ACT Geotechnical Engineers Pty Ltd

SOUTHERN REGION LAND ENGINEERING

PROPOSED RESIDENTIAL DEVELOPMENT
BRISBANE GROVE RURAL SUBDIVISION
GOULBURN NSW

PRELIMINARY SITE INVESTIGATION REPORT

NOVEMBER 2022

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18 November 2022
Our ref: SM/C11822

Southern Region Land Engineering
Via email: gregtodd.srle@gmail.com

Attention: Greg Todd

Dear Sir

PROPOSED RESIDENTIAL DEVELOPMENT
BRISBANE GROVE RURAL SUBDIVISION
ROSEMONT ROAD & MOUNTAIN ASH ROAD, GOULBURN, NSW

PRELIMINARY SITE INVESTIGATION REPORT

We are pleased to present our preliminary site contamination report for the proposed rural residential development at Lot 1 DP835278, Lot 1 DP779194, Lot 103 DP70346, Lot 104 DP126140, Lot 105 DP126140, Lot 106 DP126140, Lot 1 DP853498, Lot 1 DP731427, Lot 2 DP835278, Lot 3 DP835278, Lot 22 DP811954, Lot 23 DP811954 and Lot 24 DP811954 of Rosemount Road and Mountain Ash Road, in Goulburn, NSW.

Southern Region Land Engineering engaged ACT Geotechnical Engineers to undertake a preliminary (Phase 1) site investigation (PSI) with soil sampling of the above mentioned lot at Rosemont Road and Mountain Ash Road, in Goulburn, NSW for the proposed rural residential subdivision development. The investigation area was approximately 240ha.

The objective of this investigation was to assess the site for potentially contaminating activities that may have occurred on the site or on adjacent properties that may affect the suitability of the site for the proposed development.

The scope of the investigation included the advancement of ten (10) boreholes across the site to a maximum depth of 1.5m was obtained. The boreholes locations showing in Figure 2.

A summary of the results of this investigation is provided below:

- Based on a review of the site history.
- No fill material was encountered at the investigated borehole locations.
- The natural material beneath the topsoil comprised of medium plasticity, yellow brown, red brown color sandy clay, with fine to very fine, sub-angular to angular gravel.
- No anthropogenic material (including asbestos) and no olfactory indicators of contamination were noted during sampling. No hydrocarbon odours or staining were observed in the soil from the boreholes.
- Concentrations of Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), Organochlorine Pesticides (OCP), Heavy Metals and asbestos in the samples analysed were below the laboratory limit of reporting and therefore below the adopted assessment criteria.
- The level of analytes evaluated in the soil samples were very low, below detection limits or less than the NEPC (1999) thresholds for residential uses.

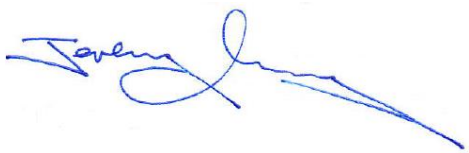
Based on the results of this investigation, the site is considered suitable for all the permissible land uses under the B3: residential use, including the proposed development from a contamination perspective.

While it is unlikely that contamination may be encountered during future construction works, it is recommended that an unexpected finds protocol (UFP), with management procedures for asbestos, is implemented prior to construction works commencing. The UFP will assist the construction contractor with identifying and managing any unexpected occurrences of contaminated material.

This investigation has not been completed with the intention of removing soil from the site. Should the removal of soil be necessary, then a soil classification report must be submitted to the EPA in accordance with the requirements of Information Sheet 4 'Requirements for the Reuse and Disposal of Contaminated Soil.

Should you require any further information regarding this report, please do not hesitate to contact our office.

Yours faithfully
ACT Geotechnical Engineers Pty Ltd



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PROPOSED RESIDENTIAL DEVELOPMENT
BRISBANE GROVE RURAL SUBDIVISION
ROSEMONT ROAD & MOUNTAIN ASH ROAD, GOULBURN, NSW

PRELIMINARY SITE INVESTIGATION REPORT

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ROSEMONT ROAD & MOUNTAIN ASH ROAD, GOULBURN, NSW

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PRELIMINARY SITE INVESTIGATION REPORT

1. Introduction

At the request of the Southern Region Land Engineering, ACT Geotechnical Engineers Pty Ltd carried out a preliminary site investigation for a proposed rural residential subdivision development in Lot 1 DP835278, Lot 1 DP779194, Lot 103 DP70346, Lot 104 DP126140, Lot 105 DP126140, Lot 106 DP126140, Lot 1 DP853498, Lot 1 DP731427, Lot 2 DP835278, Lot 3 DP835278, Lot 22 DP811954, Lot 23 DP811954 and Lot 24 DP811954 at Rosemount Road and Mountain Ash Road, in Goulburn, NSW. The proposed land-use will residential land-use. Southern Region Land Engineering have requested a contamination assessment to determine the current soil contamination status and confirm suitability for proposed residential land-use for due diligences prior to proposed development.

2. Scope of work

ACT Geotechnical Engineer Pty Ltd was commissioned by Southern Region Land Engineering to undertake a preliminary contamination investigation in accordance with the contaminated land management planning guidelines, from the *Contaminated Land Management Act 1997* and the *State Environmental Policy No. 55 (SEPP 55)* on the proposed rural residential subdivision development at Rosemount Road and Mountain Ash Road, in Goulburn, NSW. The objective was to identify potentially contaminating activities of the lot, identify potential contamination types, discuss the site condition, provide a preliminary assessment of possible site contamination and assess the need for further investigation.

The investigation was completed by experienced engineering geologist of ACT Geotechnical Engineers Pty Ltd. The scope of work completed as a part of the environmental investigation was as follows:

- Perform a site visit to characterise the property setting, including inspection of the site surface for obvious and visible signs of potential contamination and / or contaminant sources.
- A visual evaluation of surrounding land uses to identify any neighbouring activities which may present a potential risk to health of future occupants and the overall environmental quality of the site.
- An evaluation of historical and aerial photographs to assist in assessing historical land uses and conditions both on and adjacent to the site.
- A review of the environmental setting with regards to geology, topography, hydrology, and hydrogeology.
- Undertake an intrusive site investigation across the site including advancing ten (10) boreholes for soil sampling within the site.
- Soil samples were collected from the surface to 1m below ground level (bgl). The target depth was 1.5m unless fill material was encountered whereby the hole would be extended to the natural soil.
- Undertake soil analysis at a National Associated of Testing Authorities (NATA) accredited laboratory for the analyses of the following contaminants of potential concern (COPC):

- Total recoverable hydrocarbons (TRH);
- Benzene, toluene, ethylbenzene, xylenes (BTEX);
- Organochlorine pesticides (OCP);
- Polychlorinated biphenyls (PCBs);
- Phenols;
- Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc);
- Asbestos
- Assess laboratory results obtained from the investigation against the applicable land use criteria.
- Prepare a detailed investigation report presenting the results of the investigation.

The findings of the report are based on the Scope of Work outlined above. ACT Geotechnical Engineers has performed services in a manner consistent with the normal level of care and expertise exercised by members of the environmental assessment profession. No warranties express or implied, are made.

The assessment was limited strictly to identifying typical environmental conditions associated with the subject property area and does not include evaluation of any other issues.

The absence of any identified hazardous or toxic materials on the subject property should not be interpreted as a guarantee that such materials do not exist on the site.

3. Site Characteristics

The site location, borehole locations and a detailed site are presented in an aerial photograph as Figure 2.

3.1 Site Location and Description

Address	Brisbane Grove Rural Subdivision Rosemount Road & Mountain Ash Road Goulburn, NSW
Client	Southern Region Land Engineering
Deposited plans	Lot 1 DP835278, Lot 1 DP779194, Lot 103 DP70346, Lot 104 DP126140, Lot 105 DP126140, Lot 106 DP126140, Lot 1 DP853498, Lot 1 DP731427, Lot 2 DP835278, Lot 3 DP835278, Lot 22 DP811954, Lot 23 DP811954 and Lot 24 DP811954.
Locality map	Figure 1
Aerial Photograph	Figure 2
Area	Approximately 240ha
Land Zoning	RU1: primary production use area
Current land Use	Vacant, grazing & farming lands

The following description is based on observations made during a site visit conducted during boreholes drilling on 14 October 2022:

- The development site is presently vacant, grazing and farming lands.
- The investigation areas are bounded by Rosemount Road to the north, Mountain Ash Road to the south, and rural lots to the north and south of the Mountain Ash Road.
- No anthropogenic material (including asbestos) and no olfactory indicators of contamination were noted at the time of site investigation and sampling.

3.2 Surrounding Land Uses

A summary of the land uses that surround the site are as follows:

- **North:** Farming and grazing with scattered domestic dwelling.
- **South:** Farming and grazing with scattered domestic dwelling.
- **West:** Farming and grazing paddocks.
- **East:** Farming and grazing with scattered domestic dwelling.

Adjacent land-use currently the farming and grazing and historically three mining companies' exploration and mineral identification works had conducted in close proximity of the investigation area. Historical and present surrounding land-uses of other sites are expected to impact of the site.

3.3 Sensitive Environment

The closest sensitive environment is Mulwaree River and Saltpetre Creek which is located approximately 4km to the south west of the site. However, Gundary Creek is located approximately 850m south of the proposed development site.

3.4 Proposed Land Uses

The proposed land use is rural residential subdivisions.

4. Site history

4.1 Zoning

The investigation area is zoned RU1: primary production use area under the Goulburn Mulwaree Environmental Plan (2009).

4.2 Land-use

The development site is presently vacant and mainly using for farming, grazing and ground surface was covered with crops, native grasses and weeds.

4.3 Sources of information

- NSW EPA records of public notices under the CLM Act 1997
- Soil and geological maps
- Topographical map
- Aerial photographs (1944, 1953, 1967, 1975, 1987, 1997, 2006, 2012, 2018, 2021)
- Lotsearch record
- Site inspection 14 October 2022

4.4 Historical site review

A Lotsearch (Environmental Risk Report) was requested, which included historical aerial photographs of the site. These were reviewed to assist with assessing the history of the site. A summary of each photograph examined as a part of the investigation is provided in Section 4.4.1 below and the Lotsearch report in **Appendix C**.

4.4.1 Historical aerial photographs

Year	Site land-use observations	Surrounding land-use
1944	The site appears to almost vacant and paddocks.	Surrounding land use was almost vacant and rural paddocks. Several trees were located at the norther sites.
1953	The site appears to almost vacant and paddocks.	The site does not exhibit any discernible differences.
1967	Some areas had used for framing. No other changes are evident to the land on site	Three residential dwellings was identified respectively at north, south and east sites. Otherwise, rest of the site was unchanged.
1975	No changes are evident to the land on site	The site does not exhibit any discernible differences.
1987	No changes are evident to the land on site	The site does not exhibit any discernible differences.
1997	No changes are evident to the land on site	Several new residential buildings built at the north and south sites. Rosemount Road, Mountains Ash Road became paved road and Federal Highway was constructed.
2006	One residential dwelling was constructed at the investigation area. No obvious changed of rest of the areas.	Number of residential buildings increased in all directions. One oval was identified at the south of the investigation area.
2012	No changes are evident to the land on site	The site does not exhibit any discernible differences.
2018	Most of the investigation areas used for farming activities	The site does not exhibit any discernible differences.
2021	No changes are evident to the land on site	No changed are evident to the land surrounding the site.
1997-2009	No mining activities within the investigation site	Three mining and exploration companies (Ref: EL8673, EL6743 & EL0636) conducted minerals identification activities in close proximity of the investigation area (**Appendix C Title Search**)

4.4.2 EPA Contaminated Search

No contamination activities record was identified in the investigation areas which are located at north of Rosemount Road and at south of Mountain Ash Road, in Goulburn NSW of the licensed activities under the Protection of the Environmental Operations Act 1997.

4.4.3 Manufacturing Processes

There are no known manufacturing processes that currently occur or have previously occurred on the site.

4.4.4 Discharges to Land, Water and Air

No information regarding discharges to land, water and air was available for review at the time of writing this report. As no manufacturing operations are known to have occurred at the site, it is unlikely that there may have been previous discharges to land, water, or air in the past.

4.4.5 Dry Land Salinity and Acid Sulfate Soils

There are no evidenced of dry land salinity and acid sulfate soils in the investigations areas.

4.4.6 Asbestos

There are no records of naturally occurring asbestos (NOA) potential by Lotserach and no anthropogenic material identified during walkover survey in the investigation areas at the time of field investigation time.

4.4.7 Others

No records were identified for contaminated land, gasworks, liquid fuel activities from the Lotserach of the investigation areas. No heritage records were identified in the investigation areas (**Appendix C**).

5 SITE CONDITION AND ENVIRONMENTAL SETTING

5.1 Topography

The site has an elevation of approximately ~RL640m to ~RL680m above Australian Height Datum (m AHD)

Based on observations during the site investigation, the ground surface is relatively flat, dipping gently north and south and inclination is approximately 1^0 to 2^0 towards the Mountain Ash road to the unnamed drainage lines.

5.2 Indication of Contamination

No olfactory or visual indicators of contamination or anthropogenic materials were noted during the site visit or sampling of boreholes drilled across the site. No hydrocarbon odours or staining were observed in the soil from the boreholes.

5.3 Contaminant sources

The site mainly used for grazing, crops and cattle farming. Therefore, the potential contamination sources included pesticides, fertilizer (especially heavy metals) and fuels and oils from cultivated equipment and machine of the investigation area.

5.4 Relevant complaint history

No complaint history known.

5.5 Contaminated site register

The investigation area is not listed on the NSW EPA register of contaminated sites.

5.6 Previous investigations

No previous contamination investigations are known to have been undertaken on the site.

Current surrounding land uses residential dwelling, grazing and farming are expected to have minimal source of contamination.

5.7 Integrity assessment

A review of the Australian Soil Resource Information System (ASRIS) map and Lotsearch Report shows the subject site to be situated in an area of 'low probability for acid sulfate soil'

5.8 Geology

The 1:100, 000 Goulburn Geology map indicates the site to be covered by Quaternary age Colluvium, Residual deposit that includes medium to coarse grained sand matrix, sandy clay underlain Gundary volcanics dacitic rock.

5.9 Hydrogeology

5.9.1 Surface water

Surface water flows west and north and south to Mountain Ash road towards unnamed drainage lines. Mulwaree River and Saltpetre Creek which is located approximately 4km to the south west of the site. However, Gundary Creek is located approximately 850m south of the proposed development site.

5.9.2 Groundwater

Groundwater bore search was provided within the Lotsearch report (**Appendix C**). The purpose of the bore search was to document the location and depth of any nearby registered groundwater bores, and the associated quality of the groundwater so that potential impacts of contaminants from the site or surrounding land uses (if any) on local users of groundwater may be assessed. A copy of the groundwater bore search results is presented in **Appendix C**.

Three (3) groundwater bores within 500m in the investigation area. The bores are licensed for irrigation, general use and domestic purposes. The status and standing water level for all of the groundwater bores is unknown.

No.	Date drilled	Location	SWL (m)	Use	Status
GW105515	2002	411m W	5m	Domestic	Unknown
GW107321	2005	460m W	Unknown	Water Supply	Functioning
GW101460	1997	505m SW	2m	Water Supply	Functioning

Based on the topography of the site and the nearest water body, the groundwater flow direction is inferred to be in an overall southerly direction towards Gundary Creek to Mulwaree River.

6. Conceptual site model

Conceptual site models (CSM) are a method of presenting site contamination information and the relationships between sources of contamination, how it may have been introduced to the site, possible pathways for contaminant migration and exposure and the receptors that may be affected by contaminants.
The following conceptual site model has been prepared based on the information presented in the Lotsearch Report, document searches and site's fieldwork.

The preliminary CSM is presented in the sections below.

6.1 Sources of contamination

The potential contamination sources included pesticides, fertilizers and may potentially leaking of fuels and oils from onsite farming equipment and machine which have been used for farming purpose.

6.2 Contaminants of concern

Potential exists for contaminating activities to have been undertaken on-site which may impact on the suitability for the proposed land-use. The site has a historical land-use as part of a farming, grazing paddock and may have resulted in the application of fertilizer, pesticides during framing and pasture management. Based on the potential contamination source on site, historical activities and site inspection the contaminants of concern are:

- Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, mercury and zinc)
- Total Recoverable Hydrocarbons (TRH)
- Benzene, Toluene, Ethylbenzene and Xylene (BTEXN)
- Organochlorine Pesticides (OCP)
- Polychlorinated biphenyls (PCBs);
- Phenols and Asbestos
- Soil from each borehole was screened for possible fragments of naturally occurring asbestos (NOA) containing material or other anthropogenic material that may indicate a possible asbestos risk.

These analytes are mostly associated with the possibility of pesticides, fertilizers, leaking fuel from framing machines or equipment within theinvestigation area and historically uses of the site.

6.3 Potential receptors

The proposed land-use of the investigation area is residential subdivision. Surface water is expected to flow into the north and south downslope areas to the unnamed drainage line of the site.

Human receptors include
- Residence
- On-site works during site development
- Site workers and site visitors
- Intrusive maintenance workers

Ecological receptors include
- Vegetation on the site and adjacent the site
- Aquatic receptors off-site via stormwater system

6.4 Exposure pathways

Pathways for exposure to contaminants are:

- Dermal contact following soil disturbance
- Ingestion after soil disturbance
- Inhalation of dust after soil disturbance
- Surface water and sediment runoff into nearby waterways
- Leaching of contaminants into the groundwater

6.5 Source receptor linkages

Potential source pathway receptor linkages are identified to enable evaluation of any adverse impact on human health or ecology.

The investigation area is currently a vacant and will be started construction work for the proposed development and human receptors to the investigation area are possible. Proposed users of the site may have a risk of exposure if the contaminants are present and the soil is disturbed. Intrusive maintenance workers may also have an increased risk of exposure to contaminants during soil disturbance.

Source/contaminants	Transport	Potential exposure pathways	Receptors
■Heavy metals and OCP from agriculture land-use ■ Hydrocarbons from machinery	◘Volatilisation ◘Surface water ◘Groundwater	■Direct contact (ingestion and absorption) ◘Inhalation ◘Ingestion	■Residents ■ Intrusive maintenance workers ◘Ecosystem

■Potential, ◘unknown/unlikely

7. Data quality objectives (DQO)

7.1 State the problem

Historical and surrounding current land-uses may have resulted in contamination. A contamination assessment is required to determine the current soil contamination status and confirm suitability for proposed residential land-use.

7.2 Identify the decision

The proposed land use is residential subdivision use. The decision problem is, do the levels of potential contaminants do not exceed the assessment criteria listed in Section 11.

7.3 Identify the inputs decision

Investigations of the site are required to identify any potential contaminants from historical and current land-use.

7.4 Develop a decision rule

The initial guidelines for soil were the health and ecological investigation levels for residential land-use (NEPC 1999).

If soil contamination was identified, then the contaminant source and extent of contamination was determined.

7.6 Specify acceptable limits on the decision errors.

The 95% upper confidence limit of average levels of samples collected is less than the threshold levels and the results are less than 250% of relevant thresholds.

7.7 Optimize the design for obtaining data

Evaluate information from the previous steps and generate alternative data collection designs. Choose the most resource-effective design that meets all DQOs. Soil samples were collected proposed development site covering the north, east, south and west.

Analytes evaluated included heavy metals, TRH, BTEXN, Phenols, PAH, PCB, OCP, PCBs, Phenols and Asbestos.

8. Sampling analysis plan and sampling methodology

8.1 Sampling design

A soil investigation were undertaken by excavation of ten (10) boreholes to target depth 1.5m. The soil profile was described in each borehole including detection of hydrocarbon odour and staining.

Discrete soil samples were collected from the boreholes from surface, different depth to 1.1m at the investigation area. The representative soil samples were submitted at NATA accredited laboratory for laboratory analysis.

Schedule of samples collected for laboratory analysis is outlined in Table 1. Sampling locations are presented in Figure 2.

8.1.1 Sampling locations

Discrete soil samples were collected from the borehole locations in the proposed residential subdivision areas. A total of 19 discrete soil samples and 2 duplicate samples were collected for analysis (Figure 2).

8.1.2 Sampling depth

Soil boring and descriptions were undertaken to natural soil. Target sampling depth was surface, different depth to 1500mm in most of the sites or at change material or any signs of contamination into natural soil.

8.2 Analytes

Soil samples were evaluated for arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury, TRH, BTEXN, PAH, OCP, PCBs, Phenols, and Asbestos.

8.3 Sampling methods

Ten (10) boreholes which are designated (BH1 to BH10) were drilled across the investigation area on 14 October 2022 using a hand auger to a target depth of 1.5m. Soil was taken at each individual sampling location and depth.

Discrete soil samples were transferred directly to a solvent rinsed glass jar with a Teflon lid.

Tools were decontaminated between sampling locations to prevent cross contamination by brushing to remove caked or encrusted material, washing in detergent and tap water.

After collection, samples were placed in an insulated container with ice bricks and refrigerated shortly after. Transportation to the laboratory for analysis was in insulated containers with ice bricks.

Table 1. Schedule of samples and analyses

Sample ID	Depth (mm)	Location	Analysis undertaken
BH1	100	See Report	Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg), TRH, BTEXN PAH, Organochlorine Pesticides (OCP), Polychlorinated biphenyls (PCBs), phenols and asbestos
BH1	500	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP, PCBs and phenols
BH2	300	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH2	1000	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH3	200	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH3	900	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH4	500	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH4	1400	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH5	100	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP, PCBs and asbestos
BH6	500	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH6	1500	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH7	500	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH7	1100	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH8	100	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH8	1000	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH9	300	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH9	1000	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH10	100	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
BH10	800	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
DA/BH1	500	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs
DA/BH8	100	See Report	As, Cd, Cr, Cu, Pb, Ni, Zn, Hg, TRH, BTEXN, PAH, Phenols, OCP and PCBs

9. Quality assurance and quality control

9.1 Sampling design

The sampling program is intended to provide data as to the presence and levels of contaminants in the soil.

Discrete soil samples were collected across the site. The sampling density will enable the detection of an area with a 95% confidence level.

The number and location of samples taken is expected to provide an adequate assurance that the soil samples are representative of the site as a whole.

9.2 Field

The collection of samples was undertaken in accordance with accepted standard protocols (NEPC 1999).

Selected discrete soil samples collected from the site were analysed for Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg), TRH, BTEXN PAH, Phenols, Organochlorine Pesticides (OCP), PCBs and composite samples were collected for asbestos.

Sampling equipment was decontaminated between each sampling event. The appropriate storage conditions and duration were observed between sampling and analysis. A chain of custody form accompanied the samples to the laboratory (**Appendix B**).

A single sampler was used to collect the samples using standard methods. Soil collected was a fresh sample from a hand shovel. After collection the samples were immediately placed in new glass sampling jars and placed in a cooler.

Two duplicate sample was collected. No field blank, rinsate, trip blank or matrix spikes were submitted for analysis. Refrigerated storage and transportation in insulated containers with ice bricks by overnight couriers ensured the integrity of the samples. Samples from each batch did not contain detectable levels of some analytes which indicates adequate sampling integrity and no cross contamination in sampling and transport.

9.3 Laboratory

Chemical analysis was conducted by ALS Laboratories, Sydney, which is NATA accredited for the tests undertaken. The laboratories have quality assurance and quality control programs in place, which include internal replication and analysis of spike samples and recoveries.

Method blanks, matrix duplicates and laboratory control samples were within acceptance criteria. The quality assurance and quality control report is presented together with the laboratory report as **Appendix B**.

9.4 Data evaluation

The laboratory quality control report indicates the data variability is within acceptable residential limits. The data is considered representative and usable for the purposes of the investigation.

Method blanks, matrix spikes, matrix duplicates and laboratory control samples were within acceptance criteria. The quality assurance and quality control report are presented as **Appendix A** together with the laboratory report as **Appendix B**.

10. Assessment criteria

The proposed land-use of the site is residential. The sites where residence are likely to be the most sensitive receptors are assessed against the residential land-use scenario, and the laboratory results were assessed against the relevant criteria. The health-based investigation levels of contaminants in the soil for residential site, for the substances for which criteria are available, are listed in Table 2 to Table 3, as recommended in the NEPM (1999).

The NEPM (1999) provides health screening levels (HSL) for hydrocarbons in soil. The HSLs have been developed to be protective of human health for soil types, depths below surface and apply to exposure to hydrocarbons through the predominant vapour exposure pathway. The appropriate HSL for the site is listed in Table 2. TRH>C16 have physical properties which make the TRH fractions non-volatiles and therefore these TRH fractions are not limiting for vapour intrusion.

Ecological investigation levels (EIL) have been developed for the protection of terrestrial ecosystems for selected metals and organic substances in the soil in the guideline (NEPC 1999). Ecological screening levels (ESL) assess the risk to terrestrial ecosystems from petroleum hydrocarbons in the soil. The EILs and ESLs consider the properties of the soil and contaminants and the capacity of the local ecosystem to accommodate increases in contaminant levels.

EILs vary with land-use and apply to contaminants up to 2m depth below the surface. The EILs for residential land-use are listed in Table 3. ESLs are dependent on land-use, soil types and are applicable to contaminants up to 2m below the surface. The appropriate ESL for the site is commercial and fine soil as listed in Table 2.

Management limits have been developed to assess petroleum hydrocarbons following evaluation of human health and ecological risks (NEPC 1999). Management units are applicable as screening levels after consideration of relevant ESLs and HSLs. The appropriate management limit for the site is listed in Table 2.

Chromium is analysed as total chromium which is the sum of chromium (III) and chromium (VI). Chromium (VI) is a potential contaminant from industrial processes including ferrochrome production, electroplating, pigment production and tanning (WHO 1998) and is not expected to occur in agricultural sites. Chromium (VI) is reduced to chromium (III) when it comes into contact with organic matter in biota, soil and water. No threshold has been set for total chromium on agricultural sites as it is ubiquitous in the environment and is almost always present in the trivalent state (WHO 1998). Chromium (III) is poorly absorbed by any route therefore toxicity of chromium is mainly attributable to chromium (VI) (ATSDR 2013).

Typical CEC values for soils in the locality include 20cmol(+)/kg. pH values of between 5 and 5.5, organic carbon of 1.5% and clay content of 20 to 25% (eSPADE v2.2). The proposed land-use is residential. The contaminants have been identified in the soil for at least two years and are considered aged.

