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Taylor Construction Group Pty Ltd

Preliminary Site Investigation

Milton Ulladulla Hospital,
106 Princes Highway,
Milton New South Wales
2538

wsp

June 2025

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Preliminary Site Investigation
Milton Ulladulla Hospital, 106 Princes Highway, Milton New South Wales 2538

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WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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Executive summary

WSP Australia Pty Ltd (WSP) has been commissioned by Taylor Construction Group Pty Ltd, on behalf of Health Infrastructure, to undertake a preliminary site investigation (PSI) of the Milton Ulladulla Hospital site located at 106 Princes Highway, Milton, NSW to inform the preparation of a Review of Environmental Factors (REF) for the Milton Hospital Upgrade project. The proposed upgrade includes an expansion of the existing cancer care centre and an upgrade of medical imaging facilities.

The PSI included a desktop assessment of the site and a limited shallow soil sampling and analysis program.

The site has been occupied by Milton Ulladulla Hospital since 1967, with aerial imagery showing progressive development of hospital infrastructure from that time onward. Major redevelopment works, including extensions to the main hospital building and ancillary structures, occurred between the early 2000s and 2010s.

The surrounding land use has transitioned from partially developed land in the 1950s to predominantly low density residential development by the early 2000s. Community and commercial infrastructure have also been established within 200 metres of the site.

The site, and nearby surrounding properties, are not subject to current or former contamination related notices issued by the NSW Environment Protection Authority.

The potential presence of fill on the site was noted during the site inspection, and confirmed by the limited soil investigation program. No visual or olfactory evidence of contamination of shallow soils was identified by the intrusive works.

It is considered unlikely that current and former activities at the site, or from nearby commercial sites, have resulted in gross contamination of the Milton Ulladulla Hospital site. Analytical results for the shallow soil samples collected from the site as part of the investigations were below the assessment criteria adopted.

Based on the results of the investigations performed it is considered the site is suitable for ongoing use as a hospital. However, the following recommendations are made:

- A Construction Environmental Management Plan (CEMP), including an unexpected finds protocol, be implemented if the proposed upgrade includes ground disturbance works.
- Waste, including excess spoil, generated by the upgrade must be disposed in accordance with regulatory guidance following classification in accordance with the NSW EPA's Waste classification guidelines Part 1: Classifying waste (EPA 2014).

1 Introduction

1.1 Background

WSP Australia Pty Ltd (WSP) was engaged by Taylor Construction Group Pty Ltd, acting on behalf of Health Infrastructure, to undertake a preliminary site investigation (PSI) of the Milton Hospital (the site) to inform the preparation of a Review of Environmental Factors (REF) for the Milton Hospital Upgrade project. The REF is required to support planning and approvals for the project located at 106 Princes Highway, Milton, New South Wales 2538. The site encompasses Lot 1 in DP 1127802 (see attached Figure 1 in Appendix A.

The purpose of the PSI was to provide a more detailed understanding of potential for contamination to exist at the site, determine the suitability for ongoing land use, and consider further assessment, management, or remediation options (if required). WSP's scope of work includes the review of publicly available maps, databases, historical aerial photography, and a site inspection with limited sampling. The site inspection and limited sampling was completed by WSP on 27 May 2025.

1.2 Objectives

The objectives of the investigation were to:

- Evaluate the potential for site contamination on the basis of historic land uses, and anecdotal and documentary evidence of possible pollutant sources.
- Identify indicators of potential contamination at the site based on observations made during the site inspection, and the analytical results of the limited sampling program.
- Provide a preliminary assessment of the condition of the site and potential for contamination.
- Assess the site's suitability for ongoing sensitive land use and potential risks to receptors.
- Prepare a preliminary site investigation report, with reference to the NSW EPA, 2020 *Contaminated Land Guidelines: Consultants reporting on contaminated land* presenting the environmental status of the site with respect to potential contamination.

1.3 Scope of work

- Review of current Shoalhaven City Council Local Environment Plan (LEP) maps to assess potential restriction to land development.
- A search of historical aerial photographs in order to review previous site use and the historical sequence of land development in the neighbouring area.
- Review of available previous environmental reports pertaining to the site (where available).
- Review of existing licences, notices, or orders under the *Protection of the Environment Operations Act 1997* (the *POEO Act*) or the *Contaminated Land Management Act 1997* (the *CLM Act*) for the site and/or surrounding sites.
- Review of the NSW Office of Water databases for bores located within 500 m radius of the site through the groundwater bore database.
- Review of the physical site setting including topography, geology (including acid sulfate soil risk), hydrology, hydrogeology, and potential sensitive receptors on or in the vicinity of the site.
- Completion of a site interview with the relevant site representatives (where possible).

