%	-	100

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195242.010	LB178676.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE195298.008	LB178676.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE195298.018	LB178677.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195242.010	LB178564.011	% Moisture	%w/w	0.5	8.8	10	40	15
SE195298.010	LB178555.011	% Moisture	%w/w	0.5	6.3	6.3	46	1
SE195298.019	LB178555.021	% Moisture	%w/w	0.5	5.2	5.2	49	1
SE195298.027	LB178564.019	% Moisture	%w/w	0.5	<0.5	<0.5	200	0

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE195298.009	LB178547.026	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0	
		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0	
		Lindane	mg/kg	0.1	<0.1	<0.1	200	0	
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0	
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0	
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0	
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0	
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0	
		o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0	
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0	
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0	
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0	
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0	
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0	
		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0	
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0	
		o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0	
		o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0	
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0	
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0	
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0	
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0	
		Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0	
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0	
		Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0	
		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0	
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0	
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0	
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	30	4

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE195298.009	LB178547.026	Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0	
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0	
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0	
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0	
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0	
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0	
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0	
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0	
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0	
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0	
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0	
		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0	
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	7
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	4
SE195298.016	LB178547.027	Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0	
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0	
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0	

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OP Pesticides in Soil (continued)

Method: ME-(AU)-IENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195298.016	LB178547.027	Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4
d14-p-terphenyl (Surrogate)	mg/kg			-	0.5	0.4	30	16

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-IENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195242.010	LB178549.014	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	0.6	0.6	46	3
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0		
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	159	0		
Surrogates		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	7
SE195298.009	LB178547.026	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0		
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0		



Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE195298.009	LB178547.026	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	7
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	4
SE195298.016	LB178547.027		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
	Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0		
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	5	
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	5	
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	16	

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE195298.009	LB178547.026		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
			Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE195242.010	LB178671.014		Arsenic, As	mg/kg	1	3	3	66	17
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.3	9.3	11	35	18
			Copper, Cu	mg/kg	0.5	4.6	5.5	40	18
			Nickel, Ni	mg/kg	0.5	4.6	5.7	40	22
			Lead, Pb	mg/kg	1	8	9	42	11
			Zinc, Zn	mg/kg	2	26	29	37	11
SE195298.008	LB178671.024		Arsenic, As	mg/kg	1	15	15	37	2
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.3	15	15	33	5
			Copper, Cu	mg/kg	0.5	17	17	33	1
			Nickel, Ni	mg/kg	0.5	9.7	9.7	35	0
			Lead, Pb	mg/kg	1	12	13	38	6
			Zinc, Zn	mg/kg	2	28	29	37	2
SE195298.018	LB178672.014		Arsenic, As	mg/kg	1	16	15	36	5
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.3	14	20	33	35 @

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)**

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195298.018	LB178672.014	Copper, Cu	mg/kg	0.5	10	10	35	2
		Nickel, Ni	mg/kg	0.5	10	11	35	7
		Lead, Pb	mg/kg	1	9	11	40	20
		Zinc, Zn	mg/kg	2	25	27	38	8

**TRH (Total Recoverable Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE195242.010	LB178549.014	TRH C10-C14	mg/kg	20	100	100	50	0	
		TRH C15-C28	mg/kg	45	1900	2000	32	7	
		TRH C29-C36	mg/kg	45	<45	<45	200	0	
		TRH C37-C40	mg/kg	100	<100	<100	200	0	
		TRH C10-C36 Total	mg/kg	110	2000	2100	35	6	
		TRH C10-C40 Total (F bands)	mg/kg	210	2000	2100	40	6	
		TRH F Bands	TRH >C10-C16	mg/kg	25	340	350	37	3
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	340	350	37	3	
		TRH >C16-C34 (F3)	mg/kg	90	1700	1800	35	7	
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0	
SE195298.009	LB178547.026	TRH C10-C14	mg/kg	20	<20	<20	200	0	
		TRH C15-C28	mg/kg	45	<45	<45	200	0	
		TRH C29-C36	mg/kg	45	<45	<45	200	0	
		TRH C37-C40	mg/kg	100	<100	<100	200	0	
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0	
		TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0	
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0	
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0	
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0	
SE195298.016	LB178547.027	TRH C10-C14	mg/kg	20	<20	<20	200	0	
		TRH C15-C28	mg/kg	45	<45	<45	200	0	
		TRH C29-C36	mg/kg	45	<45	<45	200	0	
		TRH C37-C40	mg/kg	100	<100	<100	200	0	
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0	
		TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0	
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0	
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0	
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0	