Table 2. Investigation levels – residential land-use (mg/kg) (NEPC 1999)

Analyte	HSL Residential / clay soil			HIL Residential	ESL Residential	Management limits for TRH Residential
	0m to <1m	1m to <2m	2m to <4m			
Arsenic	-	-	-	100	-	-
Cadmium	-	-	-	20	-	-
Chromium (total)	-	-	-	-	-	-
Chromium (VI)	-			100		
Copper	-	-	-	6,000	-	-
Lead	-	-	-	300	-	-
Nickel	-	-	-	400	-	-
Zinc	-	-	-	7,400	-	-
TRH (C6-C10)	50	90	150	-	180	800
TRH (>C10-C16)	280	NL	NL	-	120	1,000
TRH (>C16-C34)	NA	NA	NA	-	1,300	3,500
TRH (>C34-C40)	NA	NA	NA	-	5,600	10,000
Benzene	0.7	1	2	-	65	-
Toluene	480	NL	NL	-	105	-
Ethylbenzene	NL	NL	NL	-	125	-
Xylenes	110	NL	NL	-	45	-
Naphthalene	5	NL	NL	-	-	-
OCP (DD's)	-	-	-	-	-	-
PAH (total)	-	-	-	300	-	-
Phenol	-	-	-	3,000	-	-
Mercury	-	-	-	40	-	-

HIL – health investigation level, HSL – health screening level, EIL – ecological investigation level, ESL – ecological screening level, NL – non limiting, NA – not applicable

Table 3. EIL Calculation sheet, residential land-use

Analyte	Rationale	ACL (mg/kg)	ABC (mg/kg)	EIL (mg/kg)
Zinc	CEC 20cmol/kg, pH 5.5	350	0	350
Copper	pH 5.5	150	0	150
Nickel	CEC 20cmol/kg	270	0	270
Lead	Generic	1,100	0	1,100
Arsenic	Aged	100	0	100
DDT	Aged	180	0	180
Naphthalene	Aged	170	0	170

ACL – added contaminant limit, ABC – ambient background concentration, EIL – Ecological investigation limit (ACL+ABC)

11. Results

11.1 Site Walkover

The site was vacant at time of inspection and has historically been used for grazing and agricultural. No infrastructure was located on site or fill material in the sampling locations.

11.2 Paddocks

The site consists of crops and pasture grasses around the perimeter of the investigation area.

The levels of all metals, OCPs and hydrocarbons analysed in the paddock soil samples (Table 4 and 5) were not detected or at environmental background levels and below the residential land-use thresholds (NEPC 1999).

11.3 Visual Observations / Field Measurements

The natural material beneath the topsoil comprised of red brown/yellow brown sandy clay with fine to medium, sub-rounded to rounded gravel.

No anthropogenic material (including asbestos) and no olfactory indicators of contaminationwere noted during sampling.

11.4 Analytical Results

Surface cover on-site by crops, native grasses and weeds. The site was located on simple slope.

No surface staining or bare areas were detected on the site.

The levels of all substances analysed in the soil samples (Table 4 & Table 5) collected from the site were not detected or at environmental background levels for proposed residential land-use thresholds (NEPM 1999).

Table 4. Analytical results and threshold concentrations (mg/kg)

Sample ID	Depth	Location	Arsenic	Cadmium	Chromium (total)	Copper	Lead	Nickel	Zinc	Mercury	OCP DD's	PAH (total)	Phenol
BH1	100	See Report	<5	<1	25	11	14	7	22	<0.1	ND	ND	ND
BH1	500	See Report	<5	<1	23	13	15	11	19	<0.1	ND	ND	ND
BH2	300	See Report	<5	<1	19	<5	10	4	8	<0.1	ND	ND	ND
BH2	1000	See Report	8	<1	50	8	15	9	6	<0.1	ND	ND	ND
BH3	200	See Report	<5	<1	24	6	10	3	9	<0.1	ND	ND	ND
BH3	900	See Report	7	<1	52	12	17	6	10	<0.1	ND	ND	ND
BH4	500	See Report	5	<1	47	9	14	6	14	<0.1	ND	ND	ND
BH4	1400	See Report	6	<1	56	10	14	9	8	<0.1	ND	ND	ND
BH5	100	See Report	5	<1	31	7	17	4	11	<0.1	ND	ND	ND
BH6	500	See Report	<5	<1	43	6	22	5	12	<0.1	ND	ND	ND
BH6	1500	See Report	9	<1	85	14	38	10	12	<0.1	ND	ND	ND
BH7	500	See Report	8	<1	62	7	16	4	6	<0.1	ND	ND	ND
BH7	1100	See Report	14	<1	65	10	92	9	6	<0.1	ND	ND	ND
BH8	100	See Report	<5	<1	38	9	19	7	13	<0.1	ND	ND	ND
BH8	1000	See Report	6	<1	43	12	14	7	11	<0.1	ND	ND	ND
BH9	300	See Report	<5	<1	21	<5	12	2	7	<0.1	ND	ND	ND
BH9	1000	See Report	8	<1	37	11	18	6	11	<0.1	ND	ND	ND
BH10	100	See Report	<5	<1	15	<5	18	3	7	<0.1	ND	ND	ND
BH10	800	See Report	<5	<1	15	5	10	4	8	<0.1	ND	ND	ND
DA/BH1	500	See Report	<5	<1	28	14	17	13	19	<0.1	ND	ND	ND
DA/BH8	100	See Report	8	<1	77	8	23	6	7	<0.1	ND	ND	ND
Health Investigation Levels – Residential land-use threshold (NEPM 1999)													
Discrete			*100*	*20*	*-**	*6,000*	*300*	*400*	*7,400*	*40*	*-*	*300*	*3,000*
Ecological Investigation Levels – Urban residential and public open space (NEPM 1999)													
Discrete			*100*	*-*	*-*	*150*	*1,100*	*270*	*350*	*-*	*180*	*-*	*-*

ND = not detected at the detection limit, * Not applicable due to low human toxicity of Cr(III) and non-industrial site

Table 5. Analytical results and threshold concentrations for hydrocarbons (mg/kg)

Sample ID.	Depth	Location	TRH (C6-C10)	TRH (>C10-C16)	TRH (>C16-C34)	TRH (>C34-C40)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
BH1	100	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH1	500	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH2	300	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH2	1000	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH3	200	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH3	900	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH4	500	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH4	1400	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH5	100	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH6	500	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH6	1500	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH7	500	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH7	1100	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH8	100	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH8	1000	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH9	300	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH9	1000	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH10	100	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
BH10	800	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
DA/BH1	500	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
DA/BH8	100	See Report	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<1
HSL A– residential/recreational clay soil			*50*	*280*	*NA*	*NA*	*0.7*	*480*	*NL*	*110*	*NL*
EIL – residential			-	-	-	-	-	-	-	-	*370*
ESL – residential/ recreational / fine soil			*180*	*120*	*1,300*	*5,600*	*65*	*105*	*125*	*45*	-
Management limits for TRH fractions in soil / residential			*800*	*1,000*	*5,000*	*10,000*	-	-	-	-	-

HSL – Health Screening Levels, EIL – Ecological Investigation Levels, ESL – Ecological Screening Levels, ND – not detected at the detection limit

12. Site characterization

12.1 Environmental contamination

No soil contamination was identified in the collected samples and no Natural Occurrence Asbestos (NOA) and anthropogenic asbestos identified in the tested samples **Appendix B**.

12.2 Chemical degradation production

Not applicable as no contamination was identified.

12.3 Exposed population

12.3.1 Human health

No applicable. No contamination was identified in the preliminary site investigation.

12.3.2 Ecological impact

No applicable. No contamination was identified in the preliminary site investigation.

13. Incident Notification/Duty of report

13.1 Section 60 Contaminated Land Management Act 1997

Under Section 60 of the CLM Act, a person whose activities have contaminated land or a landowner whose land has been contaminated is required to notify EPA when they become aware of the contamination.

Triggers to notification include:

13.1.1 On-site soil contamination

- the 95% upper confidence limit on the arithmetic average concentration of contamination in or on soil, on the land is equal to, or above the EPA health investigation level or guidelines

OR

- the concentration of a contaminant in an individual soil sample is above two and a half times the EPA investigation level or guideline

AND

- a person has been, or foreseeable will be, exposed to the contaminant or any by-product of the contaminant

Response: No contamination was identified in the soil samples analysed.

13.1.2 Off-site soil contamination

- the 95% upper confidence limit on the arithmetic average concentration of contamination in or on soil, on the land is equal to, or above the EPA health investigation level or guidelines

OR

- the concentration of a contaminant in an individual soil sample is above two and a half times the EPA investigation level or guideline

AND

- the concentration of the contaminant in, or on, the soil on the neighbouring land will foreseeable continue to remain above the specified concentration

Response: No contamination was identified in the soil samples analysed.

13.2 Overall assessment

It is concluded with the information available the appropriate regulatory authority or EPA is not required to be notified as no contamination was identified on the site soil.

14. Conclusions and Recommendation

The site is presently vacant and mainly used for framing, grazing and rural paddocks.

The soil were analysed for total recoverable hydrocarbons (TRH C6-C40), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), PAH, phenol, OCP, PCBs, heavy metals, and asbestos.

No hydrocarbon odour was observed in the boreholes.

The Arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), nickel (Ni), zinc (Zn), TRH, BTEXN, PAH, Phenols, Organochlorine Pesticides (OCP), asbestos levels in all soil samples collected were less than the assessment thresholds.

No natural occurrence asbestos (NOA) identified at the surface and subsurface soil at the borehole locations and no anthropogenic asbestos was identified at the tested samples.

14.1 Assumptions in reaching the conclusions

The assessment is comprised of a desktop study, site inspections, subsoil investigations and soil analysis. It is assumed the sampling sites are representative of the site. An accurate history has been obtained and typical management practices were adopted.

14.2 Extent of uncertainties

The analytical data relates only to the locations sampled. Soil conditions can vary both laterally and vertically and it cannot be excluded that unidentified contaminants may be present.

14.3 Suitability for proposed use of the site

The site is suitable for proposed residential land-use.

14.4 Limitations and constraints on the use of the site

No constraints are recommended.

14.5 Recommendations for Further Work

Based on preliminary investigations the site is suitable for the proposed change in land-use. An unexpected finds appropriate protocol as per EPA guideline should be implemented if asbestos or other contaminants are suspected during works.

15. Report limitations and intellectual property

This report has been prepared for the use of the client to achieve the objectives given the client requirements. The level of confidence of the conclusion reached is governed by the scope of the investigation and the availability and quality of existing data. Where limitations or uncertainties are known, they are identified in the report. No liability can be accepted for failure to identify conditions or issues which arise in the future and which could not reasonably have been predicted using the scope of the investigation and the information obtained.

The investigation identifies the actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing is interpreted by geologists, engineers or scientists who then render an opinion about overall subsurface conditions, the nature and extent of the contamination. Actual conditions may differ from those inferred to exist, because no professional, no matter how well qualified, and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock or time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from predictions. It is thus important to understand the limitations of the investigation and recognise that we are not responsible for these limitations.

15. References

NSW EPA (2017) Guidelines for the NSW Site Auditor Scheme (3rd Ed.) (2017) NSW EPA (1995) Sampling Design Guidelines (1995)

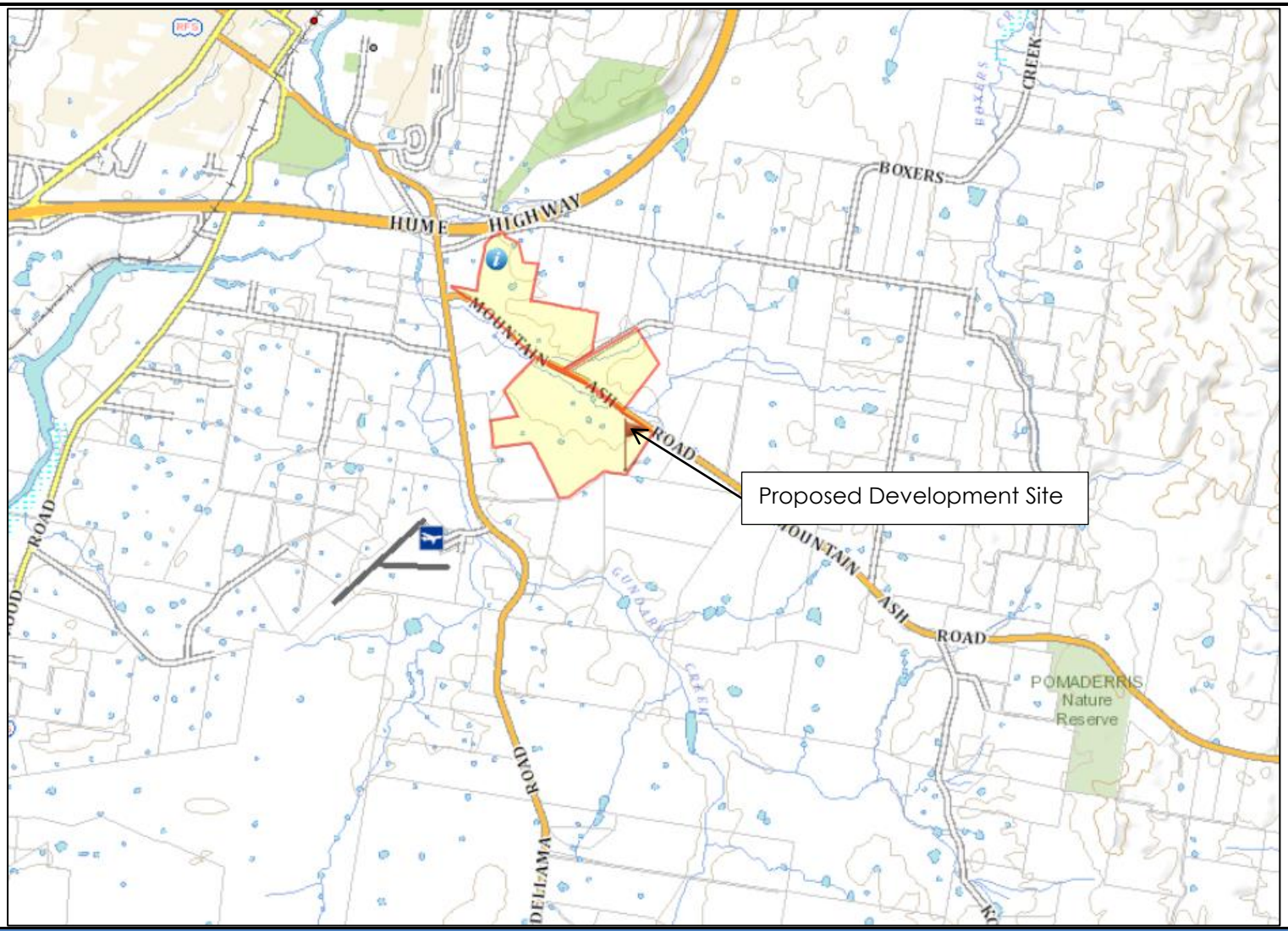
NSW EPA (2020) Contaminated Land Guidelines - Consultants Reporting on Contaminated Land

NEPC (1999) *National Environment Protection (Assessment of Site Contamination) Measure 1999 Revised 2013* (National Environment Protection Council Service Corporation, Adelaide)

1:100,000 Goulburn Geology Map

Appendices:

Appendix A. Sample analysis, quality assurance and quality control (QAQC) report
Appendix B. Soil analysis results – ALS report number ES2237211 and chain of custody forms
Appendix C. Lotsearch Result



SOUTHERN REGION LAND ENGINEERING
BRISBANE GROVE RURAL SUBDIVISION, GOULBURN, NSW
SITE LOCALITY

ACT Geotechnical Engineers Pty Ltd	C11822	FIGURE 1

N

LEGEND

⊗ - Location of borehole

SOUTHERN REGION LAND ENGINEERING
BRISBANE GROVE RURAL SUBDIVISION, GOULBURN, NSW
AERIAL PHOTOGRAPH AND BOREHOLE LOCATION

ACT Geotechnical Engineers Pty Ltd	C11822	FIGURE 2

Appendix A. Sample analysis, quality assurance and quality control (QAQC) report

1. Data quality indicators (DQI) requirements

1.1 Completeness

A measure of the amount of usable data for a data collection activity. Greater than 95% of the data must be reliable based on the quality objectives. Where greater than two quality objectives have less reliability than the acceptance criterion the data may be considered with uncertainty.

1.1.1 Field

Consideration	Requirement
Locations and depths to be sampled	Described in the sampling plan. The acceptance criterion is 95% data retrieved compared with proposed. Acceptance criterion is 100% in crucial areas.
SOP appropriate and compiled	Described in the sampling plan.
Experienced sampler	Sampler or supervisor
Documentation correct	Sampling log and chain of custody completed

1.1.2 Laboratory

Consideration	Requirement
Samples analysed	Number according to sampling and quality plan
Analytes	Number according to sampling and quality plan
Methods	EPA or other recognised methods with suitable PQL
Sample documentation	Complete including chain of custody and sample description
Sample holding times	Metals (6 months), TRH (14 days), BTEXN (14 days) and PAH (7 days until extraction, 40 after)

1.2 Comparability

The confidence that data may be considered to be equivalent for each sampling and analytical event. The data must show little or no inconsistencies with results and field observations.

1.2.1 Field

Consideration	Requirement
SOP	Same sampling procedures to be used
Experienced sampler	Sampler or supervisor
Climatic conditions	Described as may influence results
Samples collected	Sample medium, size, preparation, storage, transport

1.2.2 Laboratory

Consideration	Requirement
Analytical methods	Same methods, approved methods
PQL	Same
Same laboratory	Justify if different
Same units	Justify if different

1.3 Representativeness

The confidence (expressed qualitatively) that data are representative of each media present on the site.

1.3.1 Field

Consideration	Requirement
Appropriate media sampled	Sampled according to sampling and quality plan or in accordance with the EPA (1995) sampling guidelines.
All media identified	Sampling media identified in the sampling and quality plan.

1.3.2 Laboratory

Consideration	Requirement
Samples analysed	Blanks

2. Laboratory analysis summary

Two analysis batch was undertaken over the preliminary investigation program. Samples were collected on 14 October 2022. A total of nineteen (19) samples and two (2) duplicate samples were submitted for analytical testing. The samples were collected in the field by an environmental geologist from ACT Geotechnical Engineer Pty Ltd, placed into laboratory prepared receptacles as recommended in NEPM (1999). The samples preservation and storage was undertaken using standard industry practices (NEPC 1999). A chain of custody form accompanied transport of the samples to the laboratory.

3. Field quality assurance and quality control

Two intra laboratory duplicate sample was collected for the investigation. The frequency was 10% which is higher than the recommended frequency for the preliminary nature of the investigation. Table A3.1 outlines the samples collected and differences in replicate analyses. Relative differences were deemed to pass if they were within the acceptance limits of +/- 40% for replicate analyses or less than 5 times the detection limit.

Table A3.1. Relative differences for intra laboratory duplicates

	BH1-500/DA500 Relative difference (%)	Pass/Fail Pass	BH8-100/DA100 Relative difference (%)	Pass/Fail
Arsenic	0	Pass	-2	Pass
Cadmium	0	Pass	0	Pass
Chromium	-2	Pass	-34	Pass
Copper	-2	Pass	4	Pass
Lead	-3	Pass	-9	Pass
Nickel	-6	Pass	1	Pass
Zinc	3	Pass	4	Pass
Mercury	NA	-	NA	-

NA – relative difference unable to be calculated as results are less than laboratory detection limit, * result less than 10 times the adopted threshold not expected to affect results.

No trip blanks or spikes were submitted for analysis. This is not considered to create significant uncertainty in the analysis results because of the following rationale:

- The fieldwork was completed within a short time period and consistent methods were used for soil sampling.
- Soil samples were placed in insulated cooled containers after sampling to ensure preservation during transport and storage.
- The samples were placed in single use jars using clean sampling tools and disposable gloves from material not in contact with other samples. This reduces the likelihood of cross contamination.
- Samples in the analysis batch contain analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.
- The target analytes were not volatile.

4. Laboratory quality assurance and quality control

Sample holding times are recommended in NEPC (1999). The time between collection and extraction for all samples was less than the criteria listed below:

Analyte	Maximum holding time
Metals, cyanide	6 months
TRH	14 days
BTEXN	14 days
PAH	7 days until extraction, 40 days after

The laboratory interpretative reports are presented with individual laboratory report. Assessment is made of holding time, frequency of control samples and quality control samples. No significant outliers exist for the sampling batches. The laboratory report also contains a detailed description of preparation methods and analytical methods.

The results, quality report, interpretative report and chain of custody are presented in the attached appendices. The quality report contains the laboratory duplicates, spikes, laboratory control samples, blanks and where appropriate matrix spike recovery (surrogate).

5. Data quality indicators (DQI) analysis

5.1 Completeness

A measure of the amount of usable data for a data collection activity (total to be greater than 95%).

The data set was found to be complete based on the scope of work. No critical areas of contamination were omitted from the data set.

5.1.1 Field

Consideration	Accepted	Comment
Locations to be sampled	Yes	In accordance with sampling methodology, described in the report. Sampling locations described in figures.
Depth to be sampled	Yes	In accordance with sampling methodology
SOP appropriate and compiled	Yes	In accordance with sampling methodology Sampled with a drill rig and hand spade into lab prepared containers, decontamination between samples, latex gloves worn by sampler
Experienced sampler	Yes	Same soil sampler, environmental scientist
Documentation correct	Yes	Sampling log completed Chain of custody completed

5.1.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	All critical samples analysed in accordance with chain of custody and analysis plan
Analytes	Yes	All analytes in accordance with chain of custody and analysis plan
Methods	Yes	Analysed in NATA accredited laboratory with recognised methods and suitable PQL
Sample documentation	Yes	Completed including chain of custody and sample results and quality results report for each batch
Sample holding times	Yes	Metals (6 months), TRH (14 days), BTEXN (14 days) and PAH (7 days until extraction, 40 after)

5.2 Comparability

The confidence that data may be considered to be equivalent for each sampling and analytical event.

The data sets were found to be acceptable.

5.2.1 Field

Consideration	Accepted	Comment
SOP	Yes	Same sampling procedures used and sampled on one date
Experienced sampler	Yes	Experienced scientist
Climatic conditions	Yes	Described in field sampling log
Samples collected	Yes	Suitable size, storage and transport

5.2.2 Laboratory

Consideration	Accepted	Comment
Analytical methods	Yes	Same methods all samples, in accordance with NEPC(1999) or USEPA
PQL	Yes	Suitable for analytes
Same laboratory	Yes	ALS is NATA accredited for the tests undertaken
Same units	Yes	-

5.3 Representativeness

The confidence (expressed qualitatively) that data are representative of each media present on the site.

The data sets were found to be acceptable.

5.3.1 Field

Consideration	Accepted	Comment
Appropriate media sampled	Yes	Sampled according to sampling and quality plan
All media identified	Yes	Soil Sampling media identified in the sampling and quality plan

5.3.2 Laboratory

Consideration	Accepted	Comment
Samples analysed	Yes	Undertaken in NATA accredited laboratory. No blanks analysed. Samples in the analysis batch contain analytes below the level of detection.

No trip blanks, field spikes or sample rinsates were submitted for analysis. This is not considered to create significant uncertainty in the analysis results because of the following rationale:

- The fieldwork methods used for soil sampling were consistent throughout the project with all in situ samples collected from material which had not been subject to exposure.
- The fieldwork was completed within a short time period and consistent methods were used for soil sampling.
- Soil samples were placed in insulated cooled containers as quickly as possible, with the containers filled to minimize headspace. The sample containers were sealed immediately after the sample was collected and chilled in an esky containing ice.
- The samples were stored in a refrigerator and transported with ice bricks to ensure preservation during transport and storage.
- The samples were placed in single use jars using clean sampling tools and disposable gloves from material not in contact with other samples. This reduces the likelihood of cross contamination.
- Samples in the analysis batches contained analytes below the level of detection. It is considered unlikely that contamination has occurred as a result of transport and handling.
- The target analytes were not volatile

6. Conclusion

All media appropriate to the objectives of this investigation have been adequately analysed and no area of significant uncertainty exist. It is concluded the data is usable for the purposes of the investigation.