- A site walkover and inspection to identify indicators of potential contamination at the site.
- Excavation of four (4) boreholes using a hand auger.
- Collection of shallow surficial soil samples from each of the four (4) borehole locations.
- Laboratory analysis of up to ten (10) shallow soil samples for the following analytical suite:
  - Total recoverable hydrocarbons (TRH).
  - Benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN).
  - Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc).
  - Polycyclic aromatic hydrocarbons (PAH).
  - Per- and polyfluoroalkyl substances (PFAS).
  - Asbestos.
- Comparison of analytical results against applicable site assessment criteria.
- Preparation of this PSI report including comment on the contamination status of the site, and the provision of recommendations for further works (if required).

An assessment of groundwater quality on the site was not performed.

2 Site location and setting

2.1 Site location and identification

The general site identification details are provided in Table 2.1.

Table 2.1 Summary of general site information

Topic	Details
Site address	106 Princes Highway, Milton, New South Wales 2538
Site identification	Lot 1 in DP 1127802
Site occupier	Milton Ulladulla Hospital (NSW Health - Illawarra Shoalhaven Local Health District)
Site area	The area of the site is approximately 0.9 ha.
Zoning	SP2 – Health Services Facilities
Current site use	Hospital – Patient treatment and care
Development age	Approximately 58 years
Proposed land use	Ongoing hospital / health care activities.

2.2 Surrounding land uses

A summary of the land uses and zoning surrounding the site are provided in Table 2.2.

Table 2.2 Surrounding land use summary

Direction	Land use and zoning
North	The site is bordered to the north by Gumley Lane, beyond which are low density residential developments (zoned R2 – Low Density Residential). Approximately 110 metres further north is vacant, grass covered land with sparse vegetation (zoned R1 – General Residential, transitioning to RU1 – Primary Production further north). Milton Swimming Centre (zoned RE1 – Public Recreation) is approximately 125 metres north-northwest of the site, while Milton Public School (zoned SP2 – Educational Establishment) is situated approximately 250 metres north-west of the site.
South	The site is bordered to the south by Princes Highway, beyond which are commercial facilities (zoned E1 – Local Centre). These include health services (such as medical centres, a pathology clinic, and a massage clinic), a vet, and a farm retail shop. Approximately 85 metres further south, land use transitions to low density residential developments (zoned R2 – Low Density Residential), with one lot, located approximately 45 metres to the south-west of the site, comprising town houses (zoned R3 – Medium Density Residential). Uniting Church is situated approximately 170 metres to the south of the site (zoned SP2 – Place of Public Worship).
East	Low density residential developments exist to the east of the site (zoned R2 – Low Density Residential), beyond which is an aged care facility (IRT Sarah Claydon Aged Care Centre), approximately 185 metres from the site (zoned R1 – General Residential).

Direction	Land use and zoning
West	Low density residential developments exist to the west of the site (zoned R2 – Low Density Residential), beyond which is the Milton commercial district (zoned E1 – Local Centre), including multiple commercial facilities such as retail stores, a hotel, cafes and restaurants. An Anglican Church and Buddhist Temple are situated approximately 105 metres and 205 metres (respectively) to the west of the site (zoned SP2 – Place of Public Worship). A service station (Caltex) is located approximately 100 metres to the west of the site.

2.3 Physical description

A summary of the physical characteristics of the site is presented in Table 2.3 below. Photographs taken as part of the site inspection show the physical description of the site and are provided in Appendix C.

Table 2.3 Physical description summary

Topic	Summary
Site configuration	The site is located on the northern side of Princes Highway and extends northward to Gumley Lane. The site encompasses a single lot, occupied by Milton Ulladulla Hospital.
Site features	Site features include the main Milton Ulladulla Hospital building, centrally located within the site, along with associated ancillary buildings and structures, sealed asphalt access roads and car parks, grass covered areas, and landscaped gardens. Ancillary buildings include the Milton Ulladulla Community Cancer Services Centre building, situated in the south-western corner of the site, the building located at the south-eastern corner of the site (building identifier MUH-F), and the building positioned diagonally approximately 25 metres from the north-eastern corner of the site (building identifier MUH-C), adjacent to the main hospital building. A corrugated iron carport (including a storage shed) is located along the eastern boundary (to the east of MUH-C), with a concrete structure (building identifier MUH-E) immediately to its south. According to signage this concrete structure is used as a flammable substance storage building. Sealed asphalt access roads and car parks are distributed throughout the hospital complex, with two driveways providing access from the northern side of the site and two from the southern side, serving as the main hospital entrance and the ambulance bay.
Percentage coverage of the site (approximate)	Buildings: 41% Asphalt sealed roads / parking areas and concreted hardstand: 31% Bare ground/landscaping: 27%
Topography	The site generally slopes down gradient from the southern boundary toward the north, sitting at an elevation of approximately 70 - 78 metres Australian Height Datum (mAHD).
Site drainage	Stormwater is managed by onsite stormwater drains located at various points across the site and is expected to drain to the municipal drainage system, discharging toward the north.
Surface water	The nearest waterway to the site is an unnamed creek located approximately 175 metres to the north of the site. The creek, downgradient of the site, flows towards the north, converging with several other unnamed creeks before ultimately discharging into Narrawallee Creek approximately 2.5 km to the northeast of the site. A farm dam is located on the watercourse approximately 760 m north northeast of the site.