**VOC's in Soil**

Method: ME-(AU)-[ENV]AN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %			
SE195242.010	LB178537.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0		
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0		
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0		
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0		
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0		
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0		
			Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.2	5.3	50	2	
		d4-1,2-dichloroethane (Surrogate)		mg/kg	-	4.9	5.0	50	2		
		d8-toluene (Surrogate)		mg/kg	-	4.8	5.0	50	4		
		Bromofluorobenzene (Surrogate)		mg/kg	-	4.8	6.2	50	25		
		Totals		Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0	
		Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0			
		SE195298.010	LB178536.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
					Toluene	mg/kg	0.1	<0.1	<0.1	200	0
Ethylbenzene	mg/kg				0.1	<0.1	<0.1	200	0		
m/p-xylene	mg/kg				0.2	<0.2	<0.2	200	0		
o-xylene	mg/kg				0.1	<0.1	<0.1	200	0		
Polycyclic	Naphthalene			mg/kg	0.1	<0.1	<0.1	200	0		
	Surrogates			Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	4.5	50	7	
d4-1,2-dichloroethane (Surrogate)				mg/kg	-	4.8	5.3	50	9		
d8-toluene (Surrogate)				mg/kg	-	4.6	4.7	50	1		
Bromofluorobenzene (Surrogate)				mg/kg	-	4.4	4.4	50	0		

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula:  $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times SDL / Mean + LR$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-IENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195298.010	LB178536.014	Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE195298.019	LB178536.024	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.5	4.9	50
		d4-1,2-dichloroethane (Surrogate)		mg/kg	-	4.8	5.2	50	8
		d8-toluene (Surrogate)		mg/kg	-	4.6	4.9	50	7
		Bromofluorobenzene (Surrogate)		mg/kg	-	4.4	4.7	50	8
		Totals		Total Xylenes	mg/kg	0.3	<0.3	<0.3	200
		Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0	

Volatle Petroleum Hydrocarbons in Soil

Method: ME-(AU)-IENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE195242.010	LB178537.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.2	5.3	30	2
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.9	5.0	30	2
			d8-toluene (Surrogate)	mg/kg	-	4.8	5.0	30	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.8	6.2	30	25
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE195298.010	LB178536.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	4.5	30	7
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.8	5.3	30	9
			d8-toluene (Surrogate)	mg/kg	-	4.6	4.7	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.4	30	0
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE195298.019	LB178536.024		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.5	4.9	30	9
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.8	5.2	30	8
			d8-toluene (Surrogate)	mg/kg	-	4.6	4.9	30	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.7	30	8
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

**Mercury in Soil**

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB178676.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	110
LB178677.002	Mercury	mg/kg	0.05	0.20	0.2	70 - 130	101

**OC Pesticides in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB178547.002	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	79
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	90
	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	81
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	88
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	85
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	78
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	40 - 130	97
LB178549.002	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	82
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	95
	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	76
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	86
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	77
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	40 - 130	97

**OP Pesticides in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB178547.002	Dichlorvos	mg/kg	0.5	2.5	2	60 - 140	125
	Diazinon (Dimpylate)	mg/kg	0.5	2.2	2	60 - 140	112
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.2	2	60 - 140	108
	Ethion	mg/kg	0.2	2.1	2	60 - 140	107
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130
LB178549.002	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90
	Dichlorvos	mg/kg	0.5	2.2	2	60 - 140	108
	Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	100
	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	88
	Ethion	mg/kg	0.2	1.8	2	60 - 140	90
Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84