APPENDIX B
LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

APPENDIX C
LOTSEARCH ENVIRONMENTAL RISK REPORT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2237211**	Page	: 1 of 28
Client	: **CASH SALES SYDNEY**	Laboratory	: Environmental Division Sydney
Contact	: SALIM MAHMUD	Contact	: Customer Services ES
Address	:	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: C11822	Date Samples Received	: 18-Oct-2022 07:30
Order number	: ----	Date Analysis Commenced	: 20-Oct-2022
C-O-C number	: ----	Issue Date	: 01-Nov-2022 15:59
Sampler	: SALIM MAHMUD		
Site	: ----		
Quote number	: Blanket Quote		
No. of samples received	: 21		
No. of samples analysed	: 21		

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

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

This Certificate of Analysis contains the following information:

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

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG005T: Poor precision was obtained for Chromium on sample ES2237211 # 021. Confirmed by re-digestion and reanalysis.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH1-0.1	BH1-0.5	BH2-0.3	BH2-1	BH3-0.2
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-001	ES2237211-002	ES2237211-003	ES2237211-004	ES2237211-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	26.9	16.7	19.7	13.8	15.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	----	----	----
Asbestos Type	1332-21-4	-	--	----	-	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	----	No	----	----	----
Organic Fibre	----	0.1	g/kg	----	No	----	----	----
Sample weight (dry)	----	0.01	g	----	666	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	A. SMYLIE	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	8	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	25	23	19	50	24
Copper	7440-50-8	5	mg/kg	11	13	<5	8	6
Lead	7439-92-1	5	mg/kg	14	15	10	15	10
Nickel	7440-02-0	2	mg/kg	7	11	4	9	3
Zinc	7440-66-6	5	mg/kg	22	19	8	6	9
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1-0.1	BH1-0.5	BH2-0.3	BH2-1	BH3-0.2
				Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		ES2237211-001	ES2237211-002	ES2237211-003	ES2237211-004	ES2237211-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH1-0.1	BH1-0.5	BH2-0.3	BH2-1	BH3-0.2
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-001	ES2237211-002	ES2237211-003	ES2237211-004	ES2237211-005
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1-0.1	BH1-0.5	BH2-0.3	BH2-1	BH3-0.2
				Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		ES2237211-001	ES2237211-002	ES2237211-003	ES2237211-004	ES2237211-005
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**119**	**113**	**116**	**117**	**118**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**92.2**	**105**	**99.6**	**89.1**	**98.3**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**94.4**	**101**	**92.1**	**80.1**	**93.9**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**71.8**	**69.8**	**74.6**	**70.1**	**70.5**
2-Chlorophenol-D4	93951-73-6	0.5	%		**77.9**	**75.3**	**81.2**	**76.7**	**77.0**
2.4.6-Tribromophenol	118-79-6	0.5	%		**62.3**	**59.5**	**61.9**	**56.3**	**54.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1-0.1	BH1-0.5	BH2-0.3	BH2-1	BH3-0.2
				Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		ES2237211-001	ES2237211-002	ES2237211-003	ES2237211-004	ES2237211-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		83.8	80.7	85.5	82.8	82.9
Anthracene-d10	1719-06-8	0.5	%		96.4	94.5	99.5	95.5	96.6
4-Terphenyl-d14	1718-51-0	0.5	%		87.5	84.6	90.4	88.0	88.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		91.6	87.1	91.4	93.5	98.3
Toluene-D8	2037-26-5	0.2	%		90.4	87.7	96.7	94.2	97.0
4-Bromofluorobenzene	460-00-4	0.2	%		98.4	94.1	101	95.6	105

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH3-0.9	BH4-0.5	BH4-1.4	BH5-0.1	BH6-0.5
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-006	ES2237211-007	ES2237211-008	ES2237211-009	ES2237211-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.1	16.0	14.7	15.7	16.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	No	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	----	----	No	----
Asbestos Type	1332-21-4	-	--	----	----	----	-	----
Synthetic Mineral Fibre	----	0.1	g/kg	----	----	----	No	----
Organic Fibre	----	0.1	g/kg	----	----	----	No	----
Sample weight (dry)	----	0.01	g	----	----	----	612	----
APPROVED IDENTIFIER:	----	-	--	----	----	----	A. SMYLIE	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	5	6	5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	52	47	56	31	43
Copper	7440-50-8	5	mg/kg	12	9	10	7	6
Lead	7439-92-1	5	mg/kg	17	14	14	17	22
Nickel	7440-02-0	2	mg/kg	6	6	9	4	5
Zinc	7440-66-6	5	mg/kg	10	14	8	11	12
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH3-0.9	BH4-0.5	BH4-1.4	BH5-0.1	BH6-0.5
				Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		ES2237211-006	ES2237211-007	ES2237211-008	ES2237211-009	ES2237211-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH3-0.9	BH4-0.5	BH4-1.4	BH5-0.1	BH6-0.5
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-006	ES2237211-007	ES2237211-008	ES2237211-009	ES2237211-010
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH3-0.9	BH4-0.5	BH4-1.4	BH5-0.1	BH6-0.5
				Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		ES2237211-006	ES2237211-007	ES2237211-008	ES2237211-009	ES2237211-010
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**113**	**128**	**122**	**129**	**114**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**102**	**99.2**	**102**	**122**	**98.0**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**87.9**	**98.1**	**97.3**	**113**	**91.1**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**71.7**	**68.0**	**71.9**	**70.2**	**72.5**
2-Chlorophenol-D4	93951-73-6	0.5	%		**78.8**	**76.2**	**78.6**	**76.1**	**79.3**
2.4.6-Tribromophenol	118-79-6	0.5	%		**55.2**	**50.1**	**53.9**	**53.3**	**55.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH3-0.9	BH4-0.5	BH4-1.4	BH5-0.1	BH6-0.5
				Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		ES2237211-006	ES2237211-007	ES2237211-008	ES2237211-009	ES2237211-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		85.2	85.6	84.6	81.7	84.8
Anthracene-d10	1719-06-8	0.5	%		97.3	95.6	95.5	94.1	98.2
4-Terphenyl-d14	1718-51-0	0.5	%		89.6	88.6	87.8	86.0	89.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		101	98.9	94.8	94.2	90.4
Toluene-D8	2037-26-5	0.2	%		106	102	94.7	88.3	91.2
4-Bromofluorobenzene	460-00-4	0.2	%		111	104	96.7	95.8	92.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH6-1.5	BH7-0.5	BH7-1.1	BH8-0.1	BH8-1
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-011	ES2237211-012	ES2237211-013	ES2237211-014	ES2237211-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**17.0**	**14.3**	**14.0**	**16.2**	**14.9**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**9**	**8**	**14**	<5	**6**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**85**	**62**	**65**	**38**	**43**
Copper	7440-50-8	5	mg/kg	**14**	**7**	**10**	**9**	**12**
Lead	7439-92-1	5	mg/kg	**38**	**16**	**91**	**19**	**14**
Nickel	7440-02-0	2	mg/kg	**10**	**4**	**9**	**7**	**7**
Zinc	7440-66-6	5	mg/kg	**12**	**6**	**6**	**13**	**11**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH6-1.5	BH7-0.5	BH7-1.1	BH8-0.1	BH8-1
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-011	ES2237211-012	ES2237211-013	ES2237211-014	ES2237211-015
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH6-1.5	BH7-0.5	BH7-1.1	BH8-0.1	BH8-1
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-011	ES2237211-012	ES2237211-013	ES2237211-014	ES2237211-015
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH6-1.5	BH7-0.5	BH7-1.1	BH8-0.1	BH8-1
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-011	ES2237211-012	ES2237211-013	ES2237211-014	ES2237211-015
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**116**	**116**	**124**	**124**	**120**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**112**	**101**	**107**	**116**	**125**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**86.9**	**92.7**	**87.7**	**98.7**	**61.9**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**70.0**	**70.5**	**75.6**	**68.8**	**73.4**
2-Chlorophenol-D4	93951-73-6	0.5	%	**76.8**	**76.6**	**82.1**	**75.3**	**79.1**
2.4.6-Tribromophenol	118-79-6	0.5	%	**51.3**	**49.6**	**53.9**	**49.7**	**51.4**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**83.2**	**82.9**	**88.4**	**82.3**	**84.6**
Anthracene-d10	1719-06-8	0.5	%	**95.0**	**94.5**	**102**	**95.1**	**98.0**
4-Terphenyl-d14	1718-51-0	0.5	%	**86.9**	**88.0**	**93.7**	**86.5**	**89.5**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**91.5**	**98.4**	**95.3**	**97.4**	**93.2**
Toluene-D8	2037-26-5	0.2	%	**89.5**	**94.7**	**93.5**	**96.2**	**89.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH6-1.5	BH7-0.5	BH7-1.1	BH8-0.1	BH8-1
				Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		ES2237211-011	ES2237211-012	ES2237211-013	ES2237211-014	ES2237211-015
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**92.3**	**99.4**	**95.0**	**96.9**	**97.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH9-0.3	BH9-1	BH10-0.1	BH10-0.8	DA-0.5
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-016	ES2237211-017	ES2237211-018	ES2237211-019	ES2237211-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	19.5	21.4	17.5	17.1	17.3
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	8	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	21	37	15	15	28
Copper	7440-50-8	5	mg/kg	<5	11	<5	5	14
Lead	7439-92-1	5	mg/kg	12	18	18	10	17
Nickel	7440-02-0	2	mg/kg	2	6	3	4	13
Zinc	7440-66-6	5	mg/kg	7	11	7	8	19
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH9-0.3	BH9-1	BH10-0.1	BH10-0.8	DA-0.5
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-016	ES2237211-017	ES2237211-018	ES2237211-019	ES2237211-020
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH9-0.3	BH9-1	BH10-0.1	BH10-0.8	DA-0.5
				Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		ES2237211-016	ES2237211-017	ES2237211-018	ES2237211-019	ES2237211-020
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH9-0.3	BH9-1	BH10-0.1	BH10-0.8	DA-0.5
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-016	ES2237211-017	ES2237211-018	ES2237211-019	ES2237211-020
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**109**	**126**	**120**	**121**	**124**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**85.5**	**100**	**97.6**	**118**	**109**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**95.4**	**79.0**	**86.0**	**88.6**	**53.3**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**68.5**	**70.9**	**70.2**	**69.4**	**70.9**
2-Chlorophenol-D4	93951-73-6	0.5	%	**75.8**	**77.7**	**75.9**	**75.8**	**77.1**
2.4.6-Tribromophenol	118-79-6	0.5	%	**51.2**	**47.7**	**46.9**	**44.7**	**45.9**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**83.8**	**85.3**	**84.4**	**82.6**	**83.8**
Anthracene-d10	1719-06-8	0.5	%	**91.4**	**94.7**	**94.2**	**92.8**	**94.4**
4-Terphenyl-d14	1718-51-0	0.5	%	**87.8**	**89.5**	**88.2**	**86.9**	**88.3**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**85.8**	**90.0**	**91.0**	**85.0**	**92.6**
Toluene-D8	2037-26-5	0.2	%	**81.0**	**90.0**	**87.5**	**86.8**	**91.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH9-0.3	BH9-1	BH10-0.1	BH10-0.8	DA-0.5
			Sampling date / time	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00	14-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	ES2237211-016	ES2237211-017	ES2237211-018	ES2237211-019	ES2237211-020
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued								
4-Bromofluorobenzene	460-00-4	0.2	%	**87.8**	**95.6**	**94.3**	**90.2**	**92.7**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DA-0.1	----	----	----	----
				Sampling date / time	14-Oct-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2237211-021	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		13.6	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		8	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		77	----	----	----	----
Copper	7440-50-8	5	mg/kg		8	----	----	----	----
Lead	7439-92-1	5	mg/kg		23	----	----	----	----
Nickel	7440-02-0	2	mg/kg		6	----	----	----	----
Zinc	7440-66-6	5	mg/kg		7	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DA-0.1	----	----	----	----
				Sampling date / time	14-Oct-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2237211-021	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DA-0.1	----	----	----	----
				Sampling date / time	14-Oct-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2237211-021	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)A: Phenolic Compounds - Continued									
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DA-0.1	----	----	----	----
				Sampling date / time	14-Oct-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2237211-021	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**89.7**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**75.4**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**70.9**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**66.0**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**77.4**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**82.2**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**101**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**104**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**90.6**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**88.4**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**90.0**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DA-0.1	----	----	----	----
				Sampling date / time	14-Oct-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2237211-021	--------	--------	--------	--------
					Result	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**89.2**	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	BH1-0.5 - 14-Oct-2022 00:00	Soil sample.
EA200: Description	BH5-0.1 - 14-Oct-2022 00:00	Soil sample.

Surrogate Control Limits

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

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

ACT Geotechnical Engineer Pty Ltd

ACN 063 673 530

Environmental Division
Sydney
Work Order Reference
ES2237211

Telephone : + 61-2-8784 8555

ACT Geotechnical Engineers
5/9 Beaconsfield Street, Fyshwick, ACT,2609
PO Box 9225, Deakin, ACT, 2600
Ph: (02) 6285 1547
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26/10

Ref: C11822 Investigator: ACT Geotechnical Engineer **Email:** salim@actgeoeng.com.au Contact Person: Salim Mahmud Invoice: admin@actgeoeng.com.au			Sample Matrix		**Analysis**								
Laboratory: ALS Canberra 16B Lithgow Street ACT, 2609			Soil	Cool	Unpreserved	TRH C6-C40, BTEX, Lead	PAH	Heavy Metal (As, Cd, Cr, Cu, Ni, Zn, Hg)	OCP	PCBs	Phenols	Asbestos
	Sample ID	Container	Sampling Date										
1	BH1-0.1	A	14/10/2022	X	X	X	X	X	X	X	X	X	X (0.5)
2	BH1-0.5	A	14/10/2022	X	X	X	X	X	X	X	X	X	
3	BH2-0.3	A	14/10/2022	X	X	X	X	X	X	X	X	X	
4	BH2-1	A	14/10/2022	X	X	X	X	X	X	X	X	X	
5	BH3-0.2	A	14/10/2022	X	X	X	X	X	X	X	X	X	
6	BH3-0.9	A	14/10/2022	X	X	X	X	X	X	X	X	X	
7	BH4-0.5	A	14/10/2022	X	X	X	X	X	X	X	X	X	
8	BH4-1.4	A	14/10/2022	X	X	X	X	X	X	X	X	X	
9	BH5-0.1	A	14/10/2022	X	X	X	X	X	X	X	X	X	X (0.1)
10	BH6-0.5	A	14/10/2022	X	X	X	X	X	X	X	X	X	
11	BH6-1.5	A	14/10/2022	X	X	X	X	X	X	X	X	X	
12	BH7-0.5	A	14/10/2022	X	X	X	X	X	X	X	X	X	
13	BH7-1.1	A	14/10/2022	X	X	X	X	X	X	X	X	X	
14	BH8-0.1	A	14/10/2022	X	X	X	X	X	X	X	X	X	
	Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.								Sampler name: Salim Mahmud Date: 17/10/2022				
	Relinquished by (print and signature) Salim Mahmud Date: Time								Received by TAS Time (print and signature)		Date 18/10/22	7:3	

ACT Geotechnical Engineer Pty Ltd

ACN 063 673 530

5/9 Beaconsfield Street, Fyshwick, ACT,2609
PO Box 9225, Deakin, ACT, 2600
Ph: (02) 6285 1547
Fax: (02) 6285 1861

Ref: C11822 Investigator: ACT Geotechnical Engineer **Email:** salim@actgeoeng.com.au Contact Person: Salim Mahmud Invoice: admin@actgeoeng.com.au			Sample Matrix		**Analysis**							
Laboratory: ALS Canberra 16B Lithgow Street ACT, 2609			Soil	Cool	Unper-served	TRH C6-C40, BTEX, Lead	PAH	Heavy Metal (As, Cd, Cr, Cu, Ni, Zn, Hg)	OCP	PCBs	Phenols	Asbestos
Sample ID	Container	Sampling Date										
BH8-1	A	14/10/2022	X	X	X	X	X	X	X	X	X	X (0.5)
BH9-0.3	A	14/10/2022	X	X	X	X	X	X	X	X	X	
BH9-1	A	14/10/2022	X	X	X	X	X	X	X	X	X	
BH10-0.1	A	14/10/2022	X	X	X	X	X	X	X	X	X	
BH10-0.8	A	14/10/2022	X	X	X	X	X	X	X	X	X	
DA-0.5	A	14/10/2022	X	X	X	X	X	X	X	X	X	
DA-0.1	A	14/10/2022	X	X	X	X	X	X	X	X	X	

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.			Sampler name: Salim Mahmud Date: 17/10/2022
Relinquished by Salim Mahmud Date: Time (print and signature)			Received by Date Time (print and signature)

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2237211**	Page	: 1 of 19
Client	: **CASH SALES SYDNEY**	Laboratory	: Environmental Division Sydney
Contact	: SALIM MAHMUD	Contact	: Customer Services ES
Address	:	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: C11822	Date Samples Received	: 18-Oct-2022
Order number	: ----	Date Analysis Commenced	: 20-Oct-2022
C-O-C number	: ----	Issue Date	: 01-Nov-2022
Sampler	: SALIM MAHMUD		
Site	: ----		
Quote number	: Blanket Quote		
No. of samples received	: 21		
No. of samples analysed	: 21		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4656595)									
ES2237211-001	BH1-0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	25	20	19.9	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	7	7	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	11	11	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	13	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	22	23	0.0	No Limit
ES2237211-011	BH6-1.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	85	70	19.8	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	11	12.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	10	10.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	14	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	38	37	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	14	14.7	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4656598)									
ES2237467-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	19	24.3	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	7	32.4	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	7	27.4	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	57	50	13.4	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	994	962	3.3	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	965	961	0.4	0% - 20%
ES2237211-021	DA-0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	77	# 60	25.0	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4656598) - continued									
ES2237211-021	DA-0.1	EG005T: Nickel	7440-02-0	2	mg/kg	6	5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	7	20.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	23	27	14.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	7	9	23.1	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4656602)									
ES2237211-003	BH2-0.3	EA055: Moisture Content	----	0.1	%	19.7	18.4	6.5	0% - 50%
ES2237211-014	BH8-0.1	EA055: Moisture Content	----	0.1	%	16.2	17.0	4.4	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4656603)									
ES2237412-002	Anonymous	EA055: Moisture Content	----	0.1	%	13.8	13.2	4.6	0% - 50%
ES2237598-002	Anonymous	EA055: Moisture Content	----	0.1	%	15.8	15.8	0.0	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4656596)									
ES2237211-001	BH1-0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2237211-011	BH6-1.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4656597)									
ES2237211-021	DA-0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2237578-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4645631)									
ES2237211-001	BH1-0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2237211-011	BH6-1.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4647685)									
ES2237330-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4645630)									
ES2237211-001	BH1-0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4645630) - continued									
ES2237211-001	BH1-0.1	EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2237211-011	BH6-1.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4647686)									
ES2237330-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4647686) - continued									
ES2237330-001	Anonymous	EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4645630)									
ES2237211-001	BH1-0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2237211-011	BH6-1.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4645630) - continued									
ES2237211-011	BH6-1.5	EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4647686)									
ES2237330-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 4645629)									
ES2237211-001	BH1-0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)A: Phenolic Compounds (QC Lot: 4645629) - continued									
ES2237211-011	BH6-1.5	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 4647683)									
ES2237330-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4645629)									
ES2237211-001	BH1-0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4645629) - continued									
ES2237211-001	BH1-0.1	EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES2237211-011	BH6-1.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4647683)									
ES2237330-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4647683) - continued									
ES2237330-001	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4645628)									
ES2237211-001	BH1-0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2237211-011	BH6-1.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4647684)									
ES2237332-007	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2237330-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	260	420	46.8	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4652118)									
ES2237211-001	BH1-0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2237211-011	BH6-1.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4652129)									
ES2237483-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2237530-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4645628)									
ES2237211-001	BH1-0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2237211-011	BH6-1.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4647684)									
ES2237332-007	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2237330-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	190	270	33.5	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4647684) - continued									
ES2237330-001	Anonymous	EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4652118)									
ES2237211-001	BH1-0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2237211-011	BH6-1.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4652129)									
ES2237483-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2237530-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 4652118)									
ES2237211-001	BH1-0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2237211-011	BH6-1.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 4652129)									
ES2237483-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2237530-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4656595)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	102	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	101	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	110	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	98.7	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	102	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	104	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	96.1	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4656598)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	112	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	125	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	125	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	111	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	118	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	115	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	104	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4656596)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	113	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4656597)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	113	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4645631)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	82.8	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4647685)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.8	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 4645630)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.5	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.5	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.0	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	99.7	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	63.0	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4645630) - continued								
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.1	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	100	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	100	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	97.7	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	103	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4647686)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.7	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.7	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	78.6	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	84.0	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	81.7	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	76.3	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4645630)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	102	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	83.4	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	67.0	119

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4645630) - continued								
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.4	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	93.7	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	100	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	90.5	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.1	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	96.7	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4647686)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	76.5	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.1	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	92.3	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.5	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.2	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	81.8	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.1	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	79.4	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	91.0	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.9	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.6	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	61.8	41.0	123
EP075(SIM)A: Phenolic Compounds (QCLot: 4645629)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	100	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	98.0	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	98.7	71.0	123

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 4645629) - continued								
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	104	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	82.0	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	96.2	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	90.8	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	94.6	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	88.5	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	74.8	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	79.8	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	47.2	10.0	80.0
EP075(SIM)A: Phenolic Compounds (QCLot: 4647683)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	99.1	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	99.6	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	103	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	110	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	69.7	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	90.8	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	83.0	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	86.9	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	81.8	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	82.9	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	89.8	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	47.1	10.0	80.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4645629)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	106	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	87.3	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	94.9	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	93.9	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	103	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	105	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	104	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	104	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	91.4	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	90.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	103	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.5	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	106	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	105	62.0	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4645629) - continued								
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	99.2	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4647683)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	98.8	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	106	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	107	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	108	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	104	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	112	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	107	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	106	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	94.4	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	100	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	90.0	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	109	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	91.7	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	96.5	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	93.3	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	91.9	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4645628)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	111	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	108	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	108	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4647684)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	92.7	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	94.1	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	96.6	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4652118)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	88.3	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4652129)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	93.2	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4645628)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	111	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	105	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	112	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4647684)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	95.9	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	92.6	74.0	138

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4647684) - continued								
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	97.8	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4652118)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	90.8	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4652129)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	94.3	68.4	128
EP080: BTEXN (QCLot: 4652118)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	91.4	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.1	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	90.7	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	94.0	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	93.3	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	86.5	63.0	119
EP080: BTEXN (QCLot: 4652129)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	93.8	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	93.7	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	91.0	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	91.6	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	93.8	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	89.7	63.0	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4656595)							
ES2237211-001	BH1-0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	93.4	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	80.7	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	86.1	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	95.4	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	96.0	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4656598)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4656598) - continued							
ES2237211-021	DA-0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	92.4	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.9	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	77.6	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	90.3	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.6	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	98.6	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	97.4	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4656596)							
ES2237211-001	BH1-0.1	EG035T: Mercury	7439-97-6	5 mg/kg	93.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4656597)							
ES2237211-021	DA-0.1	EG035T: Mercury	7439-97-6	5 mg/kg	102	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4645631)							
ES2237211-001	BH1-0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	93.8	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4647685)							
ES2237330-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	113	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4645630)							
ES2237211-001	BH1-0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	105	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	97.0	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	105	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	108	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	113	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	81.9	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4647686)							
ES2237330-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	98.0	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	105	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	99.4	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	113	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	89.2	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	86.3	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4645630)							
ES2237211-001	BH1-0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	84.5	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	110	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	100	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	107	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	78.2	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4647686)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4647686) - continued							
ES2237330-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	80.0	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	98.6	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	93.4	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	96.1	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	92.3	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 4645629)							
ES2237211-001	BH1-0.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	92.1	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	90.9	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	83.8	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.7	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	67.8	20.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 4647683)							
ES2237330-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	91.8	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	92.7	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	80.6	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	83.8	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	63.9	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4645629)							
ES2237211-001	BH1-0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	87.6	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	99.0	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4647683)							
ES2237330-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	107	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4645628)							
ES2237211-001	BH1-0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	125	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	130	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	118	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4647684)							
ES2237330-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	91.1	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	97.6	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	104	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4652118)							
ES2237211-001	BH1-0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.7	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4652129)							
ES2237483-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	100	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4645628)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4645628) - continued							
ES2237211-001	BH1-0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	125	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	102	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	107	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4647684)							
ES2237330-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	98.3	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	103	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	88.0	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4652118)							
ES2237211-001	BH1-0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	98.4	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4652129)							
ES2237483-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	107	70.0	130
EP080: BTEXN (QCLot: 4652118)							
ES2237211-001	BH1-0.1	EP080: Benzene	71-43-2	2.5 mg/kg	91.4	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	92.0	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	93.9	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	94.2	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	93.9	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	89.3	70.0	130
EP080: BTEXN (QCLot: 4652129)							
ES2237483-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	91.0	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	88.2	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.8	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	91.1	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.4	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	86.7	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2237211**	Page	: 1 of 9
Client	: **CASH SALES SYDNEY**	Laboratory	: Environmental Division Sydney
Contact	: SALIM MAHMUD	Telephone	: +61-2-8784 8555
Project	: C11822	Date Samples Received	: 18-Oct-2022
Site	: ----	Issue Date	: 01-Nov-2022
Sampler	: SALIM MAHMUD	No. of samples received	: 21
Order number	: ----	No. of samples analysed	: 21

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	ES2237211--021	DA-0.1	**Chromium**	7440-47-3	25.0 %	0% - 20%	**RPD exceeds LOR based limits**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
BH1-0.1,	BH1-0.5,	**14-Oct-2022**	**----**	----	----	**24-Oct-2022**	28-Oct-2022	✓
BH2-0.3,	BH2-1,							
BH3-0.2,	BH3-0.9,							
BH4-0.5,	BH4-1.4,							
BH5-0.1,	BH6-0.5,							
BH6-1.5,	BH7-0.5,							
BH7-1.1,	BH8-0.1,							
BH8-1,	BH9-0.3,							
BH9-1,	BH10-0.1,							
BH10-0.8,	DA-0.5,							
DA-0.1								
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)								
BH1-0.5,	BH5-0.1	**14-Oct-2022**	**----**	----	----	**20-Oct-2022**	12-Apr-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**25-Oct-2022**	12-Apr-2023	✓	**25-Oct-2022**	12-Apr-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**25-Oct-2022**	11-Nov-2022	✓	**25-Oct-2022**	11-Nov-2022	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**24-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	03-Dec-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
BH1-0.1,	BH1-0.5,	**14-Oct-2022**	**24-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	03-Dec-2022	✓
BH2-0.3,	BH2-1,							
BH3-0.2,	BH3-0.9,							
BH4-0.5,	BH4-1.4,							
BH5-0.1,	BH6-0.5,							
BH6-1.5,	BH7-0.5,							
BH7-1.1,	BH8-0.1,							
BH8-1,	BH9-0.3,							
BH9-1,	BH10-0.1,							
BH10-0.8,	DA-0.5,							
DA-0.1								
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
BH1-0.1,	BH1-0.5,	**14-Oct-2022**	**24-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	03-Dec-2022	✓
BH2-0.3,	BH2-1,							
BH3-0.2,	BH3-0.9,							
BH4-0.5,	BH4-1.4,							
BH5-0.1,	BH6-0.5,							
BH6-1.5,	BH7-0.5,							
BH7-1.1,	BH8-0.1,							
BH8-1,	BH9-0.3,							
BH9-1,	BH10-0.1,							
BH10-0.8,	DA-0.5,							
DA-0.1								
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM))								
BH1-0.1,	BH1-0.5,	**14-Oct-2022**	**24-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	03-Dec-2022	✓
BH2-0.3,	BH2-1,							
BH3-0.2,	BH3-0.9,							
BH4-0.5,	BH4-1.4,							
BH5-0.1,	BH6-0.5,							
BH6-1.5,	BH7-0.5,							
BH7-1.1,	BH8-0.1,							
BH8-1,	BH9-0.3,							
BH9-1,	BH10-0.1,							
BH10-0.8,	DA-0.5,							
DA-0.1								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**24-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	03-Dec-2022	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**21-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	28-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**24-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	03-Dec-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**21-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	28-Oct-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**24-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	03-Dec-2022	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BH1-0.1, BH1-0.5, BH2-0.3, BH2-1, BH3-0.2, BH3-0.9, BH4-0.5, BH4-1.4, BH5-0.1, BH6-0.5, BH6-1.5, BH7-0.5, BH7-1.1, BH8-0.1, BH8-1, BH9-0.3, BH9-1, BH10-0.1, BH10-0.8, DA-0.5, DA-0.1	**14-Oct-2022**	**21-Oct-2022**	28-Oct-2022	✓	**24-Oct-2022**	28-Oct-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	25	**12.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	23	**13.04**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	22	**13.64**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	22	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