2.4 Geology, soils and hydrogeology

A review was performed by a third party to identify geologic and hydrogeologic conditions in the vicinity of the site. This information is contained within a project specific report in Appendix B and has been summarised in Table 2.4 below.

Table 2.4 Geology, soil and hydrogeology summary

Topic	Summary
Regional geology	The site is underlain by Milton Monzonite of the Mesozoic Era, primarily consisting of porphyritic monzonite. There is a low potential for naturally occurring asbestos to be present at the site.
Soil	Site soils are classified as Kurosols, associated with the Brown Podzolic Soils group. They are typically acidic, with predominantly brownish to yellowish colouring. According to acid sulfate soil risk mapping as the site is not located in an area with known acid sulfate soils (ASS). The nearest mapped occurrence is approximately 1.1 km to the north-east of the site and is classified as L2 – low probability of ASS occurring at depths of 1 – 3 m below ground surface. However, according to ASS planning sheets of the Shoalhaven Local Environment Plan 2014 (the LEP) the site is located in area classified as Class 5 Acid Sulfate Land.
Regional hydrogeology/ groundwater use	The area's hydrogeology is characterised by fractured or fissured rock formations, with extensive aquifers of low to moderate productivity. No registered groundwater bores are present on the site. The nearest groundwater bore (GW031037) is located approximately 1.5 km south-east of the site and is utilised for unknown purposes. No information pertaining to the standing water level was available, suggesting limited to no use of groundwater within the vicinity of the site.

3 Site history review

3.1 Historical aerial photographs

Available historical aerial photographs for the site and surrounding area from 1959, 1970, 1972, 1975, 1979, 1987, 1991, 1997, 2004, 2012, 2018, 2019, 2021, 2023 and 2025 were obtained via a third party. Copies of the aerial photographs referenced above are included in Appendix B.

The aerial photograph review was conducted to develop a general history of the development of the site and surrounding properties (within approximately 200 m). Some of these photographs were taken from relatively high altitudes (generally resulting in photographic scales of more than 1:16,000) and hence the level of detail that can be interpreted for the site is limited. Information derived from historical aerial photography is described in chronological order in Table 3.1 below.

Table 3.1 Aerial photograph review

Year	Site	Surrounding area
1959	Due to the low resolution of the photograph detailed comments on the site were not possible; however, buildings may have been present.	The area immediately north of the site appeared to consist of vacant, grass covered land, while the land to the south, east and west was developed. Areas to the north-west and north-east appeared to have been partially developed. The currently existing Princes Highway, Wolseley Street, Church Street and Gordon Street had been constructed. Buildings were present on the southern side of Princes Highway to the south of the site, and on either side of Princes Highway to the east of the site. Construction related earthworks were evident approximately 200 metres to the west of the site, along Princes Highway.
1970	The existing main hospital building was present on the site, with several smaller surrounding structures distributed across the hospital complex. An unsealed access road appeared to be present in the south-eastern portion of the site, leading from the southern boundary toward the centre of the site, where it terminated. It appeared to connect with the south and east wings of the main hospital building. The alignment of this road was consistent with the current layout of the existing emergency vehicle entry point.	Previously observed construction related earthworks to the west of the site, along Princes Highway, had been replaced by completed commercial buildings.
1972	No significant changes.	No significant changes.
1975	A number of the currently existing ancillary buildings had been constructed. This included the building located at the south-western corner of the site (currently the Milton Ulladulla Community Cancer Services Centre), the MUH-C building, the	The currently existing Graham Street had been constructed. A small area of ground disturbance was noted approximately 100 metres south of the site, at the rear of a low density residential property.