**PAH (Polynuclear Aromatic Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB178547.002	Naphthalene	mg/kg	0.1	3.9	4	60 - 140	99	
	Acenaphthylene	mg/kg	0.1	4.3	4	60 - 140	107	
	Acenaphthene	mg/kg	0.1	4.2	4	60 - 140	104	
	Phenanthrene	mg/kg	0.1	4.2	4	60 - 140	105	
	Anthracene	mg/kg	0.1	4.0	4	60 - 140	99	
	Fluoranthene	mg/kg	0.1	3.9	4	60 - 140	97	
	Pyrene	mg/kg	0.1	4.0	4	60 - 140	100	
	Benzo(a)pyrene	mg/kg	0.1	4.4	4	60 - 140	109	
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86
LB178549.002	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90	
	Naphthalene	mg/kg	0.1	4.2	4	60 - 140	105	
	Acenaphthylene	mg/kg	0.1	4.4	4	60 - 140	110	
	Acenaphthene	mg/kg	0.1	4.4	4	60 - 140	109	
	Phenanthrene	mg/kg	0.1	4.5	4	60 - 140	113	
	Anthracene	mg/kg	0.1	4.2	4	60 - 140	105	
	Fluoranthene	mg/kg	0.1	4.2	4	60 - 140	104	
	Pyrene	mg/kg	0.1	4.4	4	60 - 140	110	
	Benzo(a)pyrene	mg/kg	0.1	4.4	4	60 - 140	110	
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	90
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84	
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84	

**PCBs in Soil**

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR
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Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB178547.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	103
LB178549.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	108

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB178671.002	Arsenic, As	mg/kg	1	340	336.32	79 - 120	102
	Cadmium, Cd	mg/kg	0.3	430	416.6	69 - 131	103
	Chromium, Cr	mg/kg	0.3	38	35.2	80 - 120	107
	Copper, Cu	mg/kg	0.5	320	370.46	80 - 120	87
	Nickel, Ni	mg/kg	0.5	190	210.88	79 - 120	88
	Lead, Pb	mg/kg	1	91	107.87	79 - 120	84
	Zinc, Zn	mg/kg	2	290	301.27	80 - 121	95
LB178672.002	Arsenic, As	mg/kg	1	320	336.32	79 - 120	96
	Cadmium, Cd	mg/kg	0.3	420	416.6	69 - 131	102
	Chromium, Cr	mg/kg	0.3	34	35.2	80 - 120	97
	Copper, Cu	mg/kg	0.5	310	370.46	80 - 120	84
	Nickel, Ni	mg/kg	0.5	180	210.88	79 - 120	85
	Lead, Pb	mg/kg	1	88	107.87	79 - 120	82
	Zinc, Zn	mg/kg	2	270	301.27	80 - 121	91

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB178547.002	TRH C10-C14	mg/kg	20	45	40	60 - 140	113	
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	100	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	78	
	TRH F Bands	TRH >C10-C16	mg/kg	25	43	40	60 - 140	108
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	90	
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	70	
LB178549.002	TRH C10-C14	mg/kg	20	45	40	60 - 140	113	
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	105	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	105	
	TRH F Bands	TRH >C10-C16	mg/kg	25	44	40	60 - 140	110
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	98	
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	120	

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB178536.002	Monocyclic	Benzene	mg/kg	0.1	2.2	2.9	60 - 140	74
		Aromatic	Toluene	mg/kg	0.1	2.2	2.9	60 - 140
	Ethylbenzene		mg/kg	0.1	2.2	2.9	60 - 140	76
	m/p-xylene		mg/kg	0.2	4.5	5.8	60 - 140	78
	o-xylene		mg/kg	0.1	2.2	2.9	60 - 140	76
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.5	5	60 - 140	89
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.7	5	60 - 140	94
		d8-toluene (Surrogate)	mg/kg	-	4.6	5	60 - 140	92
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	5	60 - 140	88
	LB178537.002	Monocyclic	Benzene	mg/kg	0.1	2.0	2.9	60 - 140
Aromatic			Toluene	mg/kg	0.1	1.8	2.9	60 - 140
		Ethylbenzene	mg/kg	0.1	2.0	2.9	60 - 140	69
		m/p-xylene	mg/kg	0.2	4.0	5.8	60 - 140	69
		o-xylene	mg/kg	0.1	2.0	2.9	60 - 140	68
Surrogates		Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	5	60 - 140	84
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.7	5	60 - 140	93
		d8-toluene (Surrogate)	mg/kg	-	4.3	5	60 - 140	85
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.9	5	60 - 140	98

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB178536.002	TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	91	
		mg/kg	20	21	23.2	60 - 140	92	
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.5	5	60 - 140	89
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.7	5	60 - 140	94

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB178536.002	Surrogates	d8-toluene (Surrogate)	mg/kg	-	4.6	5	60 - 140	92
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	5	60 - 140	88
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	127
LB178537.002	Surrogates	TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	77
		TRH C6-C9	mg/kg	20	<20	23.2	60 - 140	79
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	5	60 - 140	84
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.7	5	60 - 140	93
		d8-toluene (Surrogate)	mg/kg	-	4.3	5	60 - 140	85
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.9	5	60 - 140	98
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	99