LOTSEARCH

LOTSEARCH ENVIRO LITE

Date: 16 Nov 2022 10:09:16

Reference: LS037990 EL

Address: Mountain Ash Road, Brisbane Grove, NSW 2580

Dataset Listing

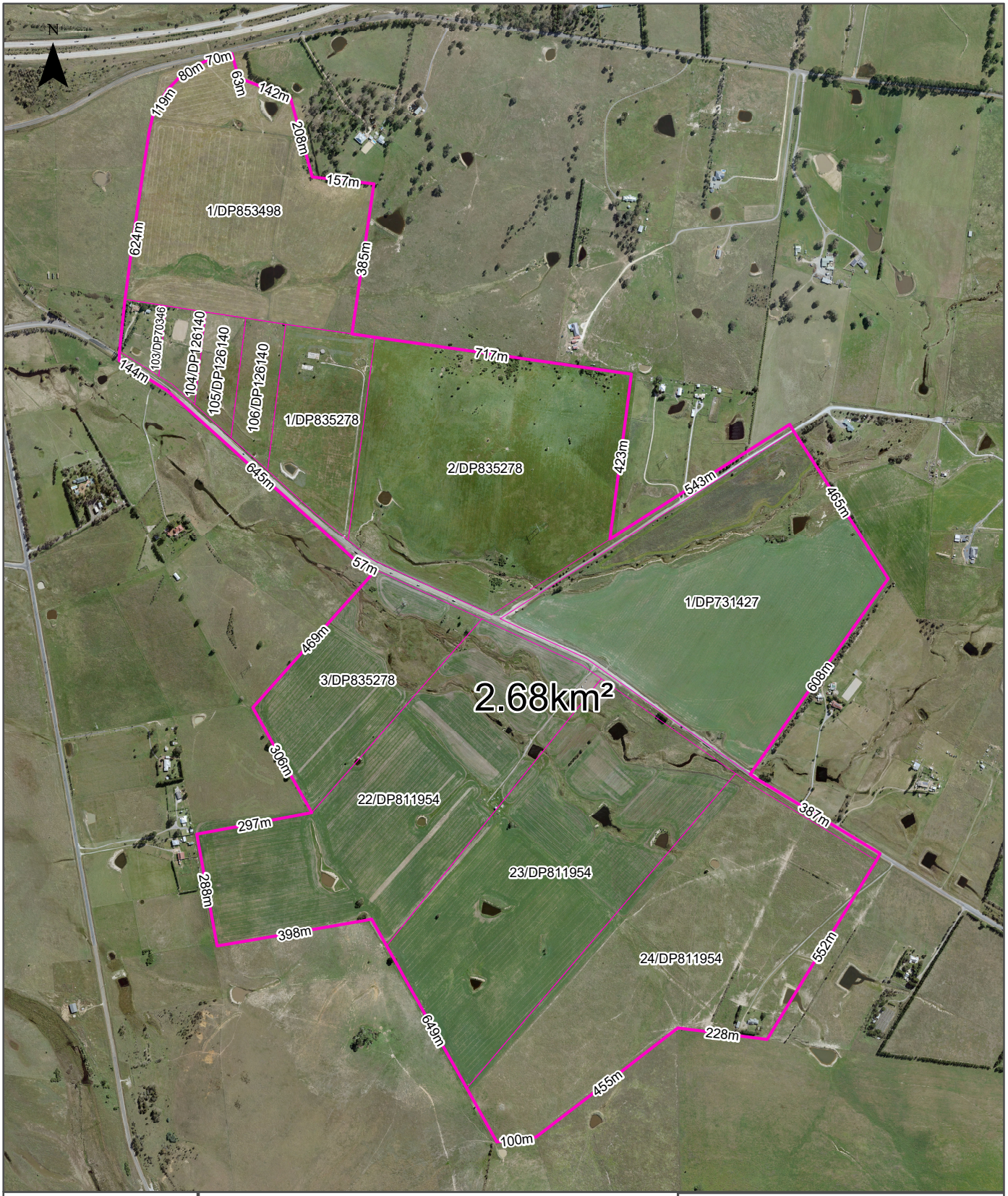
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	04/11/2022	04/11/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	08/11/2022	14/10/2022	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	02/09/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	08/11/2022	23/09/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	09/11/2022	09/11/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	09/11/2022	09/11/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	09/11/2022	09/11/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	3	3	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	2	2
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	1	3	20
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	15/11/2022	15/11/2022	Quarterly	1000m	2	2	3
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	Annually	1000m	2	2	2
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	1	1	44

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	4	7	14
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	1
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	2	2	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	2	3	4
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	09/11/2022	28/10/2022	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	09/11/2022	09/11/2022	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	2	2	5
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	2	3	9
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	18/10/2022	01/07/2022	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	09/11/2022	28/10/2022	Monthly	1000m	0	3	6
Bush Fire Prone Land	NSW Rural Fire Service	14/11/2022	25/10/2022	Weekly	1000m	1	1	3
Vegetation of Southern Forests	NSW Office of Environment & Heritage	09/12/2014	10/10/2011	Annually	1000m	1	1	2
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	15/11/2022	15/11/2022	Weekly	10000m	-	-	-

Site Diagram

Mountain Ash Road, Brisbane Grove, NSW 2580



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 2.68km²

Total Perimeter: 9.59km

Scale: 0 50 100 200 300 400 500 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 November 2022

Contaminated Land

Mountain Ash Road, Brisbane Grove, NSW 2580

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	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

Contaminated Land

Mountain Ash Road, Brisbane Grove, NSW 2580

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

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

Waste Management & Liquid Fuel Facilities

Mountain Ash Road, Brisbane Grove, NSW 2580

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	Direction
N/A	No records in buffer											

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
N/A	No records in buffer										

PFAS Investigation & Management Programs

Mountain Ash Road, Brisbane Grove, NSW 2580

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated 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 Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being 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 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

Mountain Ash Road, Brisbane Grove, NSW 2580

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

Mountain Ash Road, Brisbane Grove, NSW 2580

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

EPA Activities

Mountain Ash Road, Brisbane Grove, NSW 2580

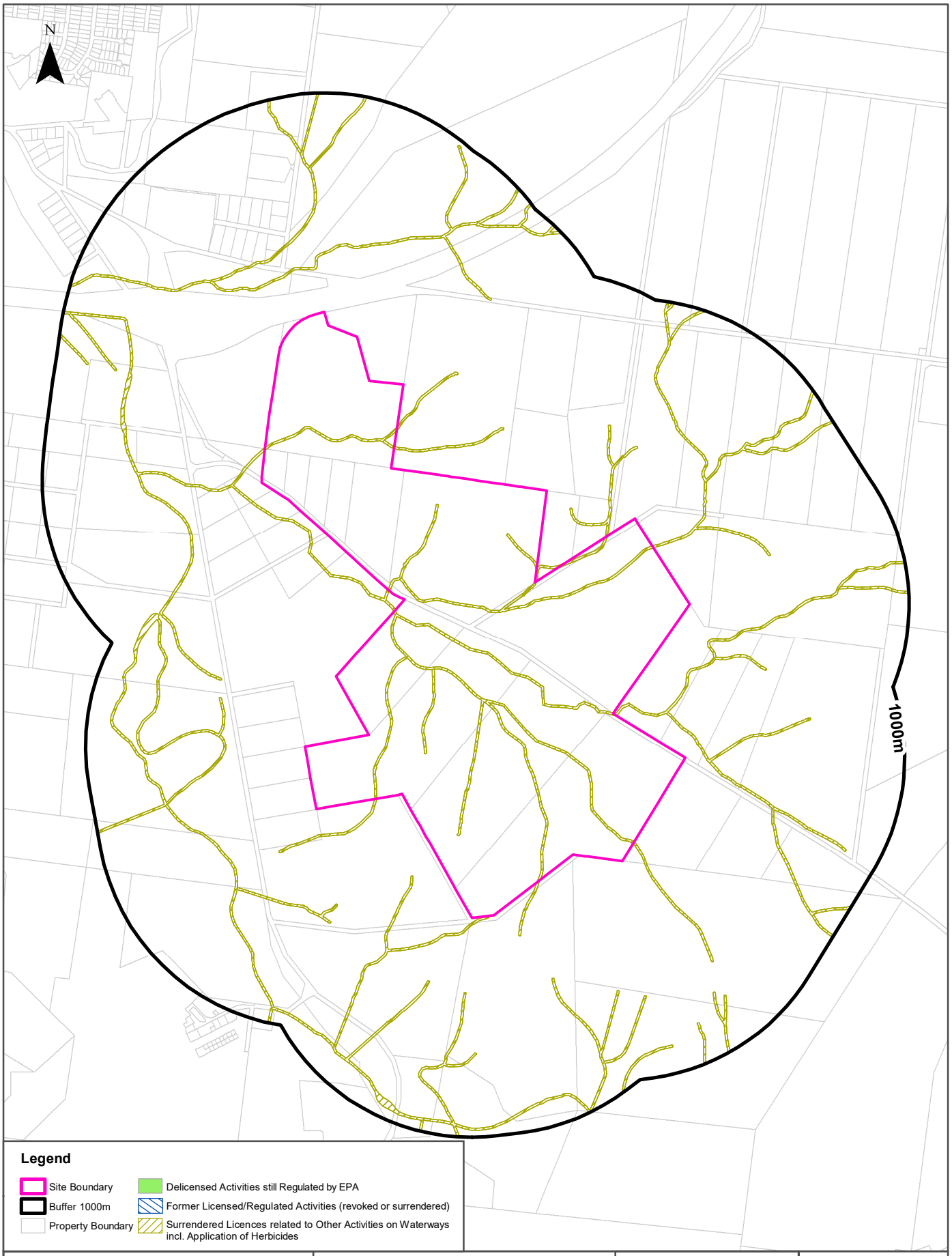
Licensed Activities under the POEO Act 1997

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
N/A	No records in buffer							

Delicensed & Former Licensed EPA Activities

Mountain Ash Road, Brisbane Grove, NSW 2580



EPA Activities

Mountain Ash Road, Brisbane Grove, NSW 2580

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

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

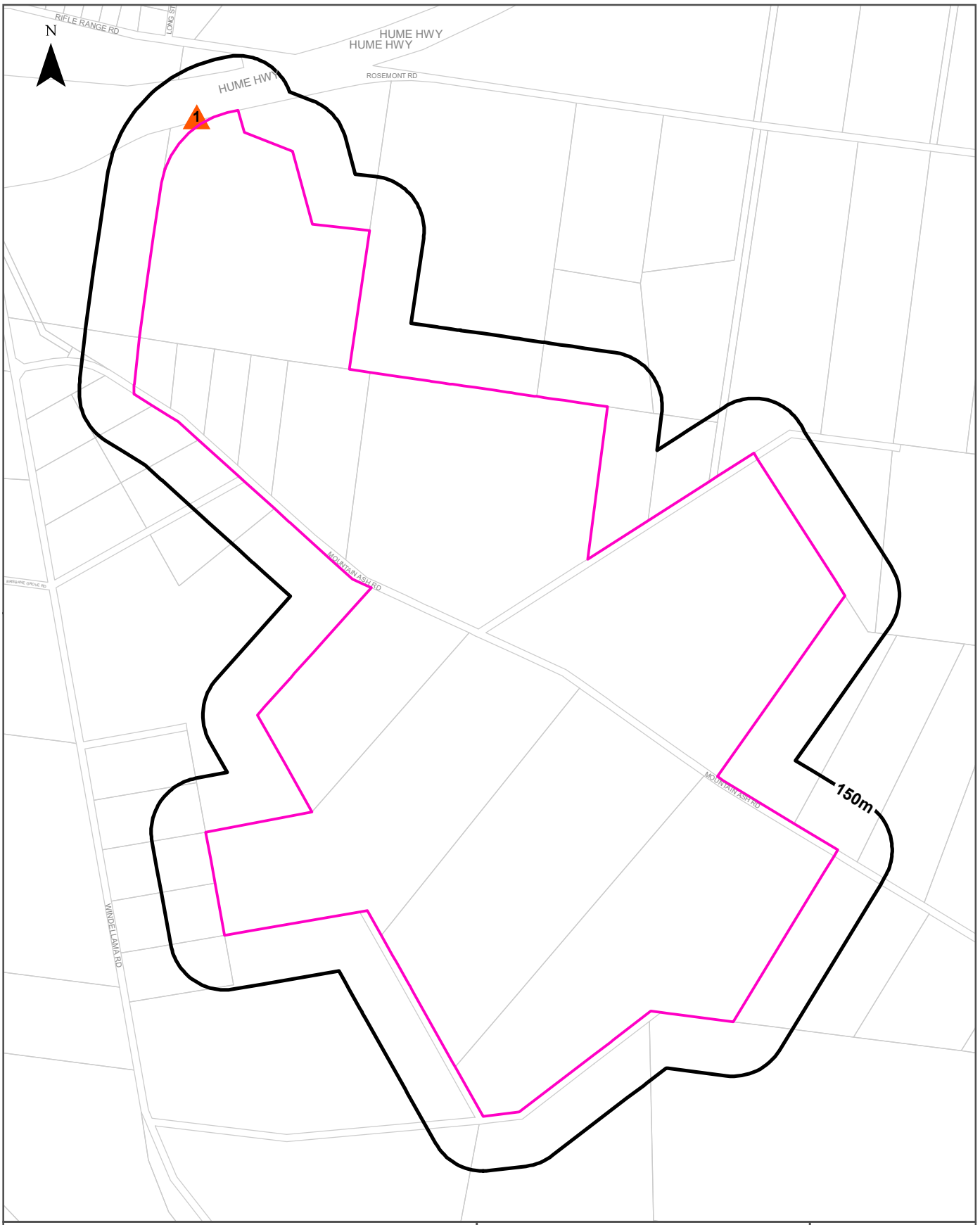
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

Mountain Ash Road, Brisbane Grove, NSW 2580



Legend

- Site Boundary
- Buffer 150m
- Property Boundary
- 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

Scale: 0 200 400 600 800 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 16 November 2022

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Historical Business Directories

Mountain Ash Road, Brisbane Grove, NSW 2580

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, 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
N/A	No records in buffer						

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, 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
1	LIVESTOCK TRANSPORTS.	Fife K A., Rosemont St, Goulburn 2580	147398	1991	Road Match	0m
	LIVESTOCK CARRIERS	Fife, K. A., Rosemont St., Goulburn 2580	155842	1982	Road Match	0m

Historical Business Directories

Mountain Ash Road, Brisbane Grove, NSW 2580

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
N/A	No records in buffer						

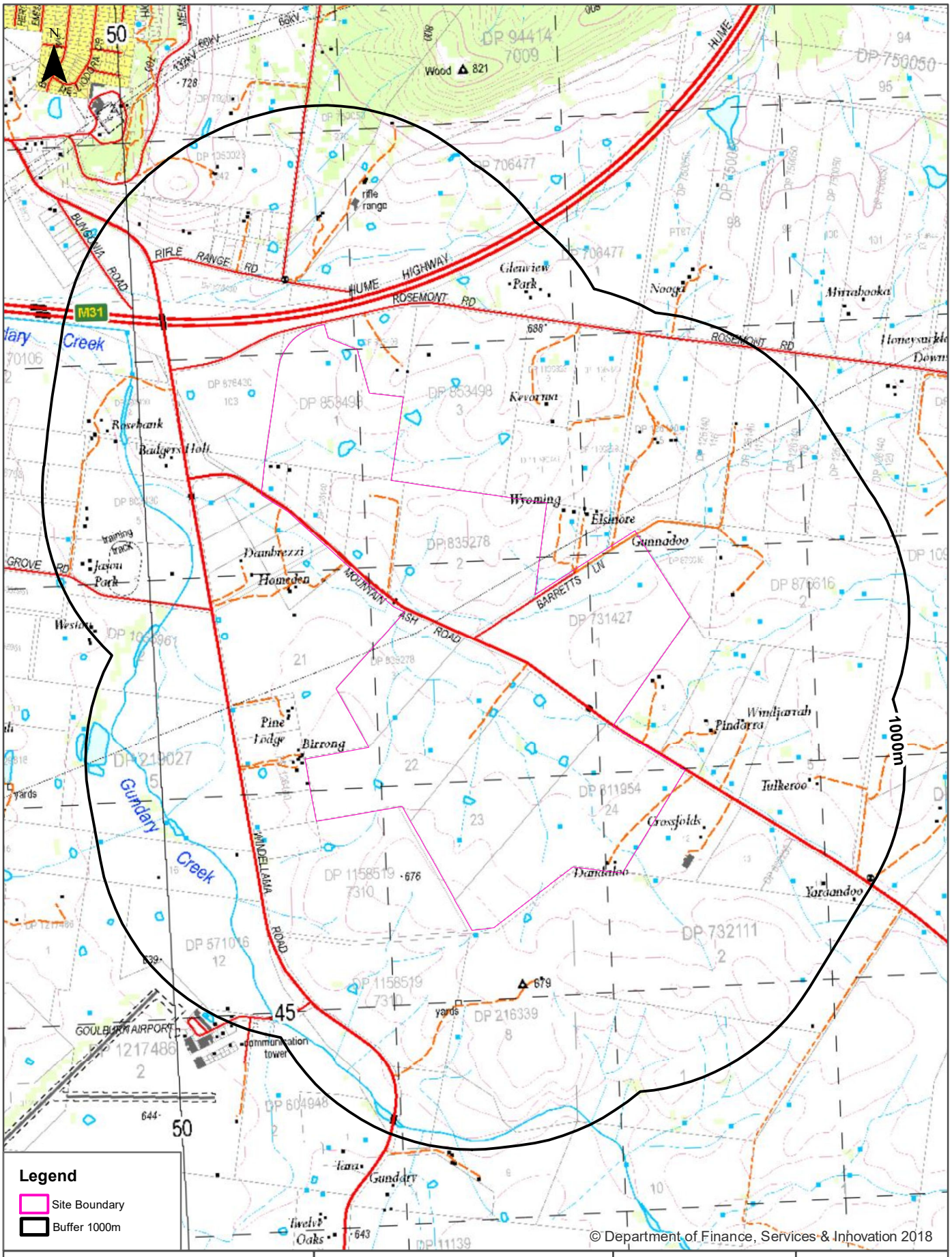
Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

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
N/A	No records in buffer					

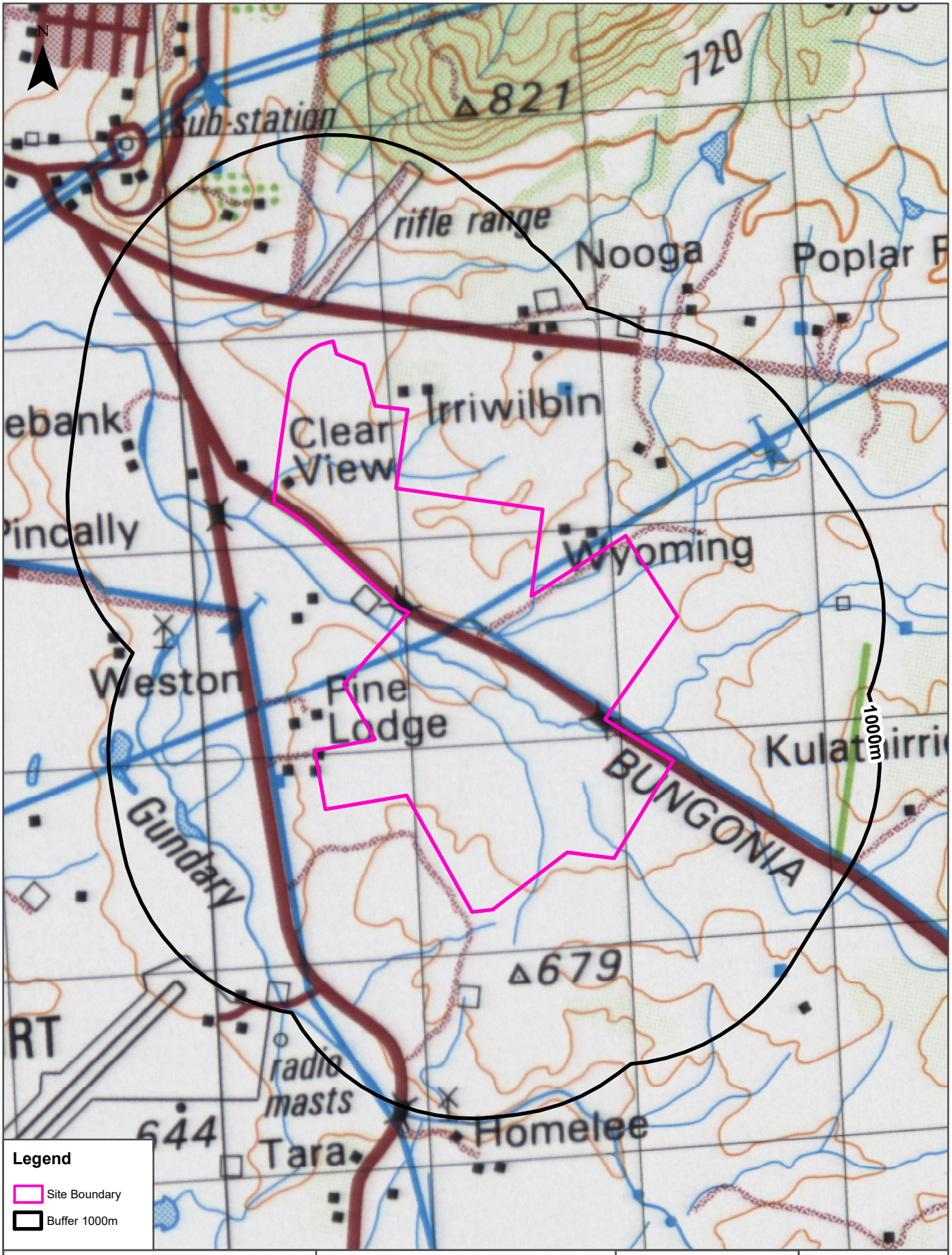
Topographic Map 2015

Mountain Ash Road, Brisbane Grove, NSW 2580



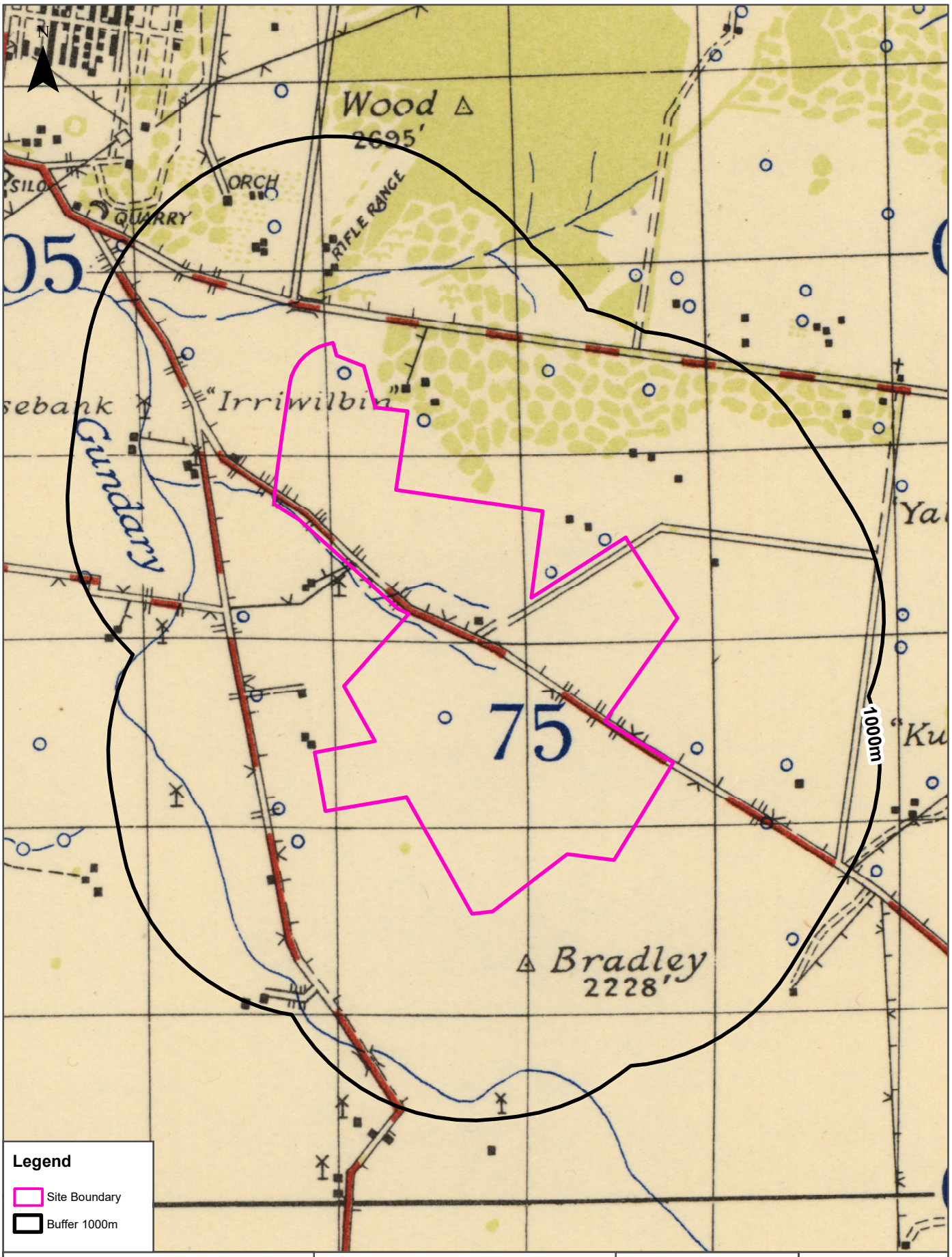
Historical Map 1981

Mountain Ash Road, Brisbane Grove, NSW 2580



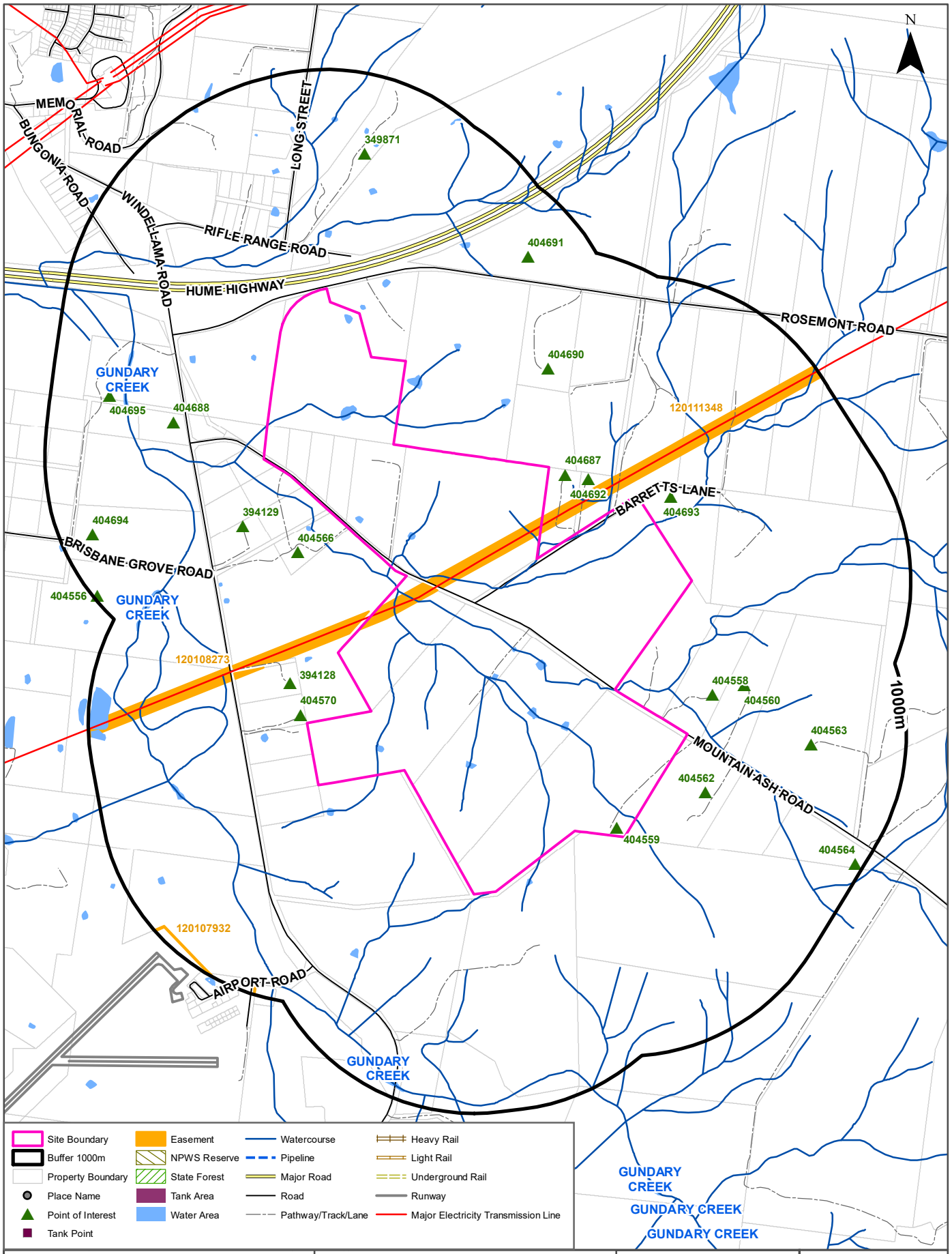
Historical Map c.1942

Mountain Ash Road, Brisbane Grove, NSW 2580



Topographic Features

Mountain Ash Road, Brisbane Grove, NSW 2580



Topographic Features

Mountain Ash Road, Brisbane Grove, NSW 2580

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
404559	Homestead	DANDALOO	0m	On-site
404570	Homestead	BIRRONG	49m	South West
404687	Homestead	WYOMING	79m	North East
404693	Homestead	GUNNADOO	126m	North East
404692	Homestead	ELSINORE	182m	North East
394128	Homestead	PINE LODGE	198m	West
404562	Homestead	CROSSFOLDS	208m	South East
404558	Homestead	PINDARRA	212m	East
404566	Homestead	HOMEDEN	235m	West
394129	Homestead	DAMBREZZI	309m	West
404560	Homestead	WINDJARRAH	342m	East
404688	Homestead	BADGERS HOLT	427m	North West
404690	Homestead	KEVORMA	444m	North
404563	Homestead	TULKEROO	566m	East
349871	Target Range	RIFLE RANGE	640m	North
404695	Homestead	ROSEBANK	730m	North West
404691	Homestead	GLENVIEW PARK	734m	North
404694	Homestead	JASON PARK	854m	West
404564	Homestead	YARAANDOO	962m	South East
404556	Homestead	WESTON	982m	West

Topographic Features

Mountain Ash Road, Brisbane Grove, NSW 2580

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
N/A	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
N/A	No records in buffer					

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
120108273	Primary	Undefined		0m	On-site
120111348	Primary	Undefined		0m	On-site
120107932	Primary	Undefined		937m	South West

Topographic Features

Mountain Ash Road, Brisbane Grove, NSW 2580

State Forest

What State Forest exist within the dataset buffer?