Year	Site	Surrounding area
	MUH-F building, and the MUH-E building. The low resolution of earlier photographs made it difficult to confirm whether these structures were present in previous photographs. The small square building to the north of the west wing of the main hospital building (still existing today) was present, as well as the existing car port adjacent to the eastern boundary. A rectangular building and a smaller square structure (no longer present today) were visible to the west of the main hospital building. There was also a separate building to the south of the west wing of the main hospital building.	
1979	Due to the low resolution of the photograph detailed comments on the site were not possible, however there did not appear to have been significant changes from the 1975 image.	A public swimming centre (the present day Milton Swimming Centre) had been formed approximately 125 metres to 200 metres to the north-west of the site. The existing Gumley Lane (adjacent to the northern boundary of the site) had been formed.
1987	An area of ground disturbance was visible along the northern boundary of the site (on the western side). The MUH-F building appeared to have been extended, as had the building south of the hospital's west wing, connecting with the hospitals south wing.	Construction of a road (and some medium to large sized residential buildings) had occurred approximately 200 metres to the east of the site (likely the present day aged care facility, IRT Sarah Claydon Aged Care Centre). Large lot residential developments had been constructed approximately 200 metres to the north-east of the site.
1991	No significant changes.	Low density residential developments had been constructed to the south-east of the site.
1997	An extension had been constructed on the eastern side of the hospital's south wing. An access road had been formed on the western part of the site, replacing the small square building first observed in the 1975 photograph. This access track ran from the southern boundary towards the northern boundary, with an additional curved track connecting the northern part of this newly formed track to the northern side of the hospital. This access road was also being utilised for vehicle parking.	Construction of townhouses (a medium density residential development) had begun approximately 45 metres to the south-west of the site. Beyond 200 metres to the south-east of the site, there was evidence of road construction. Otherwise, no significant changes.
2004	The access road along the western boundary had been sealed. There was possibly road base (or similar) material stockpiled in the south-eastern corner of the site, likely relating to the sealing of the access road on the western part of the site. It appeared that several large items were being stored	Any remaining undeveloped land within 200 metres to the south of the site had been developed into low density residential properties.

Year	Site	Surrounding area
	along the northern boundary of the site, potentially associated with the road sealing works. Tree canopy coverage had significantly increased in the northern portion of the site. Vehicle parking across the site had also increased.	
2012	Significant changes had occurred to the main hospital building, including an extension connecting the east and south wing, an extension connecting the west and south wing, and an extension from the central part of the hospital towards the north. The building at the south-western corner of the site had also undergone what appeared to be an extension and renovation. A renovation had also occurred to the MUH-F building. The rectangular building, first observed in the 1975 photograph, has been demolished and replaced with an extension to the access road (which was first observed in the 1997 photograph). This access road was consistent with the current layout.	No significant changes.
2018	A renovation had occurred to the main hospital building, and extensions had been added to the northern part of the main hospital building. The MUH-C building had been renovated. A pergola was added north of the MUH-F building.	With areas to the north-east beyond 200 metres from the site now developed (low density residential developments), the surrounding area was largely consistent with the current layout.
2019	No significant changes.	No significant changes.
2021	No significant changes.	No significant changes.
2023	A small square structure had been constructed north of the hospitals west wing. A rectangular structure (likely associated with temporary works) had been constructed near the centre of the southern boundary.	No significant changes.
2025	The rectangular structure, previously observed near the centre of the southern boundary in the 2023 photograph, was no longer present. No other significant changes were observed.	No significant changes.

3.2 Historical businesses

A search of historical business directories was performed by a third party to identify historical occupants of the site and properties in the vicinity of the site. This information is contained within a project specific report in Appendix B, and notable potentially contaminating historical business activities within 100 metres of the site have been summarised in Table 3.2 below.

Table 3.2 Summary of potentially contaminating historical business activities surrounding the site

Business name	Activity	Address
Arjan Motors / Nixon R J (Bob)	Motor Panel Beaters	131-135, Bombay Street, Milton Approximately 50 m south of the site
Matthews Service Station	Motor Service Stations & Garages	127 Princes Hwy, Milton Approximately 50 m south of the site
Consolidated Motors Pty Ltd	Motor Cars & Trucks—Used	123 Princes Hwy, Milton Approximately 70 m southwest of the site

3.3 Previous environmental investigations

WSP was provided with the following environmental reports pertaining to the subject site:

- WSP Pty Ltd, Targeted Hazardous Materials Report and Register: Milton Ulladulla Hospital 106 Princes Highway, Milton, NSW, 2538 (WSP, 2024).
- WSP Pty Ltd, Technical Scope of Works Report - Asbestos Remediation Works: Milton Ulladulla Hospital 106 Princes Highway, Milton, NSW, 2538 (WSP, 2025).

3.3.1 WSP 2024

The report completed in 2024 by WSP (WSP, 2024) documented the findings of a targeted hazardous materials investigation. This investigation involved a site inspection and limited sampling and analysis of accessible areas, including site soils. The findings from this report pertinent to the current investigation include the identification of surficial asbestos containing material in the form of fibre cement sheet fragments and debris observed on the soil surface within the subfloor tunnels of the Main Building.

3.3.2 WSP 2025

The report completed in 2025 by WSP (WSP, 2025) outlined the remediation methodology for the removal of non-friable asbestos impacted soil located within the subfloor tunnels below the Main Building.