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195242.001	LB178676.004	Mercury	mg/kg	0.05	0.22	<0.05	0.2	104
SE195298.009	LB178677.004	Mercury	mg/kg	0.05	0.19	<0.05	0.2	91

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195298.001	LB178547.025	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Lindane	mg/kg	0.1	<0.1	<0.1	-	-
		Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	90
		Aldrin	mg/kg	0.1	0.2	<0.1	0.2	93
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	81
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	92
		Endrin	mg/kg	0.2	<0.2	<0.2	0.2	90
		o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	76
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin Ketone	mg/kg	0.1	<0.1	<0.1	-	-
		Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
		Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14	-	97

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195298.001	LB178547.025	Dichlorvos	mg/kg	0.5	2.1	<0.5	2	105
		Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
		Diazinon (Dimpylate)	mg/kg	0.5	2.2	<0.5	2	108
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
		Malathion	mg/kg	0.2	<0.2	<0.2	-	-
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.1	<0.2	2	107
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
		Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
		Ethion	mg/kg	0.2	2.1	<0.2	2	106
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
		Total OP Pesticides*	mg/kg	1.7	8.5	<1.7	-	-
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195242.001	LB178549.023	Naphthalene	mg/kg	0.1	3.9	<0.1	4	99
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.0	<0.1	4	101
		Acenaphthene	mg/kg	0.1	4.2	<0.1	4	105
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.1	<0.1	4	103

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE195242.001	LB178549.023	Anthracene	mg/kg	0.1	3.8	<0.1	4	95	
		Fluoranthene	mg/kg	0.1	3.9	<0.1	4	97	
		Pyrene	mg/kg	0.1	4.1	<0.1	4	101	
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-	
		Chrysene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(a)pyrene	mg/kg	0.1	4.3	<0.1	4	107	
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-	
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	4.3	<0.2	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.4	<0.3	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.3	<0.2	-	-	
		Total PAH (18)	mg/kg	0.8	32	<0.8	-	-	
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	86
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	84
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	88
SE195298.001	LB178547.025	Naphthalene	mg/kg	0.1	4.3	<0.1	4	106	
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-	
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-	
		Acenaphthylene	mg/kg	0.1	4.6	<0.1	4	115	
		Acenaphthene	mg/kg	0.1	4.2	<0.1	4	104	
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-	
		Phenanthrene	mg/kg	0.1	4.5	<0.1	4	113	
		Anthracene	mg/kg	0.1	4.3	<0.1	4	108	
		Fluoranthene	mg/kg	0.1	4.2	<0.1	4	105	
		Pyrene	mg/kg	0.1	4.4	<0.1	4	110	
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-	
		Chrysene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(a)pyrene	mg/kg	0.1	4.7	<0.1	4	118	
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-	
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-	
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	4.7	<0.2	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.9	<0.3	-	-	
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.8	<0.2	-	-	
		Total PAH (18)	mg/kg	0.8	35	<0.8	-	-	
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	-	94
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	88
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	86		

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE195298.001	LB178547.025	Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-	
		Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-	
		Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-	
		Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-	
		Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-	
		Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-	
		Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	105	
		Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-	
		Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-	
		Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-	
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-	97

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR
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Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

**Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)**

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE195242.001	LB178671.004	Arsenic, As	mg/kg	1	49	4	50	90
		Cadmium, Cd	mg/kg	0.3	47	<0.3	50	94
		Chromium, Cr	mg/kg	0.3	59	12	50	94
		Copper, Cu	mg/kg	0.5	56	6.3	50	99
		Nickel, Ni	mg/kg	0.5	54	6.6	50	95
		Lead, Pb	mg/kg	1	55	9	50	92
SE195298.009	LB178672.004	Zinc, Zn	mg/kg	2	67	21	50	94
		Arsenic, As	mg/kg	1	52	7	50	90
		Cadmium, Cd	mg/kg	0.3	47	<0.3	50	94
		Chromium, Cr	mg/kg	0.3	54	6.8	50	95
		Copper, Cu	mg/kg	0.5	56	6.1	50	101
		Nickel, Ni	mg/kg	0.5	50	3.2	50	94
		Lead, Pb	mg/kg	1	53	8	50	91
		Zinc, Zn	mg/kg	2	65	16	50	96