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

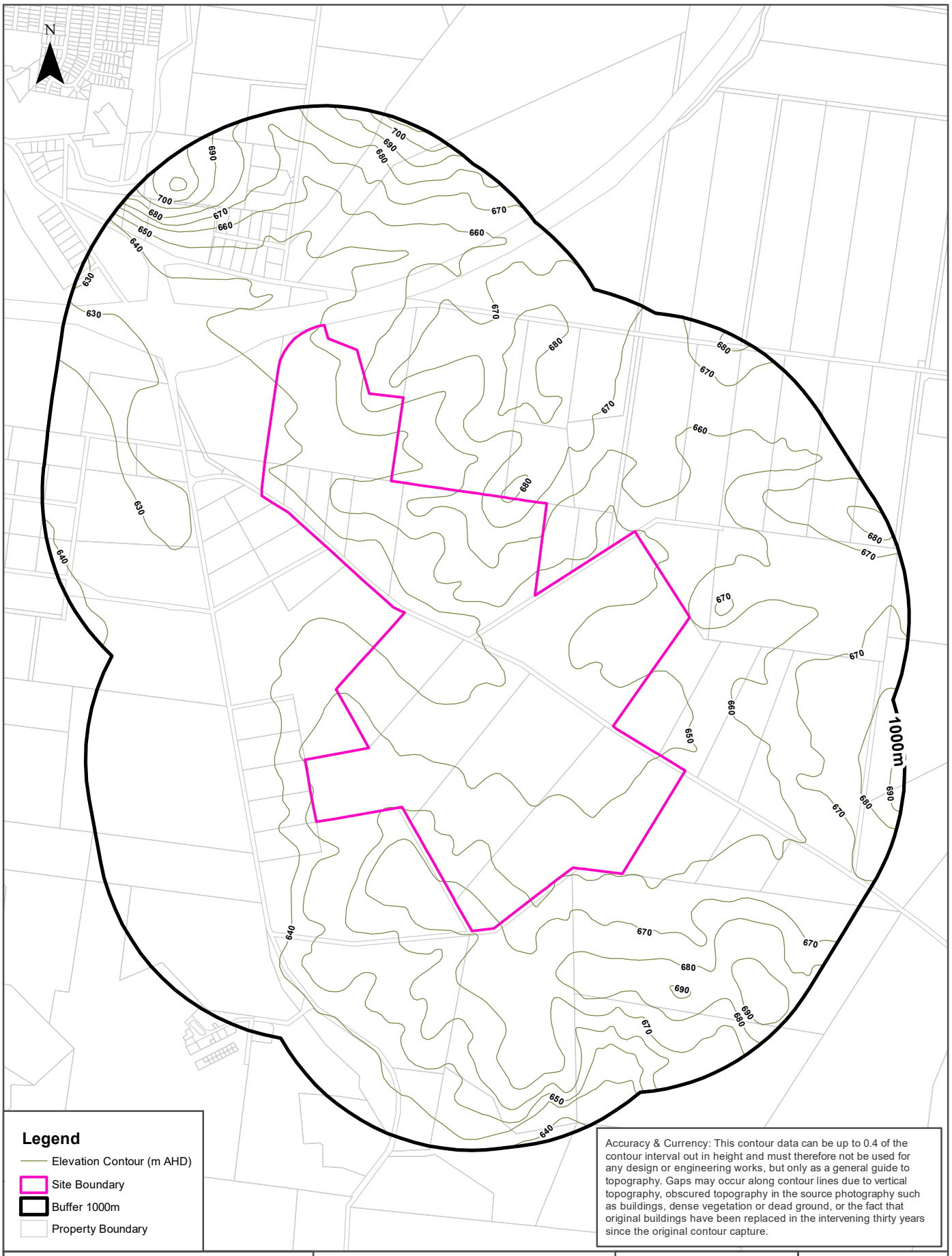
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

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

Elevation Contours (m AHD)

Mountain Ash Road, Brisbane Grove, NSW 2580



Hydrogeology & Groundwater

Mountain Ash Road, Brisbane Grove, NSW 2580

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Fractured or fissured, extensive aquifers of low to moderate productivity	0m	On-site
Porous, extensive aquifers of low to moderate productivity	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

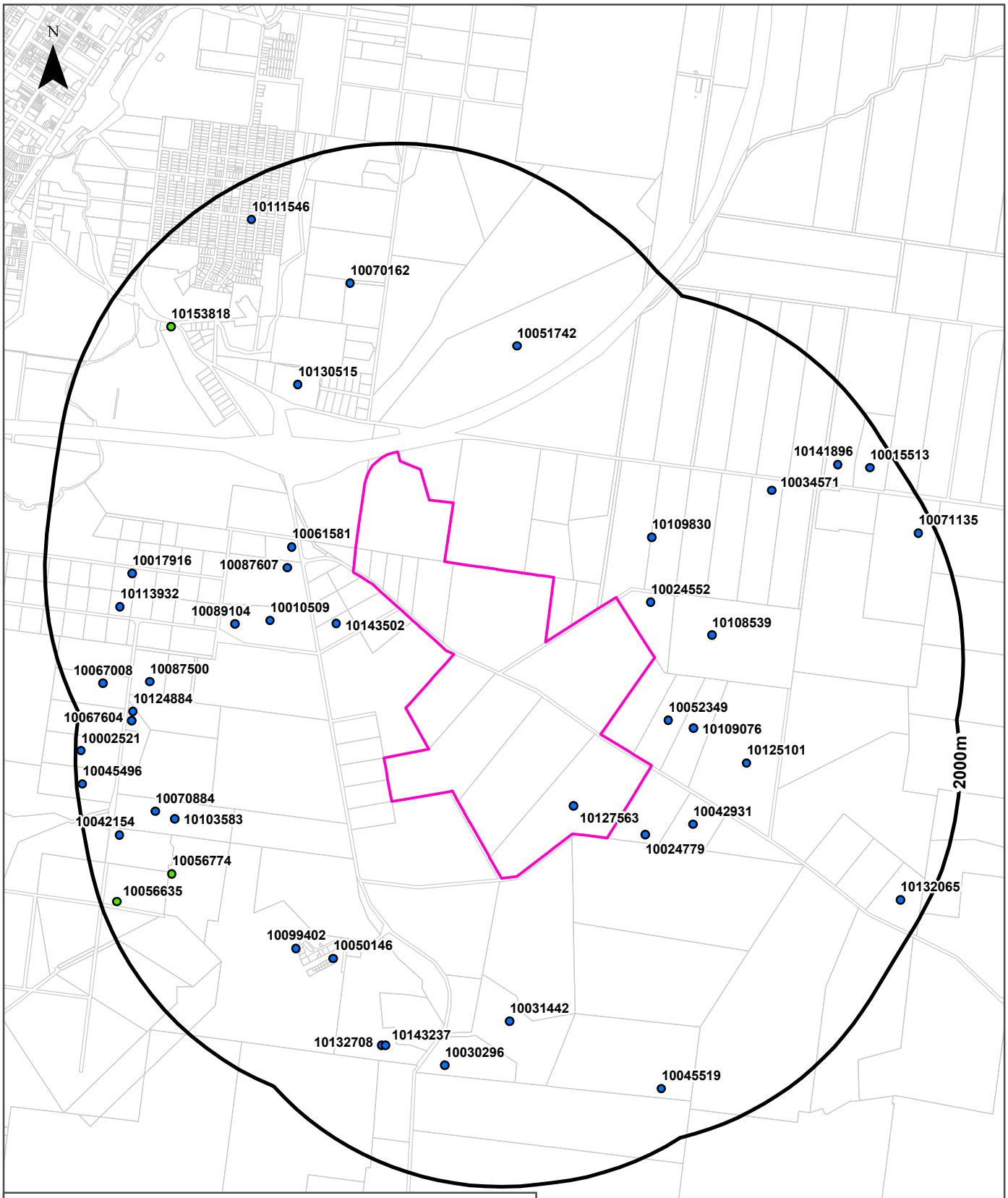
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

Mountain Ash Road, Brisbane Grove, NSW 2580



Legend

- Site Boundary
- Buffer 2000m
- Property Boundary

Borehole

- Commercial and Industrial
- Dewatering
- Exploration
- Irrigation
- Monitoring
- Other; Unknown
- Stock and Domestic
- Water Supply

Scale: 0 100 200 400 600 800 1,000 1,200 1,400 1,600 1,800 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 16 November 2022

Hydrogeology & Groundwater

Mountain Ash Road, Brisbane Grove, NSW 2580

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10127563	GW103613	Water Supply	Functioning	03/01/2001	60.00		AHD	1100			0m	On-site
10024552	GW105702	Water Supply	Functioning	08/06/2003	36.00		AHD		1.800	6.00	173m	North East
10024779	GW105293	Water Supply	Functioning	30/11/2001	54.00		AHD		0.875	12.00	200m	South East
10052349	GW100794	Water Supply	Functioning	26/09/1997	57.00		AHD		0.450	7.00	306m	East
10143502	GW101460	Water Supply	Functioning	14/03/1997	19.00		AHD	700	2.500	2.00	341m	West
10109076	GW107288	Water Supply	Functioning	24/07/2003	80.00		AHD		0.947		365m	East
10108539	GW112388	Water Supply	Functioning	11/10/2012	78.00		AHD		0.100	43.00	400m	East
10061581	GW105515	Water Supply	Unknown	01/12/2002	38.00		AHD		2.275	5.00	409m	North West
10087607	GW107321	Water Supply	Functioning	23/08/2005	76.00		AHD		0.379		427m	North West
10042931	GW108307	Water Supply	Functioning	15/06/2006	51.00		AHD		1.000	9.00	430m	South East
10109830	GW043480	Water Supply	Unknown	01/07/1974	32.60		AHD	Stock			452m	North East
10125101	GW110287	Water Supply	Unknown	03/07/2009	96.00		AHD	1300	2.500	14.00	618m	East
10010509	GW068978	Water Supply	Unknown	28/12/1990	48.00		AHD				623m	West
10130515	GW101107	Water Supply	Functioning	27/03/1997	97.00		AHD	380	0.430		712m	North West
10089104	GW108603	Water Supply	Functioning	05/07/2004	56.00		AHD		0.947		837m	West
10031442	GW110839	Water Supply	Unknown	20/02/2008	54.00		AHD	Fresh	0.625	3.00	930m	South
10051742	GW108820	Water Supply	Functioning	14/05/2006	42.00		AHD		0.880	16.00	1015m	North
10050146	GW108626	Water Supply	Functioning	17/06/2006	24.00		AHD		1.660		1088m	South West
10070162	GW106678	Water Supply	Functioning	14/04/2004	54.00		AHD	Fair	0.875	30.00	1132m	North
10099402	GW022374	Water Supply	Unknown	01/09/1964			AHD				1137m	South West
10034571	GW049567	Water Supply	Unknown	01/07/1974	32.30		AHD	Good			1224m	North East
10030296	GW110288	Water Supply	Unknown	01/07/2009	48.00		AHD		1.500	7.00	1266m	South
10143237	GW035796	Water Supply	Unknown	01/01/1973	28.90		AHD				1318m	South
10132708	GW037156	Water Supply	Functioning		3.90		AHD				1333m	South
10103583	GW106549	Water Supply	Functioning	16/06/2004	78.00		AHD		0.600	56.00	1402m	West
10017916	GW073390	Water Supply	Unknown	31/07/1995	36.00		AHD	Poor			1433m	West
10056774	GW115801	Stock and Domestic	Functioning	15/12/2017	60.00		AHD			11.50	1499m	South West
10087500	GW043105	Water Supply	Unknown	01/06/1973	56.60		AHD				1499m	West
10070884	GW068977	Water Supply	Unknown	14/12/1990			AHD		0.450		1519m	West
10113932	GW005226	Water Supply	Unknown	01/02/1959	34.70		AHD				1529m	West

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10153818	GW116730	Stock and Domestic	Functioning	24/09/2018	150.00		AHD				1586m	North West
10124884	GW067922	Water Supply	Unknown	23/01/2009	96.00		AHD	1700	1.000	24.00	1650m	West
10067604	GW043104	Water Supply	Unknown	01/06/1973	52.40		AHD	Good			1652m	West
10045519	GW025589	Water Supply	Unknown	01/01/1965	18.29		AHD				1664m	South
10141896	GW046660	Water Supply	Unknown	01/10/1976	35.00		AHD	1001-3000 ppm			1675m	North East
10111546	GW101098	Water Supply	Functioning	01/03/1996	99.00		AHD	Good	0.500	24.40	1758m	North West
10042154	GW065221	Water Supply	Unknown	07/04/1988	42.00		AHD				1774m	West
10067008	GW058602	Water Supply	Functioning	01/04/1983	68.60		AHD	Good Stock			1777m	West
10132065	GW111903	Water Supply	Functioning	01/03/2006	66.00		AHD	240	1.200	11.00	1836m	South East
10015513	GW114851	Water Supply	Functioning	22/11/2013	60.00		AHD		0.130	11.00	1841m	North East
10071135	GW105238	Water Supply	Functioning	02/12/2002	60.00		AHD		0.442		1894m	East
10056635	GW115705	Stock and Domestic	Unknown	31/10/2017	78.00		AHD			18.00	1897m	South West
10045496	GW061425	Water Supply	Unknown	01/01/1986	30.40		AHD	Good			1959m	West
10002521	GW103755	Water Supply	Unknown	02/03/2001	66.00		AHD	V.Salty			1961m	West

Hydrogeology & Groundwater

Mountain Ash Road, Brisbane Grove, NSW 2580

Driller's Logs

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

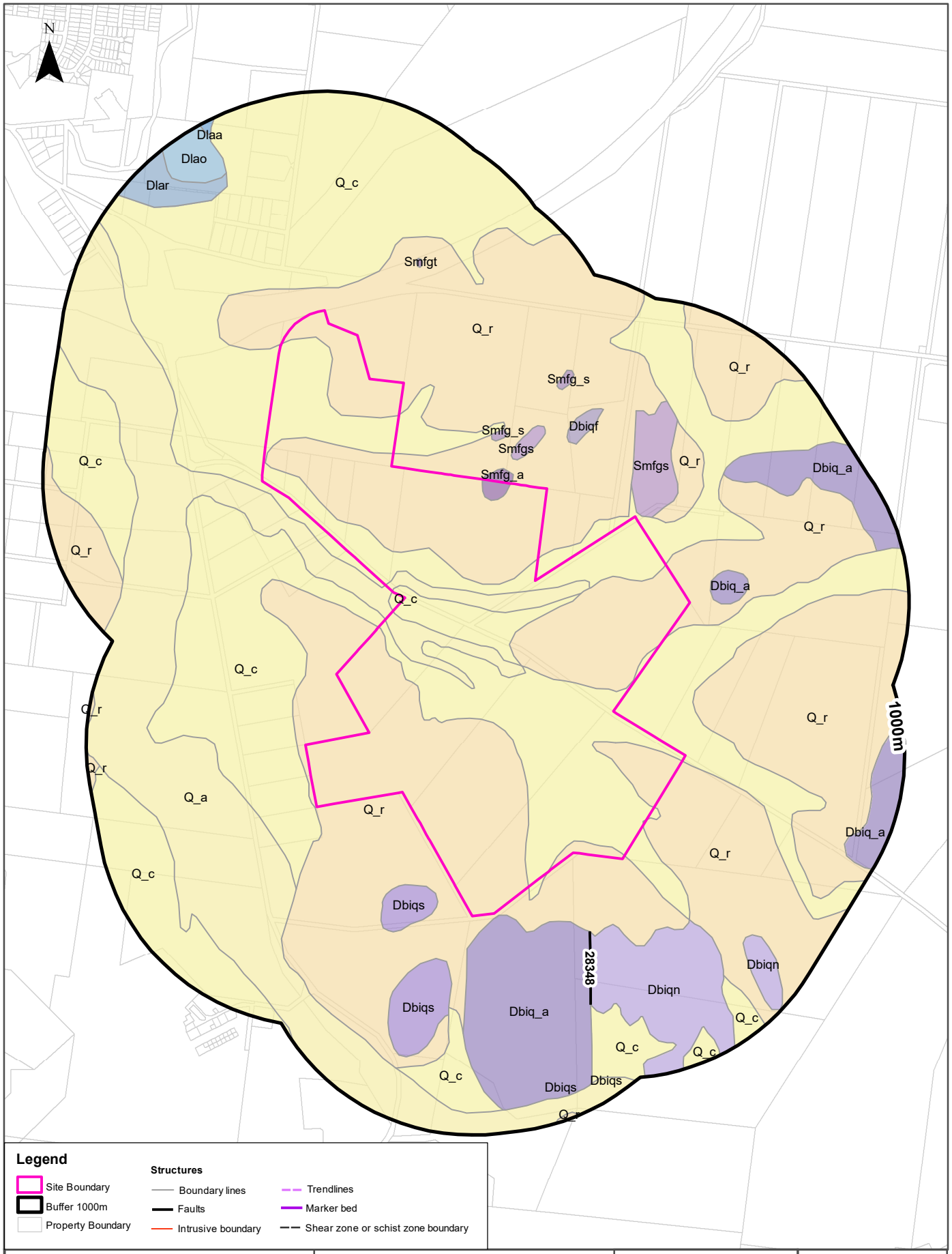
NGIS Bore ID	Drillers Log	Distance	Direction
10127563	0.00m-1.50m TOPSOIL BROWN CLAY 1.50m-18.00m WEATHERED VOLCANICS 18.00m-60.00m BLUE FRACTURED VOLCANICS	0m	On-site
10024552	0.00m-3.00m clay 3.00m-36.00m basalt	173m	North East
10024779	0.00m-1.50m SOIL,CLAY 1.50m-8.00m WEATHERED VOLCANICS 8.00m-54.00m VOLCANICS FRACTURED	200m	South East
10052349	0.00m-3.00m TOPSOIL 3.00m-5.30m BROWN CLAY 5.30m-57.00m SILTSTONE	306m	East
10143502	0.00m-0.20m TOP SOIL 0.20m-9.00m CLAY (LOAMY ?) 9.00m-19.00m VERY FRACTURED SILT STONE	341m	West
10109076	0.00m-1.00m topsoil 1.00m-2.00m clay 2.00m-34.00m shale, soft 34.00m-63.00m shale, hard 63.00m-80.00m basalt	365m	East
10108539	0.00m-0.30m TOPSOIL 0.30m-2.00m CLAYS 2.00m-9.00m SHALES BROWN 9.00m-78.00m BASALT	400m	East
10061581	0.00m-1.00m TOPSOIL 1.00m-4.00m BROWN CLAYS 4.00m-14.00m BROWN SHALES 14.00m-21.00m BLUE SHALES 21.00m-22.00m BLUE MUDSTONE 22.00m-38.00m SHALES BLUE	409m	North West
10087607	0.00m-1.00m topsoil 1.00m-5.00m clay 5.00m-7.00m gravel 7.00m-30.00m shale, soft 30.00m-76.00m granite	427m	North West
10042931	0.00m-3.00m clay, fine 3.00m-9.00m clay, sand fine 9.00m-15.00m granite, light 15.00m-21.00m clay, granite 21.00m-30.00m shale, grey blue 30.00m-38.00m shale, blue grey 38.00m-51.00m shale, blue	430m	South East
10109830	0.00m-0.30m Topsoil 0.30m-4.88m Clay 4.88m-5.79m Limestone Unconsolidated 5.79m-14.94m Shale Water Supply 14.94m-30.78m Basalt 30.78m-32.61m Basalt Water Supply	452m	North East
10125101	0.00m-1.00m SOIL, LOAMY CLAY 1.00m-9.00m VOLCANIC WHITE,BROWN, WEATHERED 9.00m-96.00m SHALES VOLCANIC GREY AND BLACK	618m	East
10010509	0.00m-1.00m 1.00m-5.00m 5.00m-30.00m 30.00m-48.00m Hard Shale	623m	West
10130515	0.00m-2.00m Red clay 2.00m-12.00m Yellow claystone 12.00m-24.00m White claystone 24.00m-61.00m Light green slate 61.00m-73.00m Siltstone 73.00m-97.00m Grey slate	712m	North West
10089104	46.00m-56.00m granite	837m	West

NGIS Bore ID	Drillers Log	Distance	Direction
10031442	0.00m-1.00m SOIL, BROWN CLAY 1.00m-6.00m GRAVEL,BROWN VOLCANIC 6.00m-32.00m VOLCANIC LIGHT GREY 32.00m-54.00m SHALE BLACK VOLCANIC	930m	South
10051742	0.00m-16.00m shale, brown and rod 16.00m-42.00m basalt, weathered	1015m	North
10050146	0.00m-8.00m clay, yellow 8.00m-15.00m clay, rock 15.00m-24.00m granite	1088m	South West
10070162	0.00m-0.40m soil 0.40m-9.00m clays, brown 9.00m-34.00m volcanic, weathered 34.00m-54.00m volcanic, fractured	1132m	North
10099402	0.00m-6.10m Clay 6.10m-7.92m Sandstone Decomposed 7.92m-8.53m Clay Gravel Water Supply 8.53m-10.97m Porphyry Decomposed 10.97m-23.77m Porphyry Water Supply	1137m	South West
10034571	0.00m-0.30m Topsoil 0.30m-2.74m Chert Clay 2.74m-8.23m Slate 8.23m-21.64m Basalt 21.64m-23.47m Basalt Fractured 23.47m-32.31m Basalt Hard Water Supply	1224m	North East
10030296	0.00m-0.50m SOIL 0.50m-5.00m CLAY LOAMY BROWN 5.00m-9.00m SHALE LIGHT BROWN 9.00m-48.00m SHALES AND SLATES GREY AND BLACK	1266m	South
10143237	0.00m-0.30m Topsoil 0.30m-5.48m Clay Sand 5.48m-14.63m Clay Gravel 14.63m-26.21m Sandstone Water Supply 26.21m-28.95m Sandstone Conglomerate	1318m	South
10103583	0.00m-0.30m topsoil 0.30m-24.00m sandstone, white soft 24.00m-72.00m granite, fractured grey 72.00m-78.00m granite, grey	1402m	West
10017916	0.00m-0.50m 0.50m-24.00m White Clay 24.00m-30.00m Brown Decomposed Limestone 30.00m-36.00m	1433m	West
10087500	0.00m-0.60m Topsoil 0.60m-2.74m Clay 2.74m-9.44m Limestone 9.44m-14.02m Limestone Chert 14.02m-25.60m Andesite 25.60m-38.70m Limestone Chert 38.70m-46.63m Granite 46.63m-49.37m Claystone 49.37m-56.69m Conglomerate	1499m	West
10113932	0.00m-0.46m Soil 0.46m-0.91m Clay Yellow 0.91m-2.44m Clay Gravel 2.44m-4.57m Clay Yellow Loose Rock 4.57m-8.53m Slate Yellow 8.53m-11.28m Slate Cream 11.28m-13.72m Clay White 13.72m-17.07m Clay Yellow Gravel Water Supply 17.07m-21.03m Slate Cream Soft Water Supply 21.03m-23.16m Slate Yellow Clay Bands 23.16m-28.35m Slate Cream Clay Bands 28.35m-34.75m Slate Fairly Hard 28.35m-34.75m Quartz Bands	1529m	West
10124884	0.00m-0.90m 0.90m-6.40m Sandy Clay/sandstone 6.40m-15.50m 15.50m-74.10m 74.10m-80.50m 80.50m-96.00m SHALE/SANDSDTONE	1650m	West
10067604	0.00m-0.60m Topsoil 0.60m-2.74m Clay 2.74m-7.92m Limestone 7.92m-12.80m Chert Bands 12.80m-23.77m Granite 23.77m-37.79m Granite Black 37.79m-45.41m Claystone Chert Water Supply 45.41m-48.15m Granite Water Supply 48.15m-52.42m Claystone Water Supply	1652m	West