3.4 Supplementary historical information

The historical aerial photograph review was supplemented with a search of publicly available online sources to provide additional historical context on the development of the Milton Ulladulla Hospital site. Online sources indicate that the hospital was originally established in 1908 and relocated to the current site in 1967[1]. In 2005, a fire[2] destroyed the cottage in the south-western corner of the site, formerly known as ‘Minto House’ (constructed c1860-1870). The building was rebuilt in 2007 as the current Community Cancer Services Centre. These events correspond with changes observed in aerial imagery and help clarify site development during periods of limited image resolution.

1 Milton Ulladulla Hospital | Illawarra Shoalhaven Local Health District (ISLHD)

2 Our Story — Cancer Support Foundation

3.5 Site history summary

The site has been occupied by Milton Ulladulla Hospital since 1967, with aerial imagery showing progressive development of hospital infrastructure from that time onward. Construction of the present day hospital buildings had commenced by 1970, with further expansion occurring through the 1970s and 1980s. Major redevelopment works, including extensions to the main hospital building and ancillary structures, occurred between the early 2000s and 2010s.

Since 1967, the site has remained in continuous use as the Milton Ulladulla Hospital. A review of publicly available online sources indicates that the hospital was originally established in 1908 at another premises and began occupying the current site in 1967. The weatherboard cottage currently occupied by the Community Cancer Services Centre was originally constructed c1860-1870 and was rebuilt in 2007 following a fire.

The surrounding land use has transitioned from partially developed land in the 1950s to predominantly low density residential development by the early 2000s. Community and commercial infrastructure, including the Milton commercial complex along Princes Highway to the west of the site, a swimming centre (the present day Milton Swimming Centre) and an aged care facility (the present day IRT Sarah Claydon Aged Care Centre), were also established within 200 metres of the site.

4 Regulatory review

As part of the PSI the following published information sources were consulted in respect of the site:

State databases including:

- Online records held by the NSW Environment Protection Authority (EPA), including:
  - The record of notices issued under the *CLM Act*.
  - The public register maintained under Section 308 of the *POEO Act*; and
  - The list of sites notified to the EPA under Section 60 of the *CLM Act*.
- Records held by government and statutory bodies relating to investigation and management of per- and polyfluoroalkyl substances (PFAS).
- Heritage registers.

To facilitate the above searches of the EPA records a third party was engaged to provide the relevant information. This information is contained within a project specific report in Appendix B.

4.1 NSW environment protection authority

4.1.1 CLM Act notices

The NSW EPA's register for contaminated land notices under the *CLM Act* does not identify any premises within 2 km of the site as being subject to current or prior notices.

4.1.2 Notifications under Section 60 of the CLM Act

The NSW EPA maintains a "List of NSW contaminated sites notified to the EPA" under Section 60 of the *CLM Act*. Sites on this list indicate that the notifiers consider that the sites are contaminated and warrant reporting to the NSW EPA. The contamination at the site may or may not be significant enough to warrant regulation by the EPA and the EPA reviews relevant site information before making a determination as to whether or not the site warrants regulation. The search indicated that there were no premises within 1 km of the site that had been identified as a contaminated site.

4.1.3 EPLs under the POEO Act

The NSW EPA maintains a public register of premises subject to an Environment Protection Licence (EPL) under the POEO Act. While the search indicated that there were no current licenced activities within 1 km of the site, the search identified one premises with former licenced activities no longer regulated by the EPA. This site and the associated activity are detailed in Table 4.1 below.

Table 4.1 Delicenced activities formerly regulated by the EPA (within 1 km of the site)

Organisation	Address	Activity	Direction and Distance
Forest Corporation of New South Wales	Not available – Applies to a larger area without specific definition (forests).	Logging Operations	Not available – Applies to a larger area without specific definition (forests).

4.1.4 NSW EPA notices

The NSW EPA maintains a list of Penalty Notices, Clean up Notices and Prevention Notices. A search of the database indicated that there were no notices on the site and one notice for premises within 1 km of the site. This is detailed in Table 4.2 below.

Table 4.2 EPA notices (within 1 km of the site)

Organisation	Address	Notice Type	Offence and date	Direction and Distance
Forest Corporation of New South Wales	Southern Region (S.R.) Means the State Forests and Crown - Timber Lands (Excluding Plantations)	Clean Up Notice	s.91 Clean Up Notice	Not available – Applies to a larger area without specific definition (forests).

4.1.5 Former gasworks

A review of the information contained within Appendix B indicates that there are no premises within 2 km of the site which are registered former gasworks sites. Waste management facilities

A review of the information contained within Appendix B indicates that there are no within 2 km of the site which are registered on the National Waste Management Site Database.

4.3 PFAS management programs

A review of the information contained within Appendix B indicates that there are no premises within 2 km of the site which are listed on the NSW EPA, Defence and Airservices Australia PFAS investigation and management programs.