**TRH (Total Recoverable Hydrocarbons) in Soil**

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE195242.001	LB178549.023	TRH C10-C14	mg/kg	20	26	<20	40	65	
		TRH C15-C28	mg/kg	45	<45	<45	40	83	
		TRH C29-C36	mg/kg	45	<45	<45	40	100	
		TRH C37-C40	mg/kg	100	<100	<100	-	-	
		TRH C10-C36 Total	mg/kg	110	<110	<110	-	-	
		TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-	
		TRH F Bands	TRH >C10-C16	mg/kg	25	31	<25	40	78
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	31	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	93
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE195298.001	LB178547.025	TRH C10-C14	mg/kg	20	42	<20	40	105	
		TRH C15-C28	mg/kg	45	<45	<45	40	103	
		TRH C29-C36	mg/kg	45	<45	<45	40	95	
		TRH C37-C40	mg/kg	100	<100	<100	-	-	
		TRH C10-C36 Total	mg/kg	110	<110	<110	-	-	
		TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-	
		TRH F Bands	TRH >C10-C16	mg/kg	25	41	<25	40	103
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	41	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	108
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

**VOC's in Soil**

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%			
SE195242.001	LB178537.004	Monocyclic	Benzene	mg/kg	0.1	2.1	<0.1	2.9	71		
			Aromatic	Toluene	mg/kg	0.1	2.2	<0.1	2.9	74	
		Ethylbenzene		mg/kg	0.1	2.2	<0.1	2.9	75		
		m/p-xylene		mg/kg	0.2	4.4	<0.2	5.8	76		
		o-xylene		mg/kg	0.1	2.2	<0.1	2.9	76		
		Polycyclic		Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-	
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.5	4.1	-	90		
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.6	4.2	-	91		
			d8-toluene (Surrogate)	mg/kg	-	4.6	4.2	-	91		
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.6	4.3	-	91		
		Totals	Total Xylenes	mg/kg	0.3	6.7	<0.3	-	-		
			Total BTEX	mg/kg	0.6	13	<0.6	-	-		
		SE195298.001	LB178536.004	Monocyclic	Benzene	mg/kg	0.1	2.1	<0.1	2.9	73
					Aromatic	Toluene	mg/kg	0.1	2.1	<0.1	2.9
Ethylbenzene	mg/kg			0.1		2.1	<0.1	2.9	73		
m/p-xylene	mg/kg			0.2		4.4	<0.2	5.8	75		
o-xylene	mg/kg			0.1		2.1	<0.1	2.9	73		
Polycyclic	Naphthalene			mg/kg		0.1	<0.1	<0.1	-	-	
Surrogates	Dibromofluoromethane (Surrogate)			mg/kg	-	4.5	4.7	-	91		
	d4-1,2-dichloroethane (Surrogate)			mg/kg	-	4.9	5.0	-	97		
	d8-toluene (Surrogate)			mg/kg	-	4.7	4.9	-	93		
	Bromofluorobenzene (Surrogate)			mg/kg	-	4.5	4.8	-	90		

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE195298.001	LB178536.004	Totals	Total Xylenes	mg/kg	0.3	6.5	<0.3	-	-
			Total BTEX	mg/kg	0.6	13	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%			
SE195242.001	LB178537.004	TRH C6-C10	TRH C6-C10	mg/kg	25	<25	<25	24.65	93		
			TRH C6-C9	mg/kg	20	22	<20	23.2	96		
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.5	4.1	-	90		
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.6	4.2	-	91		
			d8-toluene (Surrogate)	mg/kg	-	4.6	4.2	-	91		
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.6	4.3	-	91		
		VPH F	Benzene (F0)	mg/kg	0.1	2.1	<0.1	-	-		
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	135		
		SE195298.001	LB178536.004	TRH C6-C10	TRH C6-C10	mg/kg	25	<25	<25	24.65	91
					TRH C6-C9	mg/kg	20	21	<20	23.2	91
Surrogates	Dibromofluoromethane (Surrogate)			mg/kg	-	4.5	4.7	-	91		
	d4-1,2-dichloroethane (Surrogate)			mg/kg	-	4.9	5.0	-	97		
	d8-toluene (Surrogate)			mg/kg	-	4.7	4.9	-	93		
	Bromofluorobenzene (Surrogate)			mg/kg	-	4.5	4.8	-	90		
VPH F	Benzene (F0)			mg/kg	0.1	2.1	<0.1	-	-		
Bands	TRH C6-C10 minus BTEX (F1)			mg/kg	25	<25	<25	7.25	131		