NGIS Bore ID	Drillers Log	Distance	Direction
10045519	0.00m-2.44m Clay 2.44m-4.27m Sandstone Decomposed 4.27m-9.14m Porphyry Decomposed Water Supply 9.14m-18.29m Porphyry Water Supply	1664m	South
10141896	0.00m-0.30m Topsoil 0.30m-2.10m Clay 2.10m-6.40m Clay 6.40m-18.90m Clay Sandy 18.90m-30.10m Porphyry Decomposed Water Supply 30.10m-35.00m Porphyry	1675m	North East
10111546	0.00m-0.30m Top soil 0.30m-99.00m Hard sandstone	1758m	North West
10067008	0.00m-0.30m Topsoil 0.30m-5.49m Clay 5.49m-68.58m Shale	1777m	West
10015513	0.00m-1.00m TOPSOIL 1.00m-10.00m CLAY ORANGE 10.00m-13.00m ROCK WEATHERED 13.00m-60.00m GRANITE	1841m	North East
10071135	0.00m-1.00m TOPSOIL 1.00m-5.00m BROWN CLAYS 5.00m-10.00m WEATHERED VOLCANICS 10.00m-13.00m BLUE SHALES 13.00m-60.00m BLUE GRANITE	1894m	East
10045496	0.00m-0.30m Topsoil 0.30m-4.60m Clay 4.60m-25.60m Basalt Broken Water Supply 25.60m-30.40m Basalt Water Supply	1959m	West
10002521	0.00m-0.30m TOPSOIL 0.30m-1.50m STICKY CLAY 1.50m-39.00m YELLOW WEATHERED SHALE 39.00m-66.00m GREY FRACTURED SHALES SILTSTONES	1961m	West

Geology

Mountain Ash Road, Brisbane Grove, NSW 2580



Geology

Mountain Ash Road, Brisbane Grove, NSW 2580

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Q_r	Residual deposits	A weakly-consolidated regolithic residuum such as soil or saprolite mostly developed in-situ as a result of advanced weathering and/or pedogenesis.	/Residual deposits////	Quaternary (base) to Now (top)	Saprolite	0m
Q_c	Colluvium	Poorly sorted, weakly cemented to unconsolidated colluvial lenses of polymictic conglomerate with medium- to very coarse-grained sand matrix; interspersed with unconsolidated clayey and silty red-brown (aeolian) sand layers, modified by pedogenesis.	/Colluvium////	Quaternary (base) to Now (top)	Clastic sediment	0m
Q_a	Alluvium	Unconsolidated grey to brown to beige humic (±)micaceous silty clay, quartz-(±)lithic silt, fine- to medium-grained quartz-rich to quartz-lithic sand, polymictic pebble to cobble gravel (as sporadic lenses); sporadic palaeosol horizons.	/Alluvium////	Quaternary (base) to Now (top)	Clastic sediment	0m
Smfg_a	Gundary Volcanics - siltstone	Light grey massive to diffusely laminated siltstone and mudstone with lesser interbedded fine-grained lithic-quartz sandstone.	/Mount Fairy Group//Gundary Volcanics/Gundary Volcanics - siltstone/	Caudicriodus woschmidti (base) to Ozarkodina eurekaensis (top)	Siltstone	0m
Smfgs	Back Station Ignimbrite Member	Blue-grey crystal-rich welded dacitic ignimbrite containing crystals/fragments of plagioclase, quartz-hornblende, clinopyroxene and orthopyroxene, set in micro- to crypto-crystalline matrix; spherulites.	/Mount Fairy Group//Gundary Volcanics/Back Station Ignimbrite Member/	Caudicriodus woschmidti (base) to Ozarkodina eurekaensis (top)	Pyroclastic rock	19m
Dbiq_a	Quialigo Volcanics - andesite	Green-grey, medium-grained, partly amygdaloidal, crystal-rich plagioclase-clinopyroxene phyric andesite with a coarsely microcrystalline groundmass of mostly plagioclase and K-feldspar.	/Bindook Group//Quialigo Volcanics/Quialigo Volcanics - andesite/	Ancyrodelloides delta (base) to Polygnathus pireneae (top)	Andesite	19m
Dbiqs	Saltpetre Andesite Member	Green–grey, flow-banded, commonly amygdaloidal, pyroxene–feldspar-phyric andesite.	/Bindook Group//Quialigo Volcanics/Saltpetre Andesite Member/	Eognathodus kindlei (base) to Polygnathus pireneae (top)	Andesite	95m
Smfg_s	Gundary Volcanics - sandstone	Massive, medium- to coarse-grained, moderately- to well-sorted, quartzose sandstone and quartzite, with interbedded siltstone in places.	/Mount Fairy Group//Gundary Volcanics/Gundary Volcanics - sandstone/	Caudicriodus woschmidti (base) to Ozarkodina eurekaensis (top)	Sandstone	182m
Dbiqf	Four Winds Ignimbrite Member	Green-grey, lithic–crystal-rich, welded, dacitic ignimbrite and dacitic volcanic breccia.	/Bindook Group//Quialigo Volcanics/Four Winds Ignimbrite Member/	Eognathodus kindlei (base) to Eognathodus kindlei (top)	Pyroclastic rock	236m

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Dbiqn	Newacres Ignimbrite Member	Cream to grey quartz–feldspar phyric crystal-rich welded rhyolitic ignimbrite.	/Bindook Group//Quialigo Volcanics/Newacres Ignimbrite Member/	Eognathodus sulcatus (base) to Polygnathus pireneae (top)	Pyroclastic rock	301m
Smfgt	Tirranna Andesite Member	Green-grey massive to amygdaloidal pyroxene-phyric andesite affected by strong quartz-sericite + chlorite +/-pyrite alteration. Massive matrix-supported volcanic conglomerate containing rounded scoriaceous andesite clasts and rhyolite porphyry blocks.	/Mount Fairy Group//Gundary Volcanics/Tirranna Andesite Member/	Caudicriodus woschmidti (base) to Ozarkodina eurekaensis (top)	Andesite	417m
Dlar	Strathaird Formation	Arenite, shale, breccia, conglomerate, arkose. Phyllitic slate near faults.	/Lambie Group//Strathaird Formation//	Frasnian (base) to Frasnian (top)	Sandstone	681m
Dlao	Cookbundoon Formation	White to off-white, medium- to coarse-grained, moderately to poorly sorted, massive or sporadically cross-bedded, quartzose and lithic quartz sandstone with sporadic pebble to cobble conglomerate horizons and very minor red mudstone.	/Lambie Group//Cookbundoon Formation//	Famennian (base) to Famennian (top)	Quartzite	740m
Dlaa	Tarlo Formation	Purple–red to fawn or white, generally thin- to medium-bedded and sporadically thick-bedded, fine- to medium-grained, lithic–quartz sandstone interbedded with purple, red or green, massive- or thin-bedded siltstone.	/Lambie Group//Tarlo Formation//	Famennian (base) to Tournaisian (top)	Sandstone	933m

Linear Geological Structures

What are the Dyke, Sill, Fracture, Lineament and Vein trendlines within the dataset buffer?

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

What are the Faults, Shear zones or Schist zones, Intrusive boundaries & Marker beds within the dataset buffer?

Map ID	Boundary Type	Description	Map Sheet Name	Distance
28348	Faulted boundary	Fault, position approximate	Goulburn 1:100,000 Geological Sheet	332m

Naturally Occurring Asbestos Potential

Mountain Ash Road, Brisbane Grove, NSW 2580

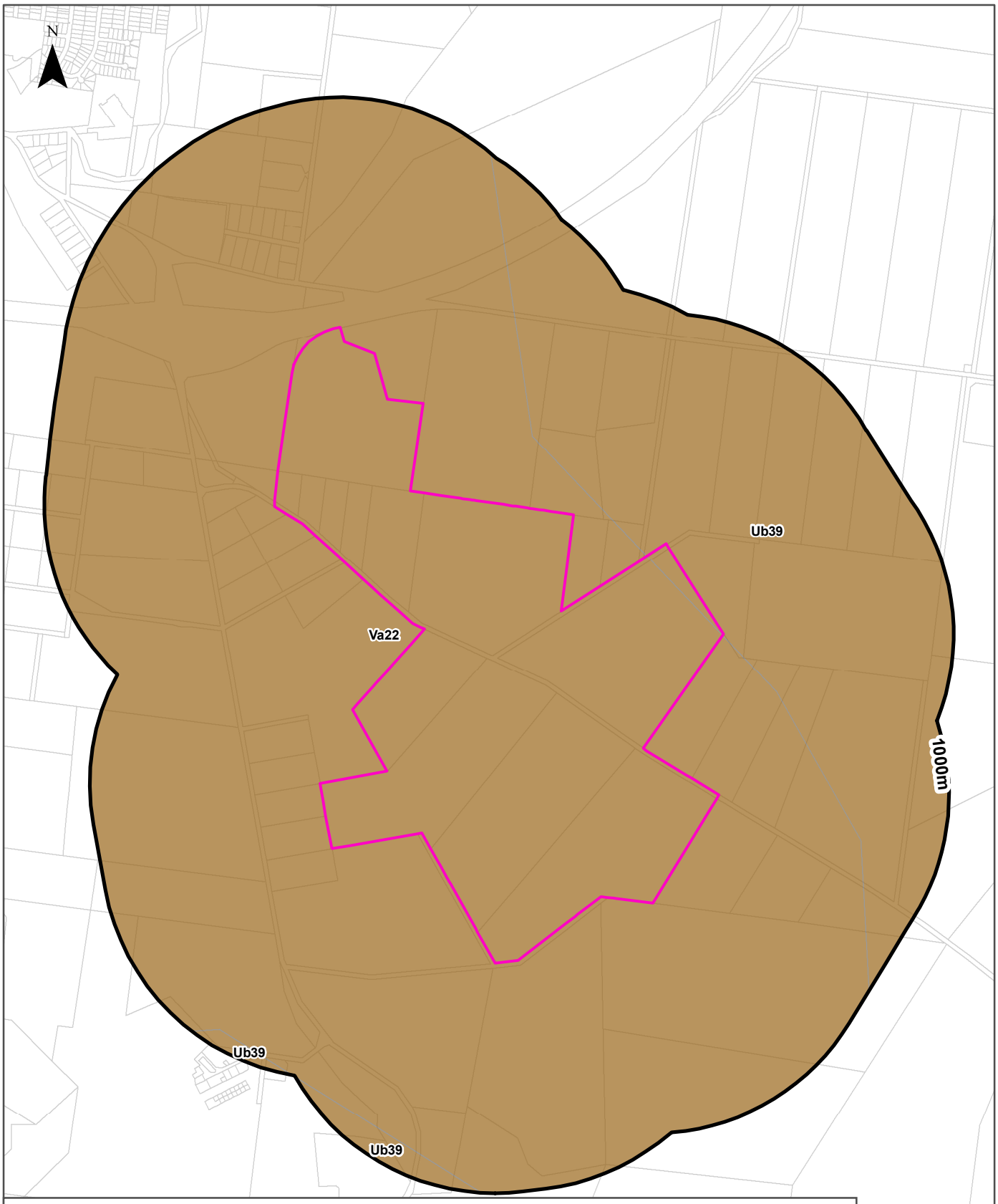
Naturally Occurring Asbestos Potential

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												

Atlas of Australian Soils

Mountain Ash Road, Brisbane Grove, NSW 2580



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 16 November 2022

Soils

Mountain Ash Road, Brisbane Grove, NSW 2580

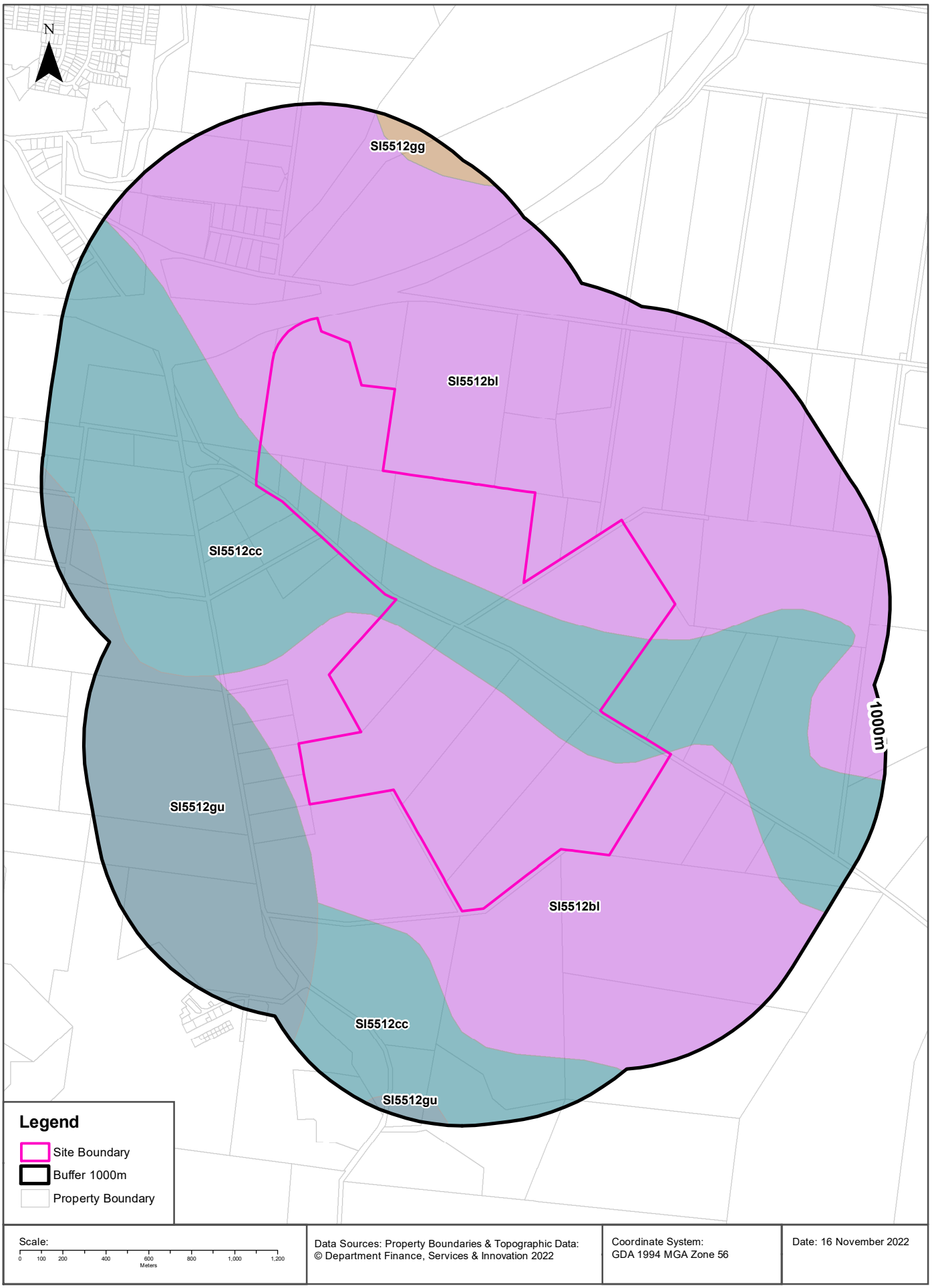
Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Va22	Sodosol	Valley plain: chief soils are hard alkaline yellow and yellow mottled soils (Dy2.43) and (Dy3.43). Associated are various soils, notably (Gn2.95), also (Ug5.16) and (Gn2.1), with some (Um) soils close to the stream.	0m	On-site
Ub39	Sodosol	Undulating to hilly country: chief soils are hard neutral and acid yellow mottled soils (Dy3.42 and Dy3.41) in a general pattern as follows: (i) undulating to hilly slopes of various (Dy) and (Dr) soils, including (Dy3.41), (Dy3.42), (Dy3.2), (Dr2.2), (Dr2.4); (ii) (Dy3.42) and sometimes (Dr3.42) soils in basins which merge with unit Va21 and lower-lying sites generally; and (iii) less frequently (Gn2. 15) and (Gn2.25) soils on gently undulating areas, usually situated between (i) and (ii). As mapped, small areas of units Tb22 and Va22 are included. Data are limited.	0m	On-site

Soil Landscapes of Central and Eastern NSW

Mountain Ash Road, Brisbane Grove, NSW 2580



Soils

Mountain Ash Road, Brisbane Grove, NSW 2580

Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
SI5512bl	Bullamalita	0m	On-site
SI5512cc	Collector Creek	0m	On-site
SI5512gu	Gundary	62m	South West
SI5512gg	Gordons Gully	850m	North

Acid Sulfate Soils

Mountain Ash Road, Brisbane Grove, NSW 2580

Environmental Planning Instrument - Acid Sulfate Soils

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

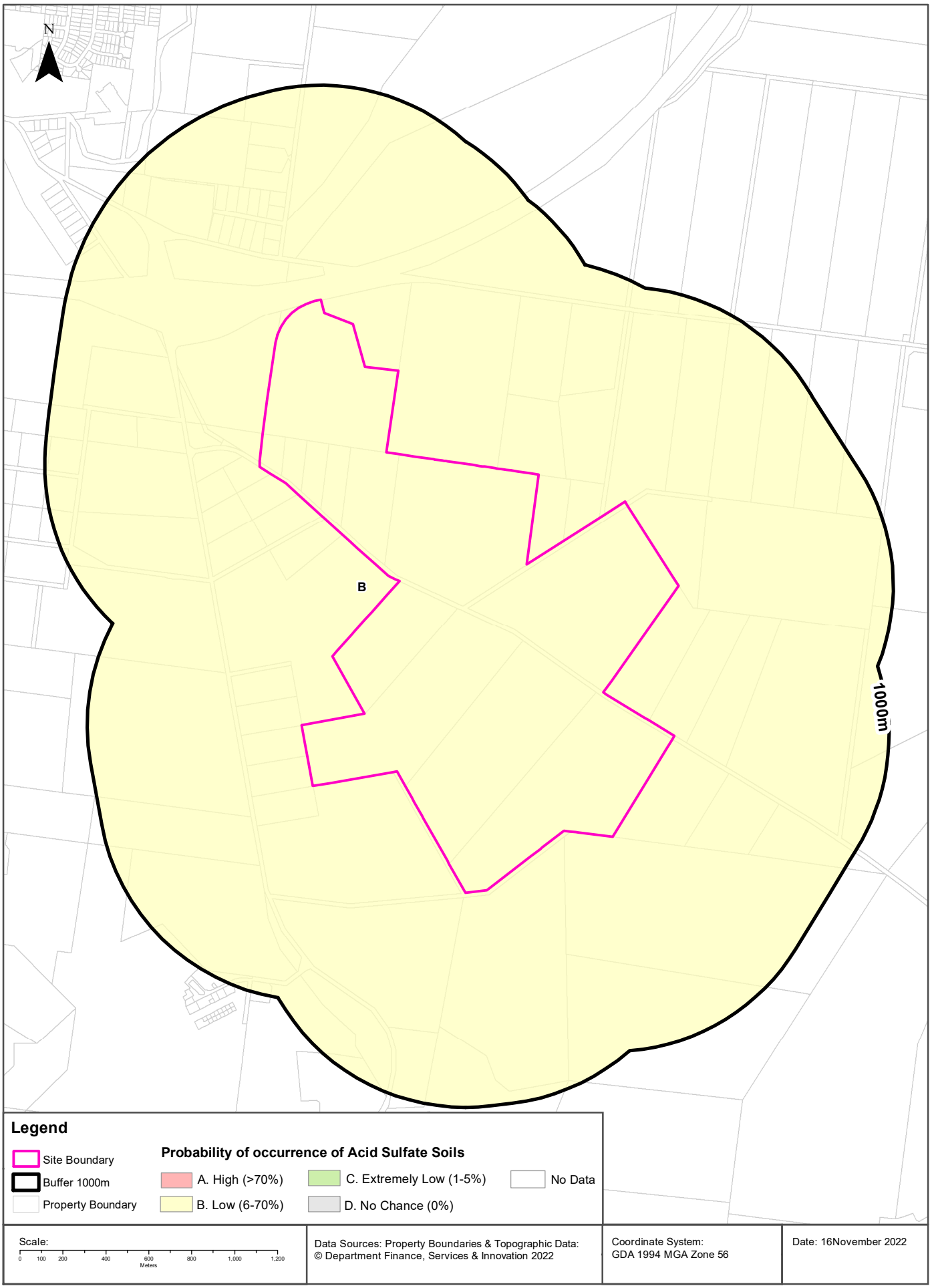
Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

Mountain Ash Road, Brisbane Grove, NSW 2580



Acid Sulfate Soils

Mountain Ash Road, Brisbane Grove, NSW 2580

Atlas of Australian Acid Sulfate Soils

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

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

Dryland Salinity

Mountain Ash Road, Brisbane Grove, NSW 2580

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

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

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

Mining

Mountain Ash Road, Brisbane Grove, NSW 2580

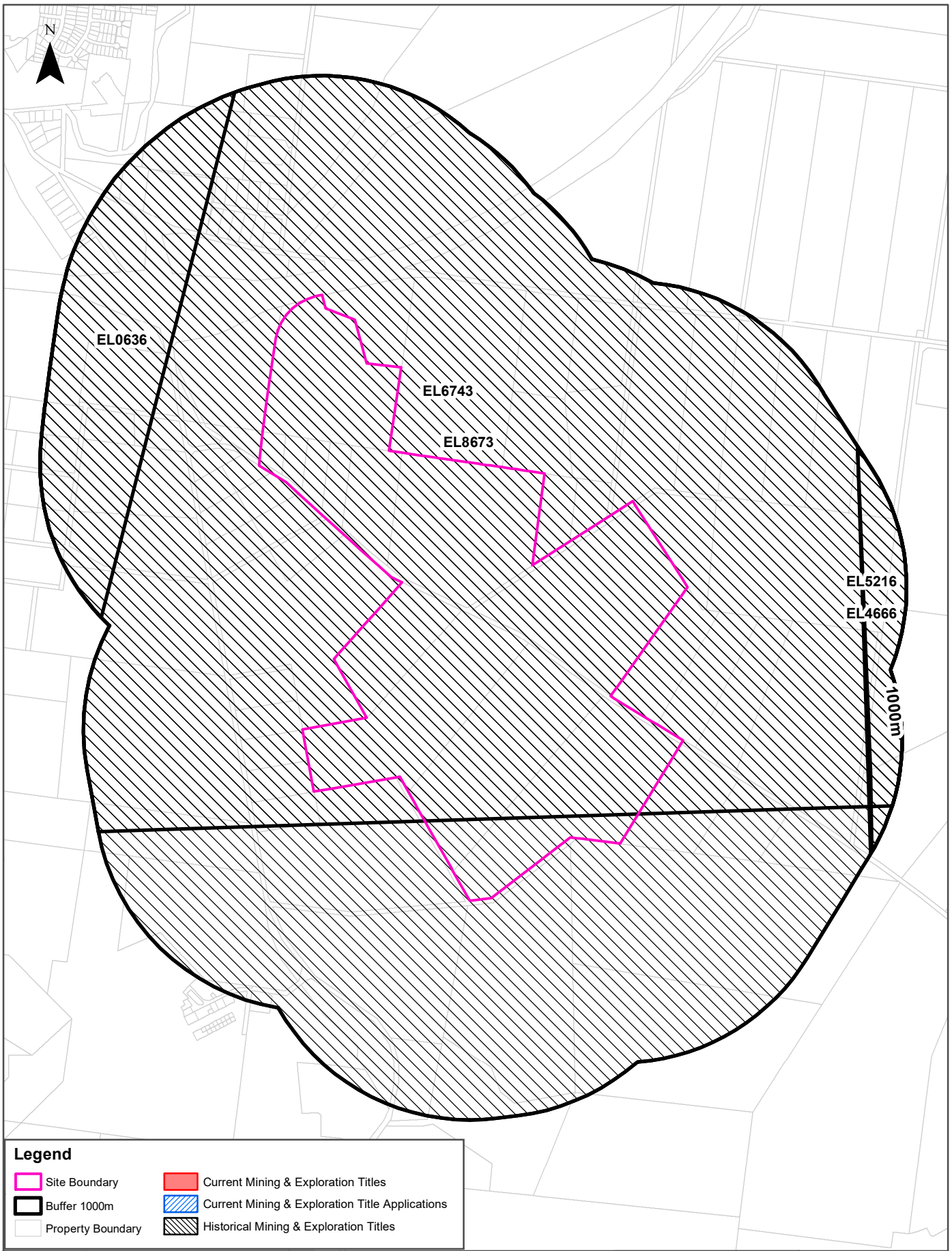
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

Mining & Exploration Titles

Mountain Ash Road, Brisbane Grove, NSW 2580



Mining

Mountain Ash Road, Brisbane Grove, NSW 2580

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer								

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

Mountain Ash Road, Brisbane Grove, NSW 2580

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL6743	RIMFIRE AUSTRALIA PTY LTD	20070330	20090329	MINERALS	Au Cu	0m	On-site
EL8673	ACGH II PTY LTD			MINERALS		0m	On-site
EL0636	JODODEX AUSTRALIA PTY LIMITED	19731001	19741001	MINERALS	Cu Pb Zn Ag	459m	North West
EL5216	DOWMILL PTY LIMITED,NOSEBI MINING & MANAGEMENT PTY LTD	19970211	19980613	MINERALS	Ag Au Cu Pb Zn	796m	East
EL4666	DOWMILL PTY LIMITED,NOSEBI MINING & MANAGEMENT PTY LTD	19940614	19960613	MINERALS	Ag Au Cu Pb Zn	801m	East