WSP performed a review of register of NSW Rural Fire Service (FRS) and NSW Fire and Rescue (F&R) sites which are the subject of PFAS assessments. Based on the review, performed on 5 June 2025, there are no RFS or F&R sites subject to an assessment within 10 km of the site.

4.4 Heritage registers

A review of the information contained within Appendix B indicates that there are no National or State heritage listings for the site or within 200 m of the site. The Shoalhaven LEP identifies one item of local heritage significance on the site, and sixteen heritage items within 200 metres of the site. The onsite heritage listing is identified in Table 4.3.

Table 4.3 State heritage register listings

Name	Address	Lot	Listing number
Federation weatherboard residence and well, “Garrad House” – Federation period farmhouse	106 Princes Highway, Milton NSW 2538	Lot 1, DP 1127802	281

One of the historical references viewed in Section 3.4 referred to a heritage listed “bee hive well” associated with the circa 1860s/1870s cottage destroyed by fire. It is uncertain if the beehive well is the well associated with the federation Garrad House.

4.5 Regulatory review summary

Based on review of available regulatory databases, there has been no EPA notices for, or licensed activities at the site. One formerly licensed activity (no longer regulated) has occurred in the wider area surrounding the site, associated with historical logging activities.

5 Limited soil sampling program

5.1 Purpose

WSP undertook a limited soil sampling program on the site to investigate potential contamination to assist in the preparation of a Review of Environmental Factors (REF), to support planning and approvals for the Milton Hospital Upgrade project.

5.2 Scope

WSP undertook the following scope of works for the limited soil sampling programme:

- Site walkover and inspection
- Excavation of four (4) boreholes using a hand auger, refer to bore logs in Appendix D.
- Collection of shallow surficial soil samples from each of the four (4) borehole locations.
- Laboratory analysis of eight (8) samples for the following analytical suite:
  - Total recoverable hydrocarbons (TRH).
  - Benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN).
  - Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc).
  - Polycyclic aromatic hydrocarbons (PAH).
  - Asbestos
  - Per- and polyfluoroalkyl substances (PFAS).
- Laboratory analysis of one (1) duplicate sample and one (1) rinsate sample for quality control purposes.
- Comparison of analytical results against applicable site assessment criteria.

5.3 Site walkover inspection

The site was inspected on 27 May 2025 by a WSP Senior Associate Environmental Consultant. A photographic log from the walkover is included in Appendix C.

The site inspection was conducted in publicly accessible external areas of the site; no internal building inspection was undertaken. At the time of the inspection, the majority of the site was occupied by Milton Ulladulla Hospital, with the exception of the building located at the south-western corner, which was occupied by the Milton Ulladulla Community Cancer Services Centre.

The site was bound by Princes Highway to the south, Gumley Lane to the north, and low density residential properties to the west and east. The site comprised the main Milton Ulladulla Hospital building, centrally located within the site, along with associated ancillary buildings and structures, sealed asphalt access roads and car parks, grass covered areas, and landscaped gardens.

Key observations were:

- Evidence of bulk storage of flammable liquid (suspected diesel fuel for the backup generators, however, this was not confirmed) was observed adjacent to the eastern boundary of the site, within a concrete structure (the MUH-E building). A patch of bare soil (approximately 1 metre by 1.5 metres) was observed to the north of MUH-E.

- Multiple fire hydrants and extinguishers were noted throughout the site.
- Two diesel fuelled backup generators were observed to the west of the main hospital building, with a concrete hardstand observed beneath it (preventing any unexpected spills from contact with the ground surface). No fuel lines were connected to the generators, suggesting internal fuel storage. No signs of leaks or spills was noted. An oil and fuel spill response kit was located next to the generators. Signage indicated that maintenance was managed by PowerGen Australia, with a phone number provided.
- A large liquified petroleum gas (LPG) above ground storage tank (AST) was noted to the north of the previously mentioned diesel fuelled backup generators. An additional, smaller LPG AST was also noted to the south of the Cancer building. Signage indicated that maintenance was managed by Origin, with a phone number provided.
- Undulating mounds were observed, indicative of some cut/fill activities.

Additional site features included:

- Landscaped gardens, characterised by mulched garden beds containing shrubs and bushes, were present throughout the site, along with a number of mature trees and grass covered areas. Intermittent areas of bare ground were observed beneath consistent tree canopy cover; these were not considered indicative of contamination, rather the result of limited sunlight availability.
- Areas covered in asphalt pavement and some grass covered areas throughout the hospital complex were utilised for vehicle parking.
- A number of stormwater drains were noted across the site.

5.4 Methodology

Intrusive assessment comprised collection of shallow surface samples from four boreholes to a maximum depth of 0.35 m below ground level (mBGL). The boreholes were hand augered and samples collected on 27 May 2025. Quality assurance/control (QAQC) samples were also taken including an intra-laboratory duplicate and a rinsate blank (water sample). The samples collected and analytical suite are identified in Table 5.1.