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula:  $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula:  $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: [https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022\\_QA\\_QC\\_Plan.pdf](https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022_QA_QC_Plan.pdf)

- \* NATA accreditation does not cover the performance of this service .
  - \*\* Indicative data, theoretical holding time exceeded.
  - Sample not analysed for this analyte.
  - IS Insufficient sample for analysis.
  - LNR Sample listed, but not received.
  - LOR Limit of reporting.
  - QFH QC result is above the upper tolerance.
  - QFL QC result is below the lower tolerance.
- 
- ① At least 2 of 3 surrogates are within acceptance criteria.
  - ② RPD failed acceptance criteria due to sample heterogeneity.
  - ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
  - ④ Recovery failed acceptance criteria due to matrix interference.
  - ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
  - ⑥ LOR was raised due to sample matrix interference.
  - ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
  - ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
  - ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
  - ⑩ LOR was raised due to high conductivity of the sample (required dilution).
  - † Refer to Analytical Report comments for further information.

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## CHAIN OF CUSTODY & ANALYSIS REQUEST

**SGS Environmental Services**  
 Unit 16, 33 Maddox Street  
 Alexandria NSW 2015  
 Telephone No: (02) 85940400  
 Facsimile No: (02) 85940499

Email: [au.samplerreceipt.sydney@sgs.com](mailto:au.samplerreceipt.sydney@sgs.com)

Company Name: <u>Valley Civilab</u>	Project Name/No: <u>P1834</u>
Address: <u>3/62 Sandringham Avenue Thornton 2322</u>	Purchase Order No: <u>VC: 04343</u>
Contact Name: <u>Malcolm Adrien</u>	Results Required By: <u>5 day TAT</u>
	Telephone: <u>0499 151 225</u>
	Facsimile: _____
	Email Results: <u><a href="mailto:malcolm.adrien@vclab.com.au">malcolm.adrien@vclab.com.au</a>; <a href="mailto:jake.duck@vclab.com.au">jake.duck@vclab.com.au</a>; <a href="mailto:monica.esposito@vclab.com.au">monica.esposito@vclab.com.au</a></u>

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL17	CL10	HOLD																
BH1 0.2-0.3	10/7/2019	1		X		1	X																		
BH2 0.4-0.5	10/7/2019	2		X		1	X																		
BH4 0.2-0.3	10/7/2019	3		X		1	X																		
BH4 0.7-0.8	10/7/2019	4		X		1		X																	
BH5 0.2-0.3	10/7/2019	5		X		1	X																		
BH5 0.7-0.8	10/7/2019	6		X		1		X																	
BH5 1.4-1.5	10/7/2019			X		1			X																
BH6 0.2-0.3	10/7/2019	87		X		1	X																		
BH6 0.7-0.8	10/7/2019	8		X		1		X																	
BH7 0.2-0.3	10/7/2019	9		X		1	X																		

**SGS EHS Alexandria Laboratory**

**SE195298 COC**  
 Received: 12-Jul-2019

Relinquished By: <u>[Signature]</u>	Date/Time: <u>11/7/19</u>	Received By: <u>[Signature]</u>	Date/Time: <u>12/7 11 a</u>
Relinquished By: _____	Date/Time: _____	Received By: _____	Date/Time: _____
Samples Intact: <u>Yes</u> / No	Temperature: Ambient / <u>Chilled</u>	Sample Cooler Sealed: <u>Yes</u> / No	Laboratory Quotation No: _____

Comments: \_\_\_\_\_



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**Alexandria NSW 2015**  
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Company Name:	Valley Civilab	Project Name/No:	P1834
Address:	3/62 Sandringham Avenue Thornton 2322	Purchase Order No:	VC: 04343
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		Telephone:	0499 151 225
		Facsimile:	
		Email Results:	<a href="mailto:malcolm.adrien@vclab.com.au">malcolm.adrien@vclab.com.au</a> ; <a href="mailto:jake.duck@vclab.com.au">jake.duck@vclab.com.au</a> ; <a href="mailto:monica.esposito@vclab.com.au">monica.esposito@vclab.com.au</a>