State Environmental Planning Policy

Mountain Ash Road, Brisbane Grove, NSW 2580

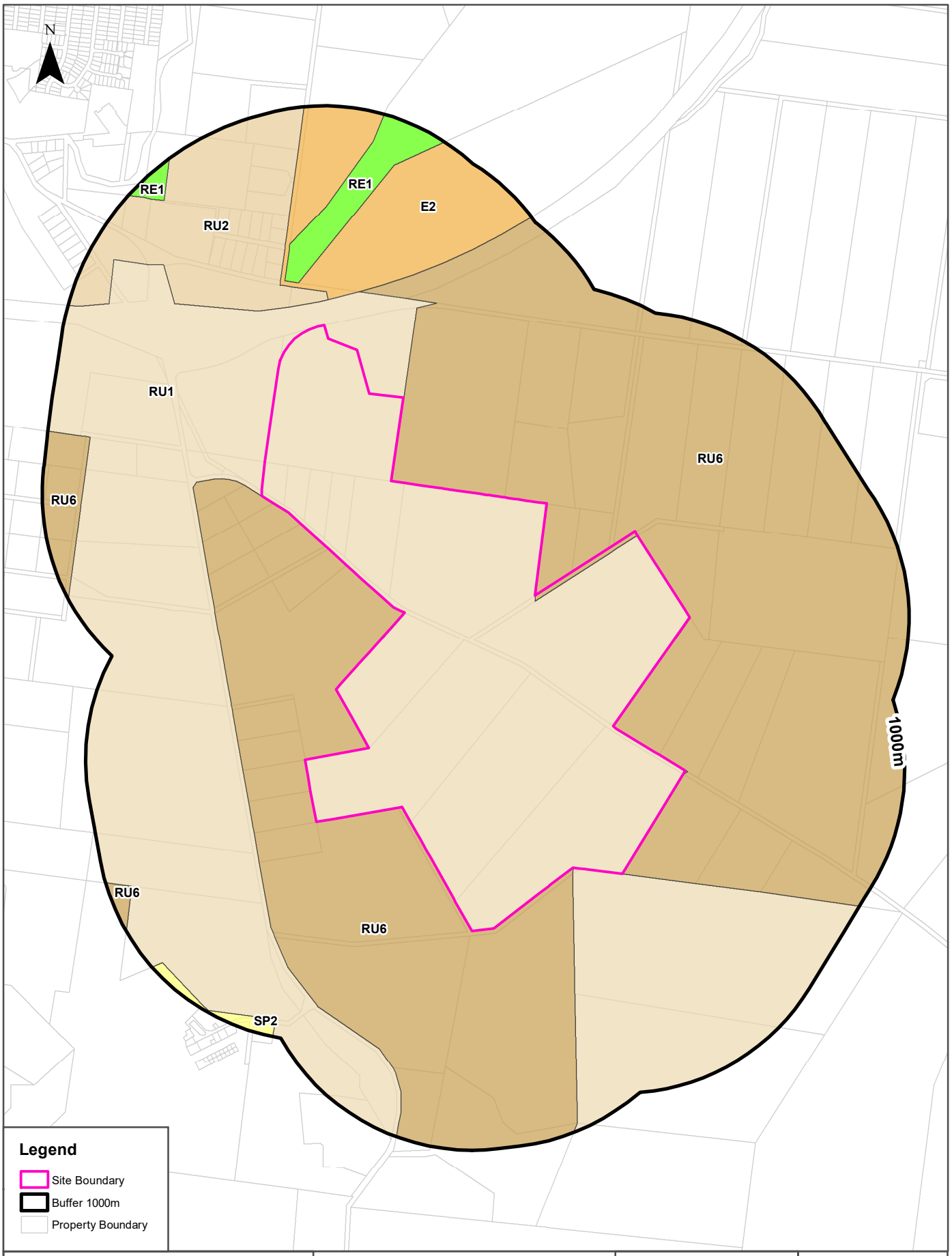
State Significant Precincts

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							

EPI Planning Zones

Mountain Ash Road, Brisbane Grove, NSW 2580



Environmental Planning Instrument

Mountain Ash Road, Brisbane Grove, NSW 2580

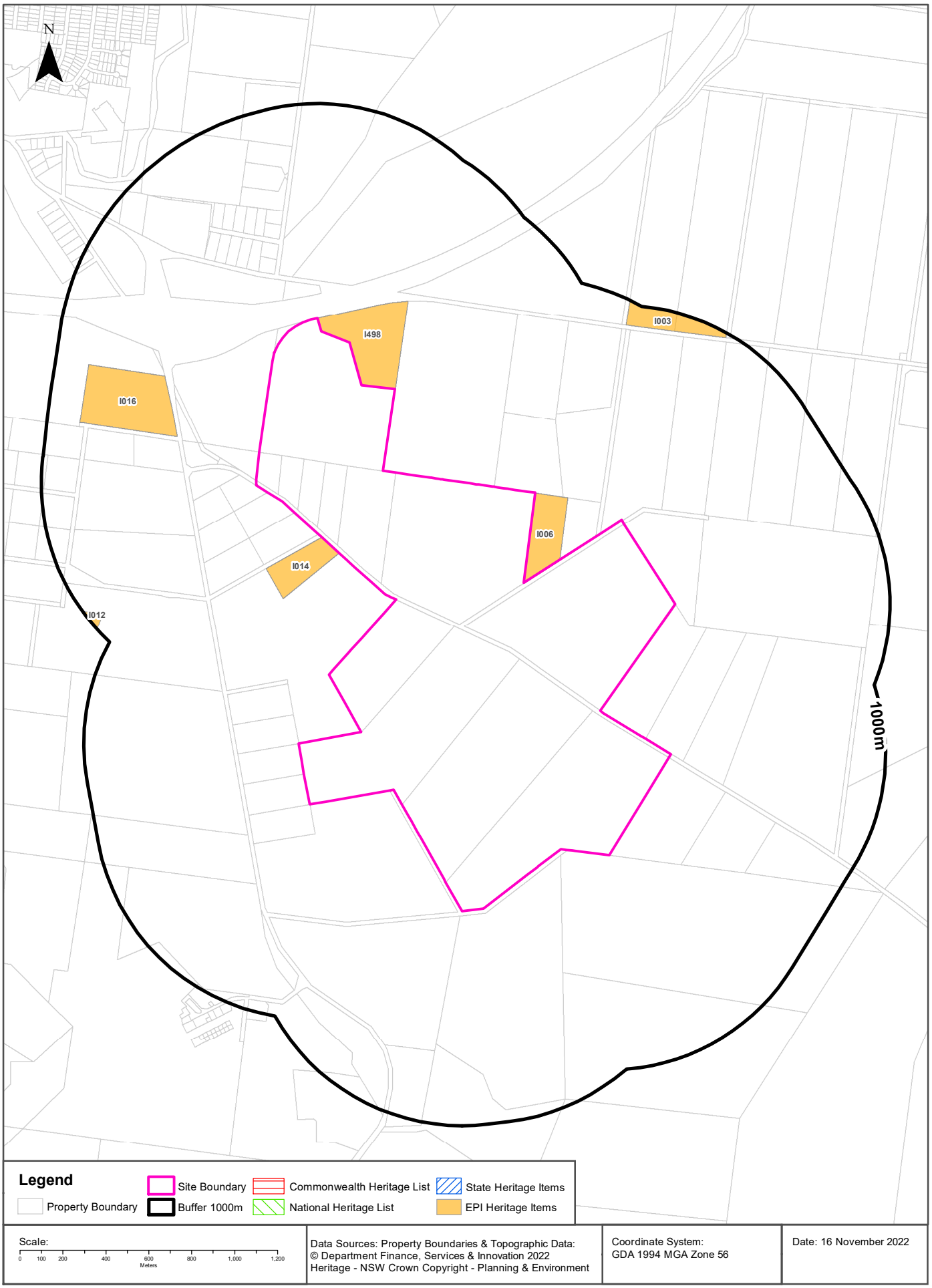
Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RU6	Transition		Goulburn Mulwaree Local Environmental Plan 2009	20/02/2009	20/02/2009	15/10/2021		0m	On-site
RU1	Primary Production		Goulburn Mulwaree Local Environmental Plan 2009	13/07/2012	13/07/2012	15/10/2021	Amendment No 2	0m	On-site
RU6	Transition		Goulburn Mulwaree Local Environmental Plan 2009	13/07/2012	13/07/2012	15/10/2021	Amendment No 2	0m	South West
RU2	Rural Landscape		Goulburn Mulwaree Local Environmental Plan 2009	06/08/2021	06/08/2021	15/10/2021	Map Amendment No 2	111m	North West
E2	Environmental Conservation		Goulburn Mulwaree Local Environmental Plan 2009	20/02/2009	20/02/2009	15/10/2021		118m	North
RE1	Public Recreation		Goulburn Mulwaree Local Environmental Plan 2009	20/02/2009	20/02/2009	15/10/2021		219m	North
RU6	Transition		Goulburn Mulwaree Local Environmental Plan 2009	13/07/2012	13/07/2012	15/10/2021	Amendment No 2	806m	West
RE1	Public Recreation		Goulburn Mulwaree Local Environmental Plan 2009	20/02/2009	20/02/2009	15/10/2021		868m	North West
SP2	Infrastructure	Airport	Goulburn Mulwaree Local Environmental Plan 2009	20/02/2009	20/02/2009	15/10/2021		921m	South West

Heritage Items

Mountain Ash Road, Brisbane Grove, NSW 2580



Heritage

Mountain Ash Road, Brisbane Grove, NSW 2580

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							

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							

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							

Environmental Planning Instrument - Heritage

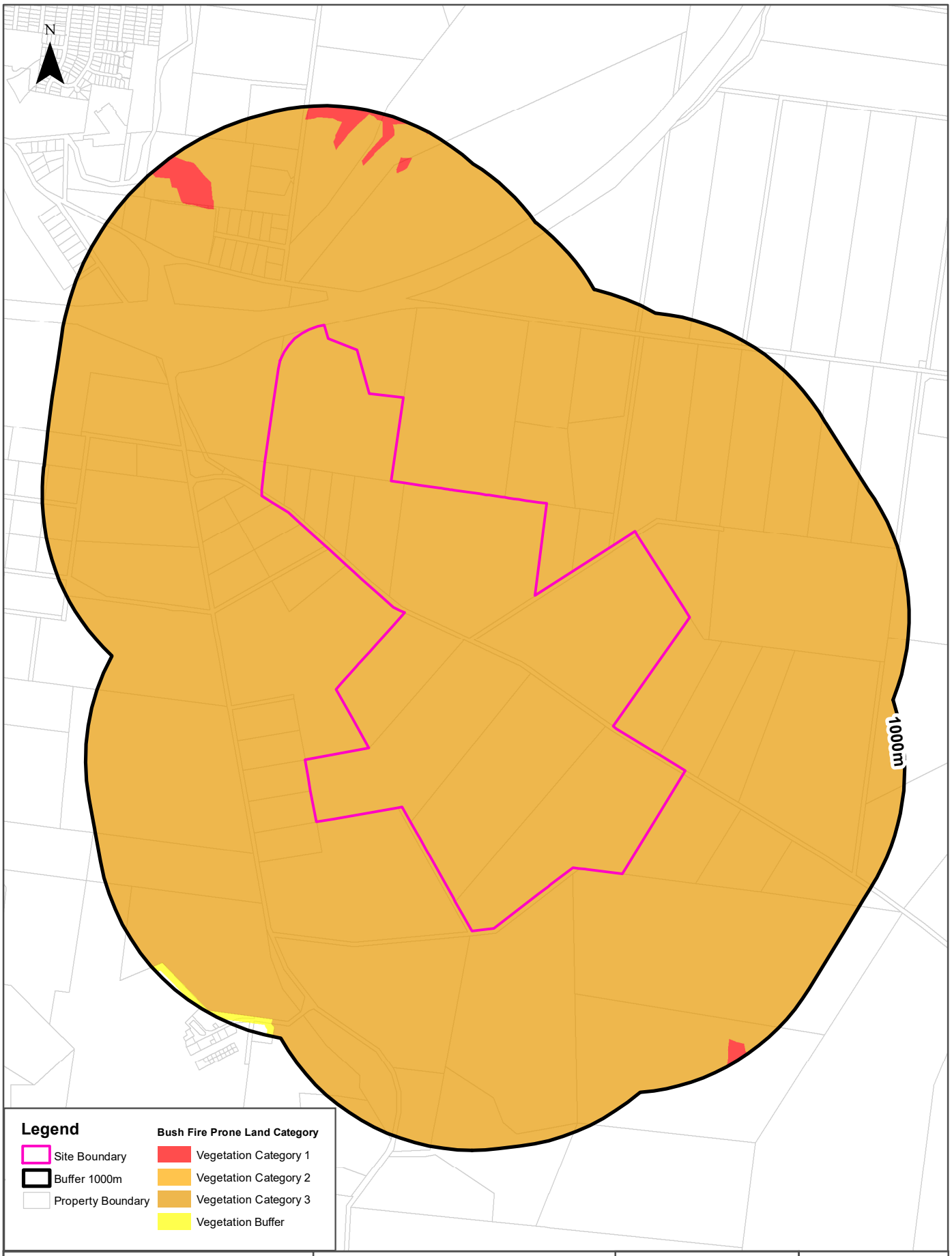
What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I014	Dwelling, Homeden	Item - General	Local	Goulburn Mulwaree Local Environmental Plan 2009	20/02/2009	20/02/2009	30/09/2022	0m	North West
I006	Dwelling, Wyoming	Item - General	Local	Goulburn Mulwaree Local Environmental Plan 2009	08/10/2021	08/10/2021	30/09/2022	0m	North East
I498	Irriwilbin homestead (circa 1860)	Item - General	Local	Goulburn Mulwaree Local Environmental Plan 2009	08/10/2021	08/10/2021	30/09/2022	0m	North

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I016	Dwelling, Rosebank	Item - General	Local	Goulburn Mulwaree Local Environmental Plan 2009	20/02/2009	20/02/2009	30/09/2022	389m	North West
I003	Nooga	Item - General	Local	Goulburn Mulwaree Local Environmental Plan 2009	08/10/2021	08/10/2021	30/09/2022	888m	North East
I012	Dwelling, Weston	Item - General	Local	Goulburn Mulwaree Local Environmental Plan 2009	08/10/2021	08/10/2021	30/09/2022	931m	West

Natural Hazards - Bush Fire Prone Land

Mountain Ash Road, Brisbane Grove, NSW 2580



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2022. Property Boundaries: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 16 November 2022

Natural Hazards

Mountain Ash Road, Brisbane Grove, NSW 2580

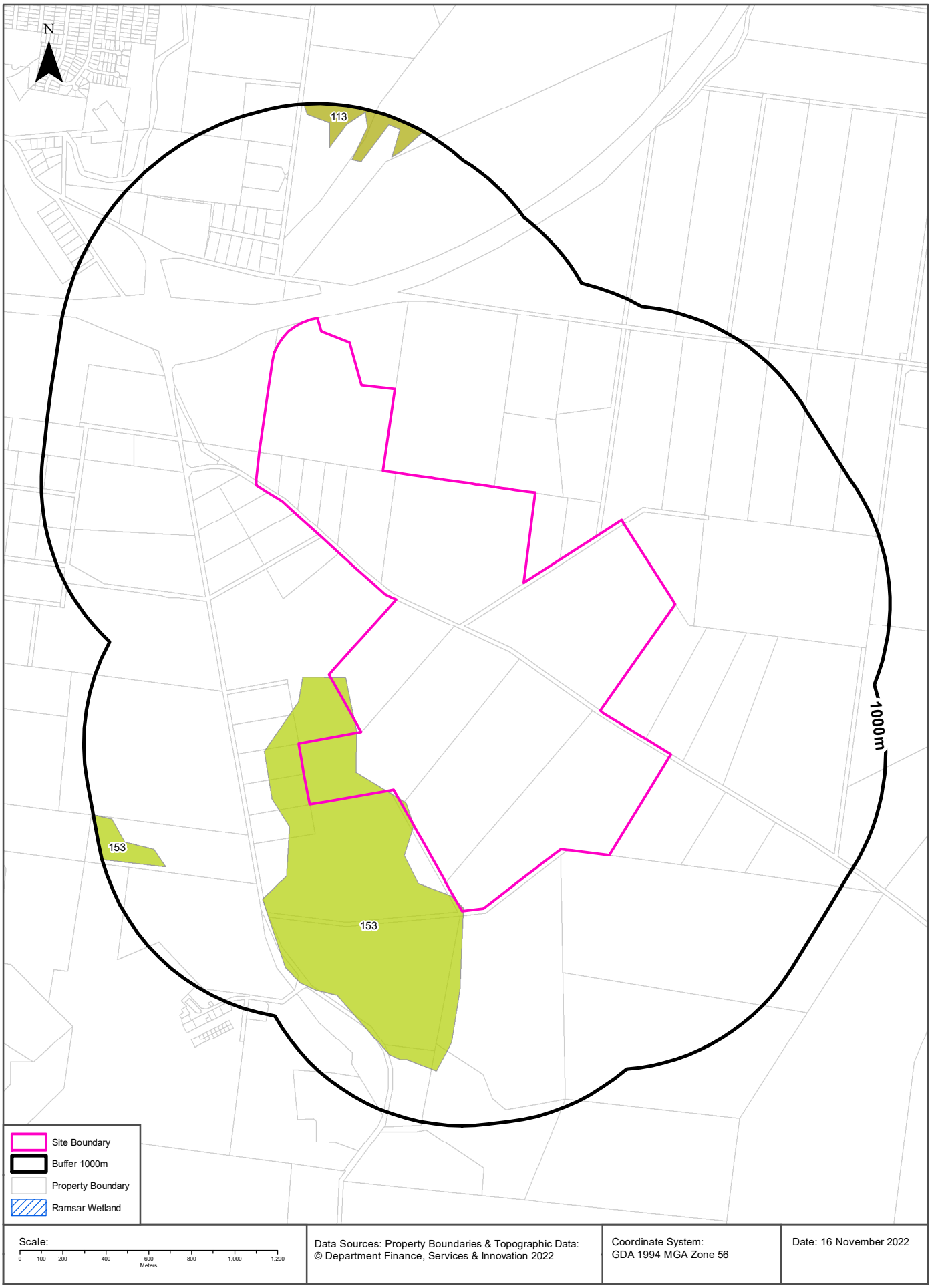
Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 3	0m	On-site
Vegetation Category 1	693m	North West
Vegetation Buffer	921m	South West

Ecological Constraints - Vegetation & Ramsar Wetlands

Mountain Ash Road, Brisbane Grove, NSW 2580



Ecological Constraints

Mountain Ash Road, Brisbane Grove, NSW 2580

Vegetation of the Southern Forests

What vegetation of the Southern Forests exists within the dataset buffer?

Veg Code	Formation	Class	Group	Distance	Direction
153	06 Grassy Woodlands/Grasslands	06d ST Temperate Grasslands	Tablelands and Slopes Herb Grassland/Woodland	0m	On-site
113	05 Dry Grass/Shrub Forests	07g North-eastern ST Dry Shrub Forests	North East Southern Tablelands Dry Shrub-Grass Forest	757m	North

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					

Ecological Constraints

Mountain Ash Road, Brisbane Grove, NSW 2580

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Ecological Constraints

Mountain Ash Road, Brisbane Grove, NSW 2580

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Ecological Constraints

Mountain Ash Road, Brisbane Grove, NSW 2580

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	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
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	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Endangered	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Insecta	Keyacris scurra	Key's Matchstick Grasshopper	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Macropus parma	Parma Wallaby	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Delma impar	Striped Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Bossiaea oligosperma	Few-seeded Bossiaea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Diuris aequalis	Buttercup Doubletail	Endangered	Category 2	Vulnerable	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Leucochrysum albicans var. tricolor	Hoary Sunray	Not Listed	Not Sensitive	Endangered	
Plantae	Flora	Persoonia oxycoccoides		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Pomaderris delicata	Delicate Pomaderris	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Rutidosis leptorrhynchoides	Button Wrinklewort	Endangered	Not Sensitive	Endangered	

Data does not include NSW category 1 sensitive species.

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
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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LOTSEARCH

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Date: 16 Nov 2022

Reference: LLS038019

EA Address: Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)

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Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 16 November 2022
0 160 320 480 640 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2018

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)

Scale:
0 160 320 480 640
Meters

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Coordinate System:
GDA 1994 MGA Zone 56

Date: 15 November 2022

Aerial Imagery 2012

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)

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0 160 320 480 640
Meters

Aerial Imagery 2006

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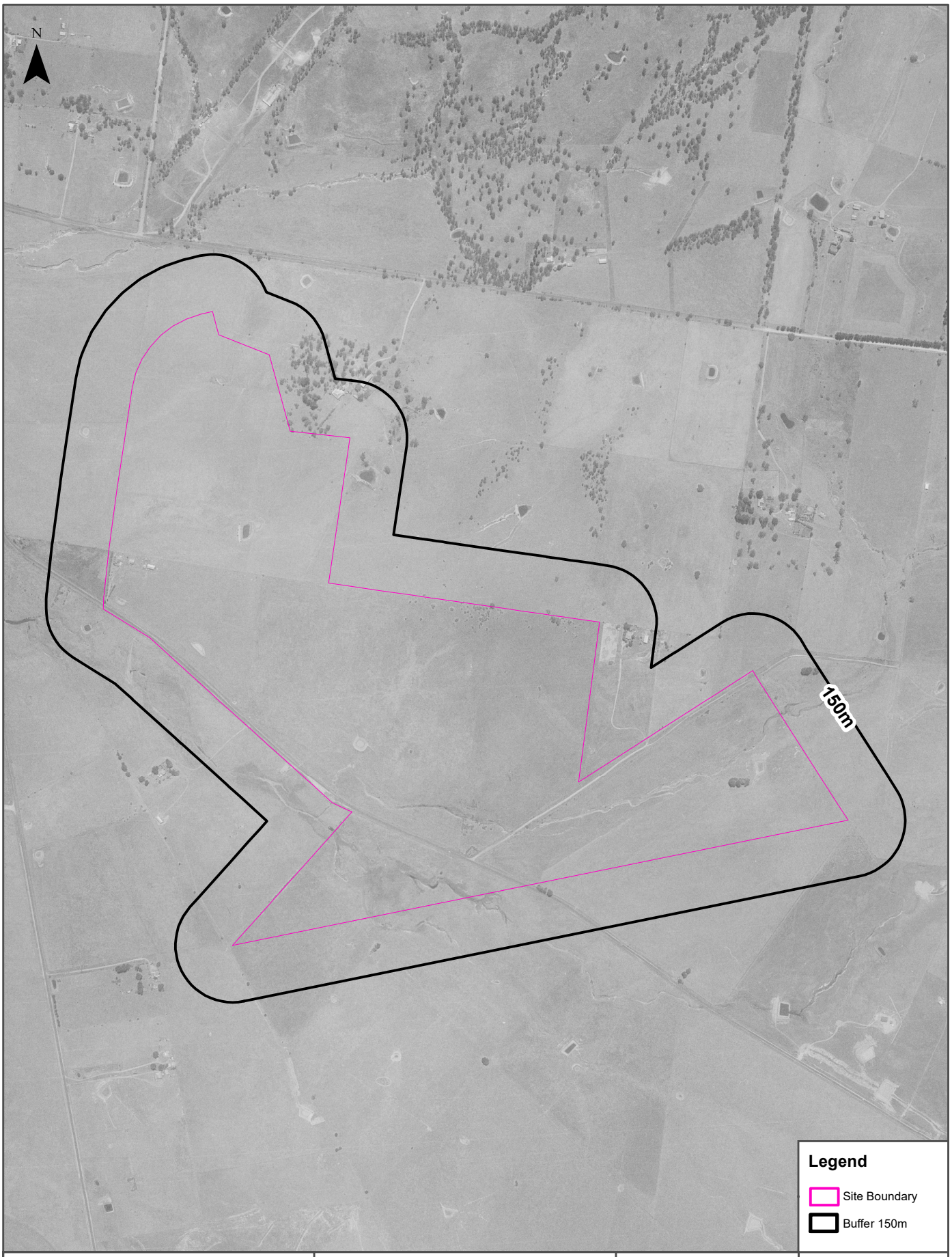
Aerial Imagery 1997

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)

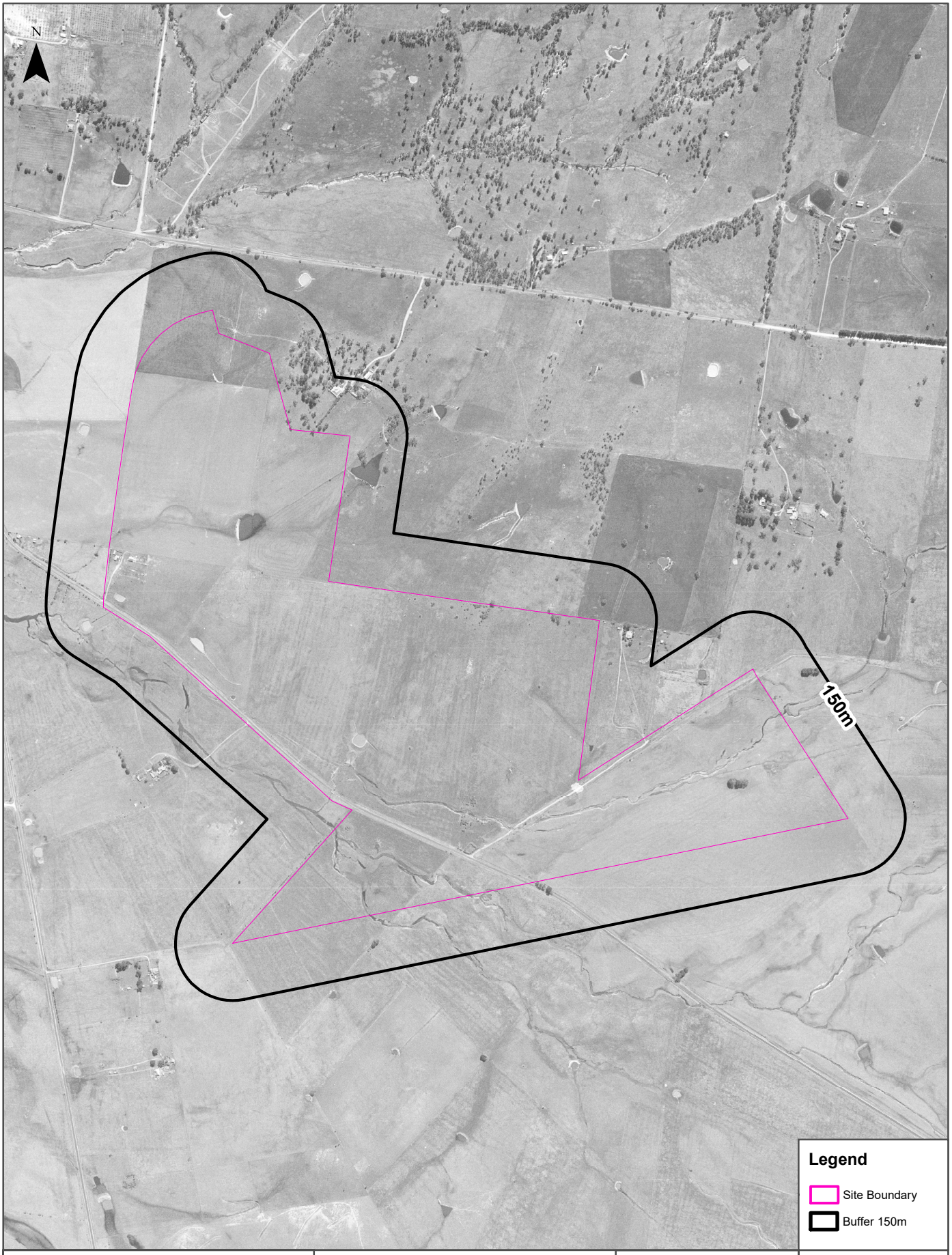
Aerial Imagery 1987

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)