The contamination assessment included:

- A visual inspection and logging of the soil profile, including inspection for ACM.
- Collection of soil samples at the surface (0.0-0.1 mBGL), at a depth of 0.2-0.3 mBGL and at a depth of 0.5-0.6 mBGL (unless prior refusal), at a minimum, and at any evidence of contamination or change in soil type or quality. Samples were collected directly from the hand-auger, using new dedicated nitrile gloves for each sample.
- Samples were placed in an “esky”, with samples for chemical analysis being placed with ice to keep the sample chilled.
- All samples collected were submitted under chain of custody to ALS Environmental (ALS). ALS holds accreditation with National Association of Testing Authorities (NATA) for analyses performed, with the exception of asbestos fines/friable asbestos (AF/FA) analysis, which is currently unable to be NATA accredited for the detection limits required. Some “total” results are not NATA accredited, however, the individual analyses are accredited. Copies of the laboratory certificates including chain of custody documentation are included in Appendix E.

Table 5.1 Samples collected

Borehole	Sample depth	Analysis					
		TRH	BTEXN	Heavy metals	PAHs	Asbestos	PFAS
BH01	0.05	X	X	X	X	X	X
BH02	0.0	X	X	X	X	X	X
	0.2	X	X	X	X	X	X
	0.3	X	X	X	X	X	X
BH03	0.0	X	X	X	X	X	X
	0.1	X	X	X	X	X	X
BH04	0.0	X	X	X	X	X	X
	0.1	X	X	X	X	X	X
	0.1 (as QA100)	X	X	X	X		X
Hand auger Rinsate	Rinsate	X	X	X			X

5.5 Soil assessment criteria

The assessment criteria for the investigation have been based on an analysis of land uses and potential receptors. Based on this, the assessment criteria provided in the following guidelines have been identified as being applicable for assessing laboratory analytical data:

- *Schedule B1 Guideline on Investigation Levels for Soil and Groundwater* of the National Environment Protection (Assessment of Site Contamination) Measure 1999, National Environment Protection Council, 2013 (NEPC 2013, the NEPM).
- *PFAS National Environmental Management Plan Version 3.0*, Heads of EPA Australia and New Zealand, March 2025 (the NEMP).

Assessment results have been initially reviewed against criteria applicable to the ongoing use of the site as a hospital. Based on this land use the application of ecological-based criteria is not considered to be relevant.

The NSW EPA has endorsed the NEPM (2013), which presents criteria for a range of land use scenarios (such as residential, parks and open spaces, and commercial/industrial use). The health investigation levels (HILs) and health screening levels (HSLs), presented in Schedule B1 of the NEPM provide an assessment of potential risk to human health from exposure to soil by dermal contact, ingestion or inhalation pathways. HSLs are soil type and depth dependent while HILs are independent of soil type and depth.

Soil assessment criteria typically adopted for commercial/industrial sites are not applicable for sites which are used by sensitive populations (such as children and the elderly on hospital sites). Analytical results for soil samples collected during this assessment were therefore compared to criteria for residential sites with limited opportunity for soil access (HIL B and HSL A/B). As a conservative approach the HSLs for shallow sand have been adopted to assess risk from exposure to hydrocarbon compound vapours.

The NEPM also documents management limits (MLs) for hydrocarbon compounds. MLs are values which are intended to be protective of buried infrastructure, fire and explosive hazards and the formation of non-aqueous phase liquids. MLs are soil type dependent. The conservative MLs for coarse-grained soil has been adopted as a screening level.

The NEMP provides guidance on the management of per and polyfluoroalkyl substances (PFAS), a complex group of chemicals which have been used for a wide range of purposes including in fire fighting foams. The NEMP documents health based guidelines for a limited number of PFAS compounds for a range of land uses. The HILs for residential land use with minimal access for soil were adopted, consistent with guidance from the NEPM.

Results are compared against these criteria in Table F1 in Appendix F.

5.6 Fieldwork observations

The boreholes were drilled in grass covered, accessible areas of the site. Fill materal was observed the maximum depth of investigation (refusal at 0.35 mBGL). Fill was variable, and included silty clay, gravelly or clayey sand, sandy clay, low plasticity clay and high plasticity silty clay. Borelogs are presented in Appendix D.