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL17	CL10	HOLD											
BH7 0.7-0.8	10/7/2019	10		X		1		X												
BH7 1.5-1.6	10/7/2019			X		1			X											
BH8 0.2-0.3	10/7/2019	11		X		1	X													
BH10 0.3-0.4	10/7/2019	12		X		1	X													
BH10 0.6-0.7	10/7/2019	13		X		1		X												
BH15 0.3-0.4	10/7/2019	14		X		1	X													
BH15 0.7-0.8	10/7/2019	15		X		1		X												
BH16 0.2-0.3	10/7/2019			X		1			X											
BH16 0.7-0.8	10/7/2019			X		1			X											
BH17 0.2-0.3	10/7/2019	16		X		1	X													

Relinquished By: <i>[Signature]</i>	Date/Time: 11/7/19	Received By: <i>[Signature]</i>	Date/Time: 12/7 11am
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: <input checked="" type="radio"/> Yes / <input type="radio"/> No	Temperature: Ambient / <input checked="" type="radio"/> Chilled	Sample Cooler Sealed: <input checked="" type="radio"/> Yes / <input type="radio"/> No	Laboratory Quotation No:

Comments:



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Company Name: Valley Civilab	Project Name/No: P1834
Address: 3/62 Sandringham Avenue Thornton 2322	Purchase Order No: VC: 04343
Contact Name: Malcolm Adrien	Results Required By: 5 day TAT
	Telephone: 0499 151 225
	Facsimile:
	Email Results: <a href="mailto:malcolm.adrien@vclab.com.au">malcolm.adrien@vclab.com.au</a> ; <a href="mailto:jake.duck@vclab.com.au">jake.duck@vclab.com.au</a> ; <a href="mailto:monica.esposito@vclab.com.au">monica.esposito@vclab.com.au</a>

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL17	CL10	HOLD											
BH20 0.2-0.3	10/7/2019	17		X		1	X													
BH20 0.7-0.8	10/7/2019	18		X		1		X												
BH22 0.2-0.3	10/7/2019			X		1			X											
BH22 0.7-0.8	10/7/2019			X		1			X											
BH23 0.2-0.3	10/7/2019			X		1			X											
BH23 0.7-0.8	10/7/2019			X		1			X											
BH24 0.2-0.3	10/7/2019	19		X		1	X													
BH24 0.7-0.8	10/7/2019	20		X		1		X												
BH27 0.3-0.4	10/7/2019	21		X		1	X													
BH27 0.7-0.8	10/7/2019	22		X		1		X												

Relinquished By:	Date/Time: 11/7/19	Received By: Emily	Date/Time: 12/7 11am
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: <input checked="" type="radio"/> Yes / <input type="radio"/> No	Temperature: Ambient / <input checked="" type="radio"/> Chilled	Sample Cooler Sealed: <input checked="" type="radio"/> Yes / <input type="radio"/> No	Laboratory Quotation No:
Comments:			



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 Email: [au.samplerreceipt.sydney@sgs.com](mailto:au.samplerreceipt.sydney@sgs.com)

Company Name: Valley Civilab Project Name/No: P1834  
 Address: 3/62 Sandringham Avenue Thornton 2322 Purchase Order No: VC: 04343  
 Results Required By: 5 day TAT  
 Telephone: 0499 151 225  
 Contact Name: Malcolm Adrien Facsimile:  
 Email Results: [malcolm.adrien@vclab.com.au](mailto:malcolm.adrien@vclab.com.au); [jake.duck@vclab.com.au](mailto:jake.duck@vclab.com.au); [monica.esposito@vclab.com.au](mailto:monica.esposito@vclab.com.au)

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL17	CL10	Metals											
BH31 0.2-0.3	10/7/2019			x		1														
DUP1	10/7/2019	23		x		1		x												
DUP2	10/7/2019	24		x		1		x												
RINS	10/7/2019	25	x			1			x											
Trip Spike		26		x		1			x											
Trip Blank		27		x		1			x											

Relinquished By: [Signature] Date/Time: 11/7/19 Received By: Emily Y Date/Time: 12/7 11am  
 Relinquished By: Date/Time: Received By: Date/Time:  
 Samples Intact: Yes No Temperature: Ambient / Chilled Sample Cooler Sealed: Yes No Laboratory Quotation No:  
 Comments:





# Annex I



**Photograph 1: Site looking North**



**Photograph 2: Site looking Northwest**



**Photograph 3: Dam located south eastern corner of site.**



**Photograph 4: Eastern Site boundary adjacent to residential.**