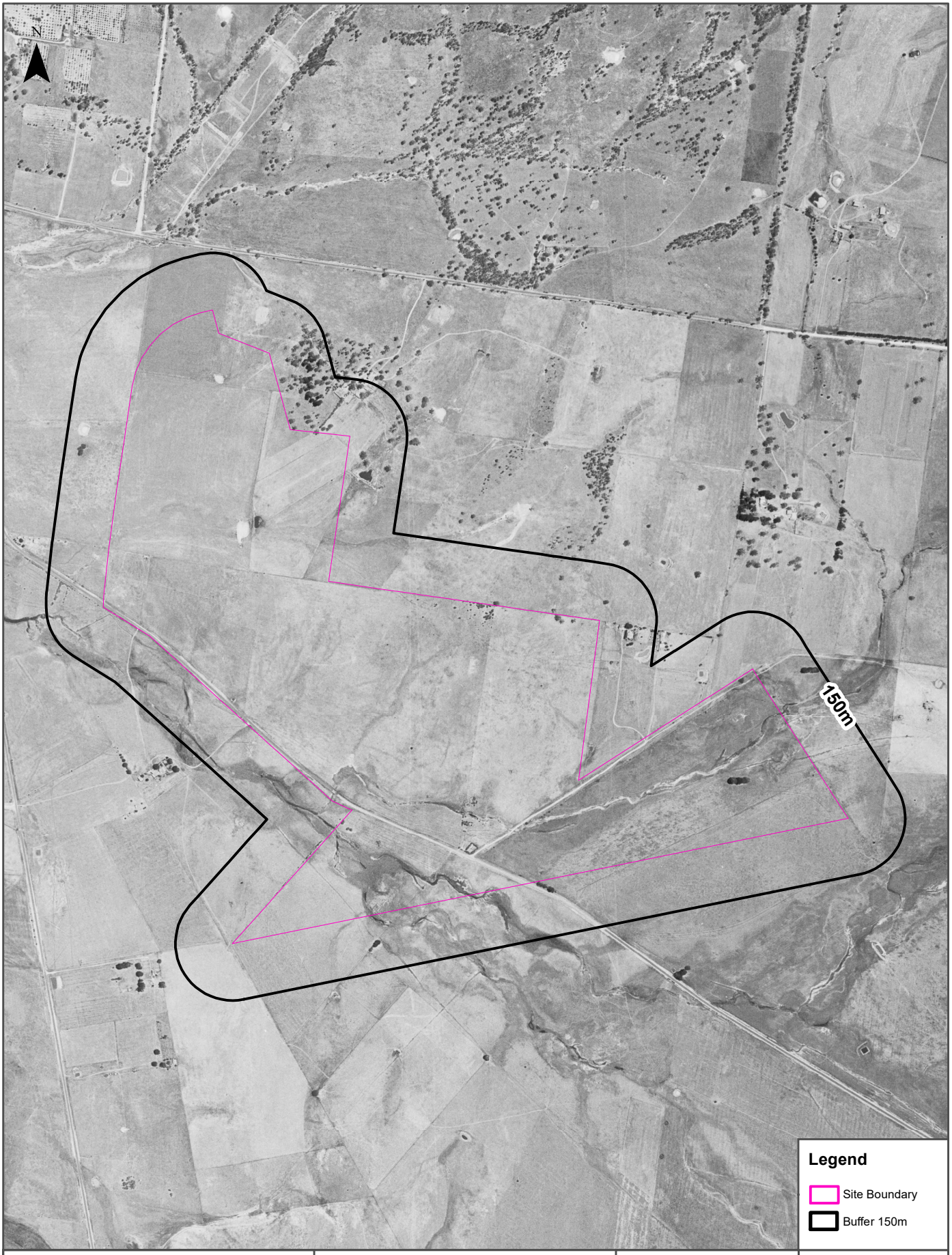
Aerial Imagery 1975

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)



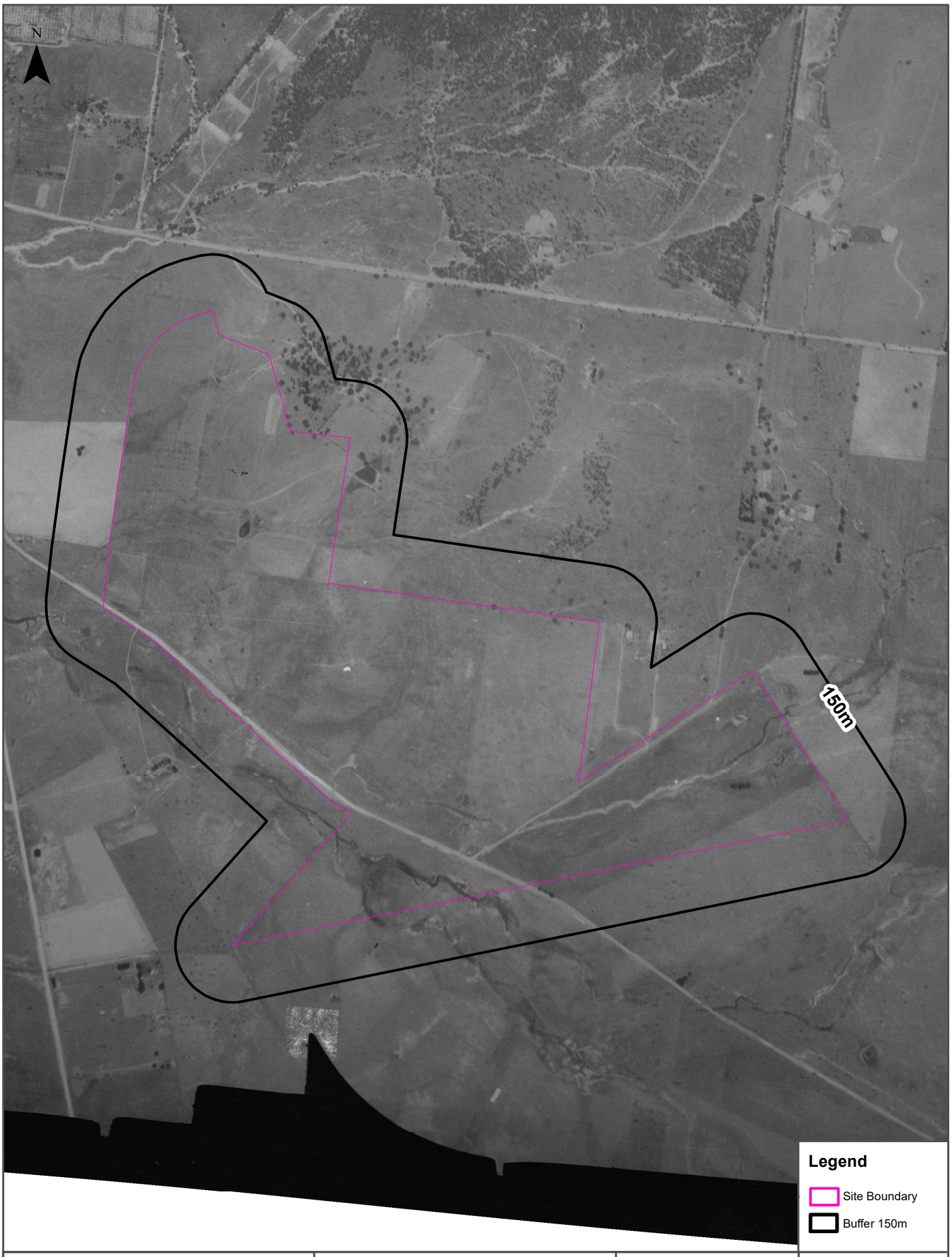
Aerial Imagery 1967

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)



Aerial Imagery 1953

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)



Aerial Imagery 1944

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 1)

Legend

- Site Boundary
- Buffer 150m

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0 160 320 480 640
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Date: 16 Nov 2022

Reference: LS038020 EA

Address: Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 2)

Aerial Imagery 2021

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 2)

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 16 November 2022
0 140 280 420 560 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2018

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 2)

Scale:
0 140 280 420 560
Meters

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Coordinate System:
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Date: 15 November 2022

Aerial Imagery 2012

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 2)

Scale:
0 140 280 420 560
Meters

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Coordinate System:
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Date: 15 November 2022

Aerial Imagery 2006

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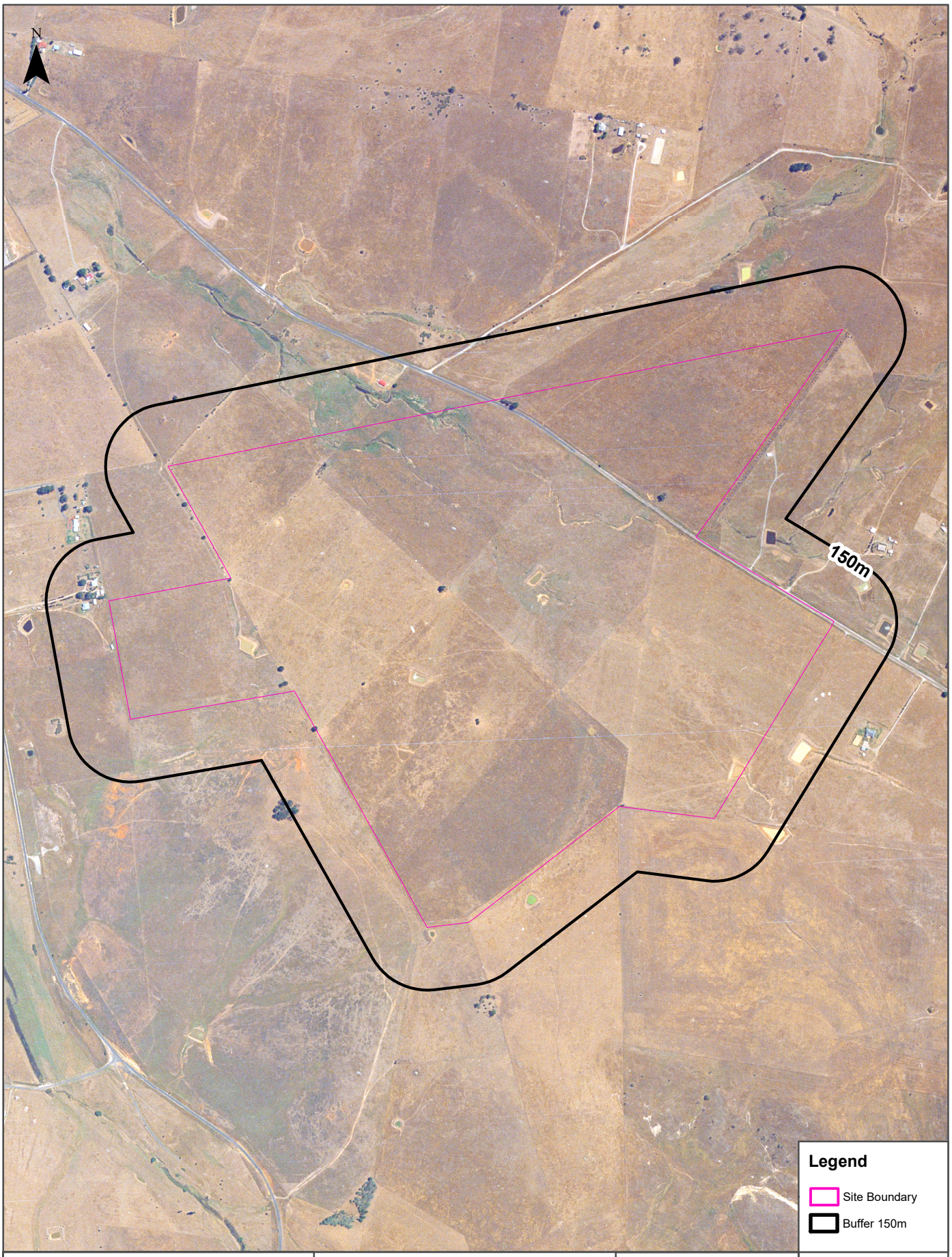
Meters

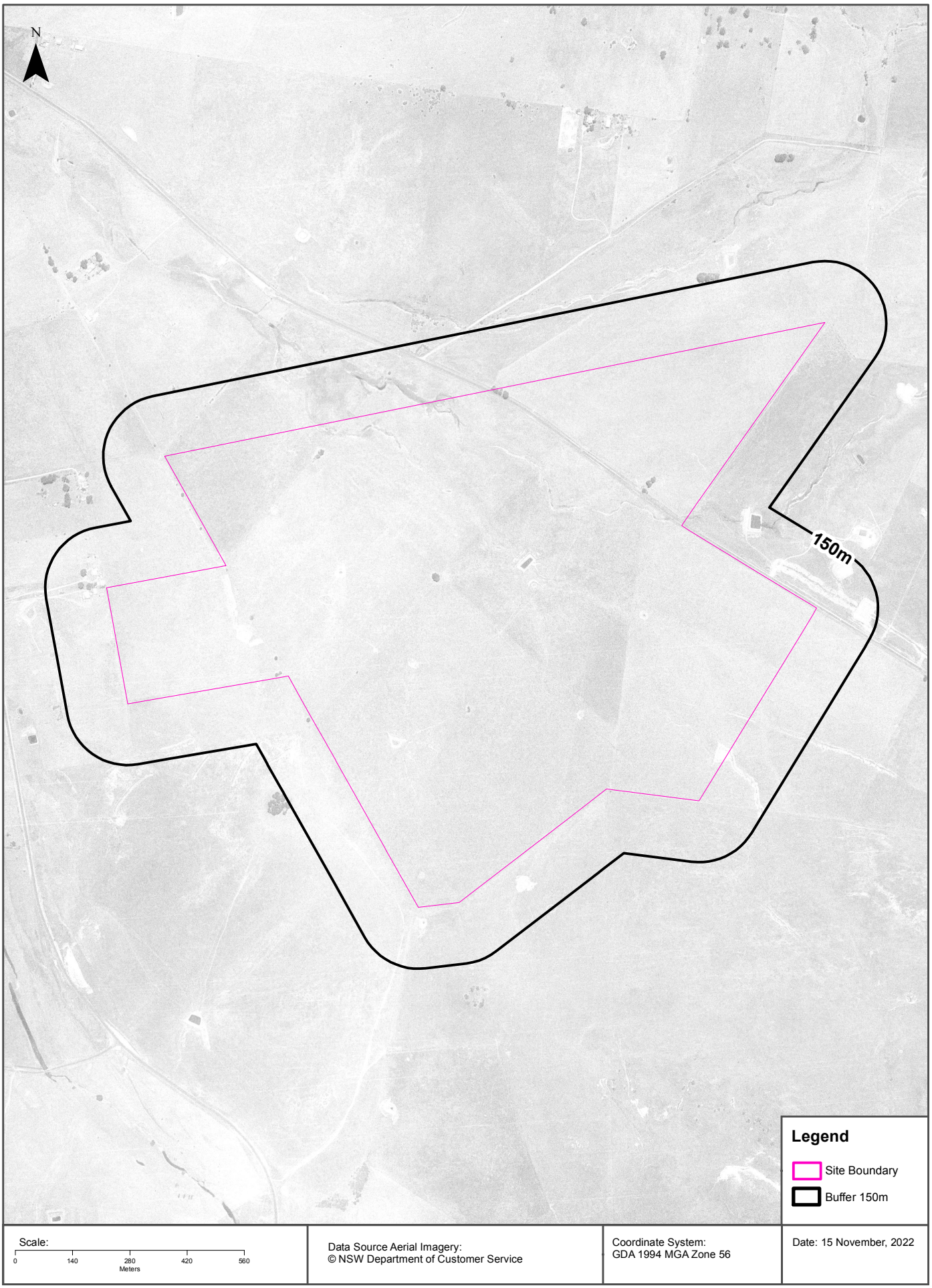
Aerial Imagery 1997

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 2)



Aerial Imagery 1987

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 2)



Aerial Imagery 1975

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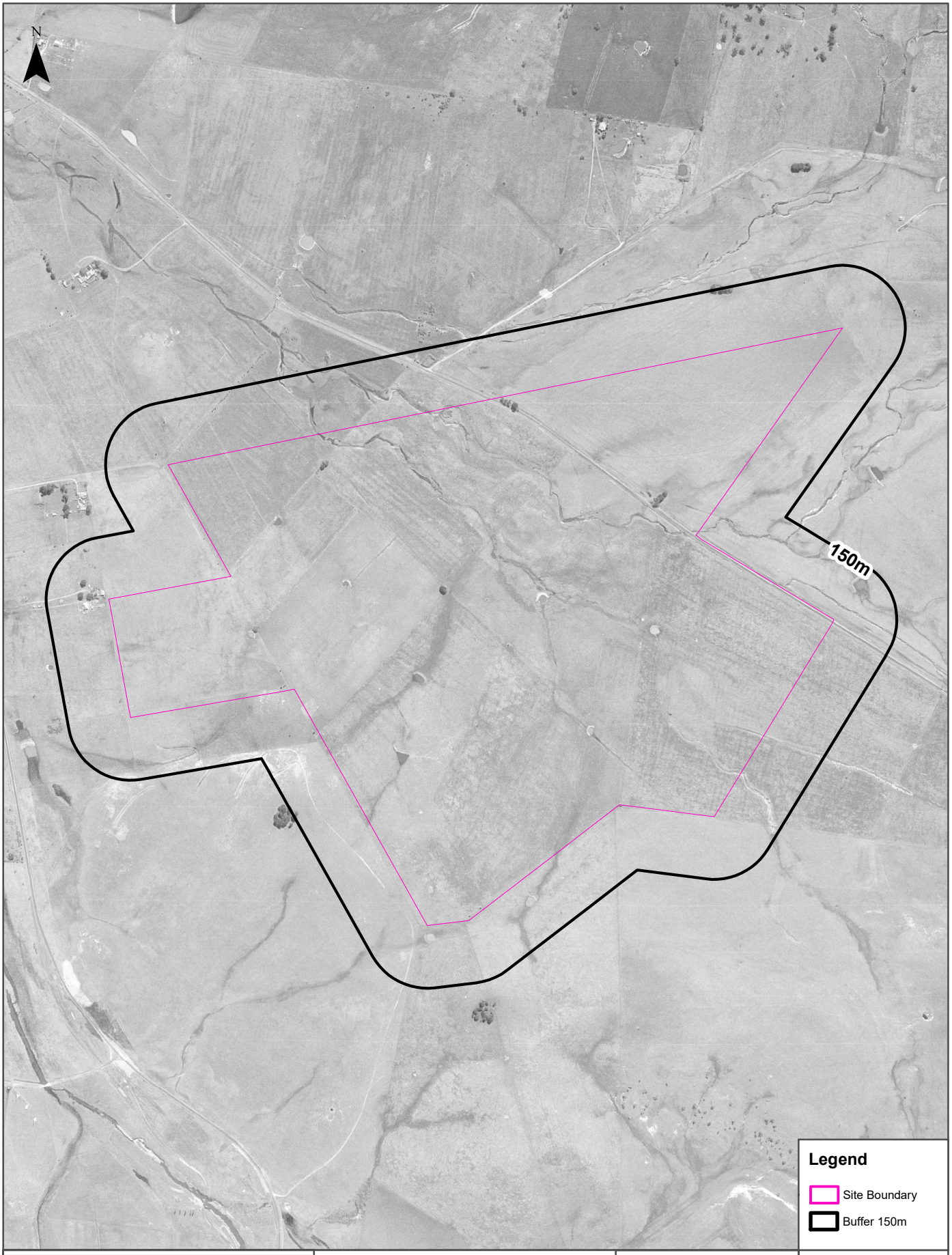
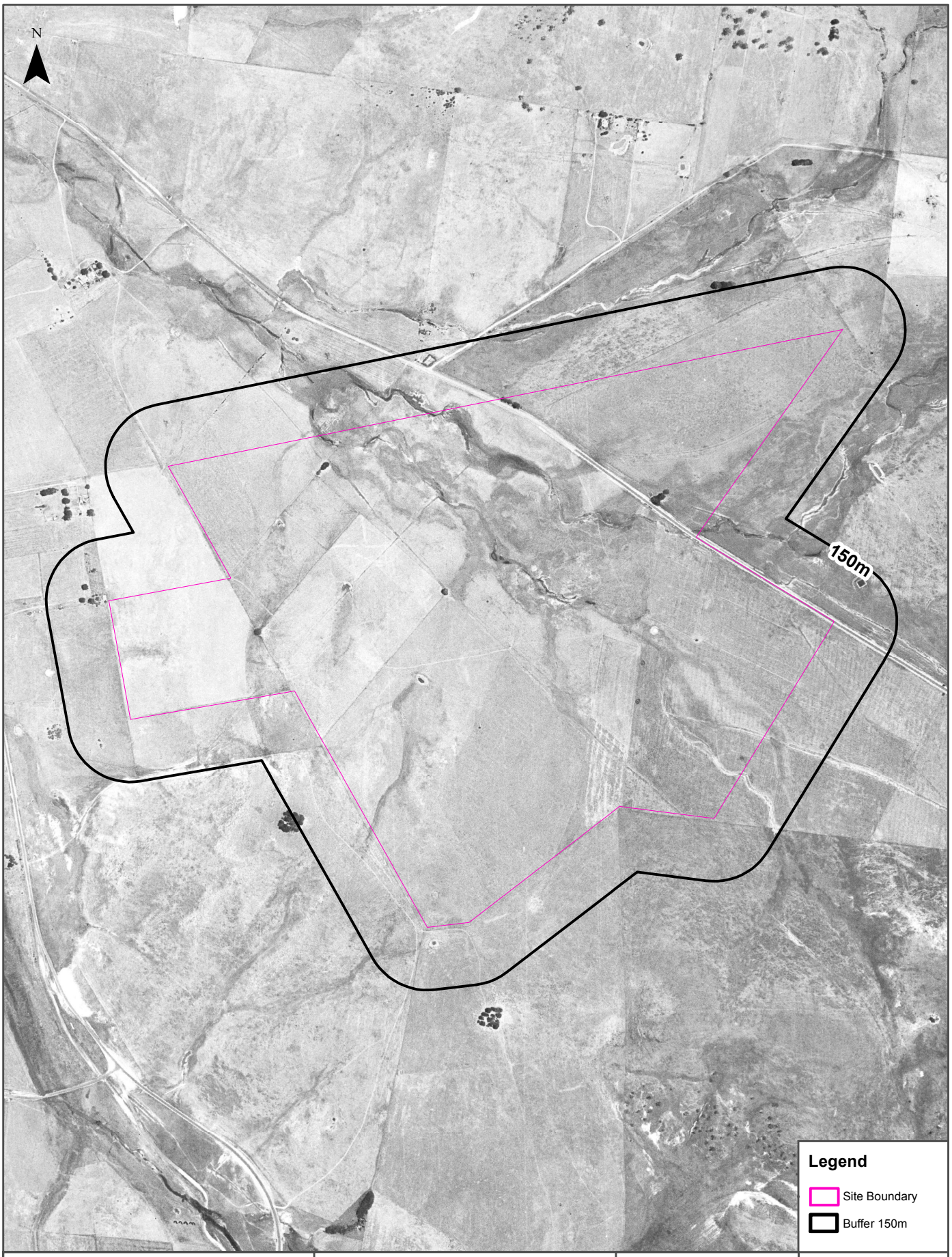


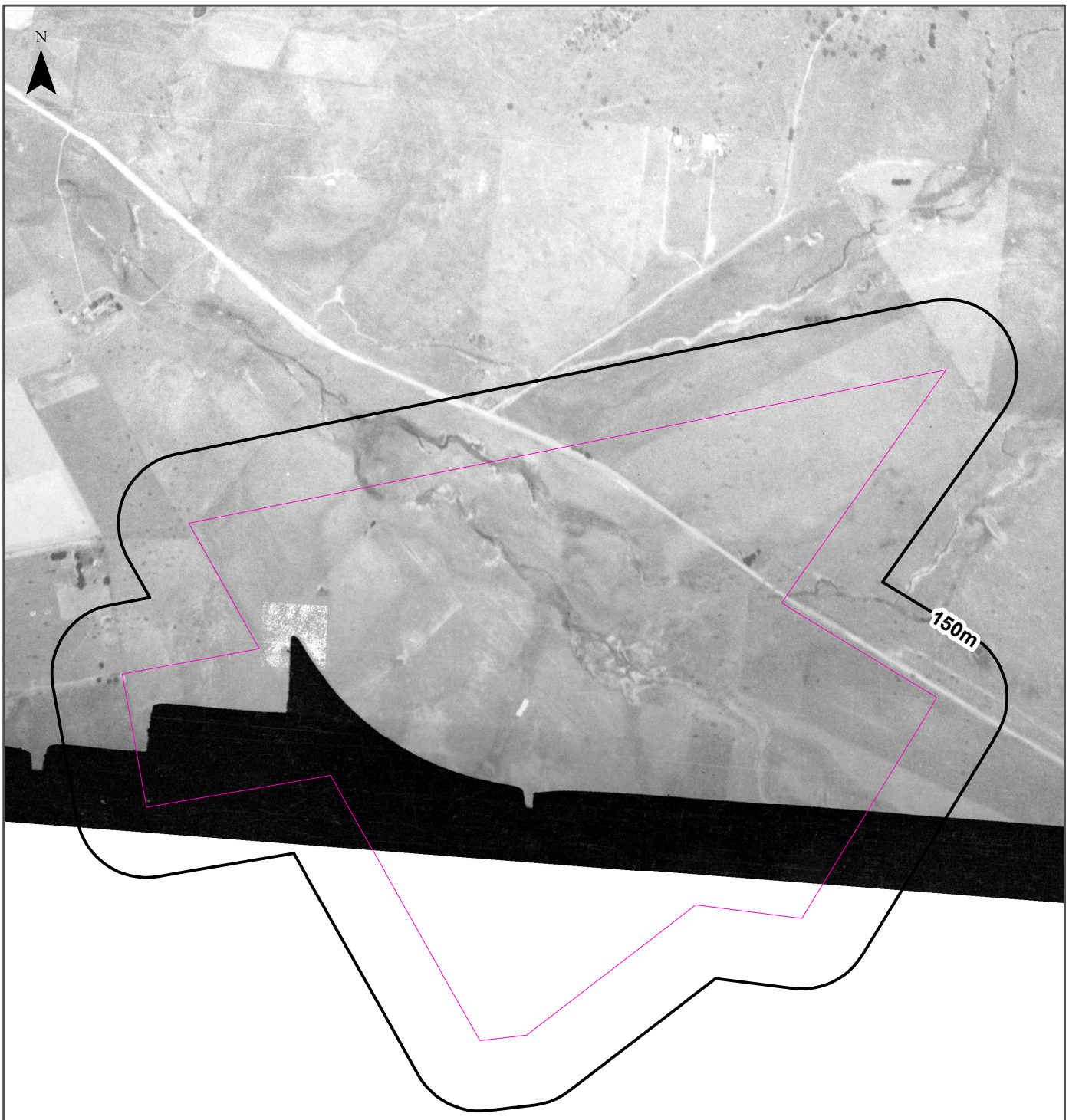
Aerial Imagery 1967

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 2)



Aerial Imagery 1953

Mountain Ash Road, Brisbane Grove, NSW 2580 (Part 2)



Legend

Site Boundary

Buffer 150m

Scale:
0 140 280 420 560
Meters

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Coordinate System:
GDA 1994 MGA Zone 56

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