No potential ACM or odours or staining indicating potential contaminaiton were observed. As noted in Section 5.3 undulating mounds were observed, indicative of some cut/fill activities

5.7 Laboratory analytical results

Analysis results are summarised in Table F1 in Appendix F. The following is a summary of the chemical analytical results:

- Concentrations of one or more analytes were detected above laboratory limit of reporting (LOR) in all samples analysed for heavy metals. All results were below the criteria adopted for the site assessment.
- TRH and BTEXN were not detected in any of the samples analysed. The detection limits for the analytes were below the criteria adopted for the site assessment.
- Low levels of PAH compounds were detected in one sample (BH04_0.1-.0.3 and the corresponding QA/QC duplicate). All PAH results were below the criteria adopted for the site assessment.
- Asbestos (including “trace” asbestos or respirable fibres), synthetic mineral fibres and organic fibres were not detected in any of the samples analysed..
- Low levels of PFAS compounds were detected in the majority of the samples analysed. The concentrations of perfluorooctane sulfonic acid (PFOS) reported were four orders of magnitude below the criteria adopted for the site assessment.

6 Conceptual site model

Based on the desktop review of the site setting and historical land use information, the site inspection and on the results of the limited soil sampling and analysis program a preliminary conceptual site model (CSM) has been prepared. This is summarised Table 6.1.

Table 6.1 Preliminary Conceptual Site Moel

Source	Potential contaminant	Potential transport mechanisms	Potential exposure pathways	Potential receptors	Comments
Site filling: cut and fill activities or importation of uncontrolled fill	A broad range of potential contaminants including asbestos, metals, TRH, BTEX and PAH	Direct release to fill material. Transport of soil particles in stormwater flow.	Direct contact. Incidental ingestion of soil. Inhalation of dust or fibres derived from exposed soil.	Hospital staff, maintenance workers, patients.	Potentially complete pathway. Patients are unlikely to access areas of the site which are not paved or covered by buildings.
Historic fire: potential use of fire-fighting foams	PFAS	Application to ground during firefighting activities. Leaching to surface water and ground water.	Direct contact. Incidental ingestion of soil. Inhalation of dust from exposed soil.	Hospital staff, maintenance workers, patients.	Unlikely to be a complete pathway due to the date of the fire and based on the shallow soil analytical results.
Fuel (diesel) storage	TRH	Direct release to ground by spillage or leakage. Transport of soil particles in stormwater flow.	Direct contact. Incidental ingestion of soil.	Hospital staff, maintenance workers.	Unlikely to be a complete pathway as diesel is stored in an above ground tank or in day-tanks on the back-up power generators and there is no evidence of spills or leakage.
Off-site commercial/ industrial activities including fuel storage on a former service station site	TRH, BTEXN	Groundwater transport of dissolved phase contamination.	Inhalation of vapours from groundwater. Direct or indirect contact with groundwater is not considered to be a complete pathway.	Hospital staff, maintenance workers, patients.	Unlikely to be a complete pathway as the occurrence of leakage from the off-site service station tanks is unconfirmed.

7 Summary

Based on the investigations performed for the property at 106 Princes Highway, Milton, the following summary can be made with respect to risks related to contamination:

- Based on the site topography, it is possible that filling either by cut and fill or with imported, potentially contaminated, materials may have occurred throughout the site as part of levelling relating to construction of buildings on the site.
- Hospital land use at the site commenced in 1967. Based on available desktop information, no commercial activities with a high potential to cause contamination are known to have occurred at the site.
- A heritage cottage located in the south western corner of the site was destroyed by fire in 2005.
- A review of registers maintained by the EPA with respect to contamination issues or activities which require a licence did not identify on-site, or nearby off-site, premises which pose a significant risk to the condition of the site.
- The results of the limited soil investigation sampling and analysis program did not identify concentrations of potential contaminants above the adopted assessment criteria.
- Asbestos fibre cement sheet fragments and debris was identified on the soil surface within the subfloor tunnels of the Main Building during a hazardous materials survey performed in 2024.

8 Conclusions and recommendations

It is considered unlikely that current and former activities at the site, or from nearby commercial sites, have resulted in gross contamination of the Milton Ulladulla Hospital site.

It is understood that the site will continue to be used as a hospital and for provision of health services and an upgrade of site facilities is proposed. The proposed upgrade includes an expansion of the existing cancer care centre and an upgrade of medical imaging facilities. Based on the results of the investigations performed it is considered the site is suitable for ongoing use as a hospital.

The following recommendations are made:

- A Construction Environmental Management Plan (CEMP), including an unexpected finds protocol, be implemented if the upgrade includes ground disturbance works.
- Waste, including excess spoil, must be disposed in accordance with regulatory guidance following classification in accordance with the NSW EPA's Waste classification guidelines Part 1: Classifying waste (EPA 2014).

9 Limitations

This Report is provided by WSP Australia Pty Limited (WSP) for Taylor Construction Group Pty Ltd (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated 2 May 2025 and agreement by the Client dated 19 May 2025 (Agreement).

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Appendix A

Figure

Milton-Ulladulla Hosptial Expansion

Contamination Investigation

Figure 1- Borehole Locations

Legend

- Site boundary
- Borehole locations

Coordinate System: GDA 2020 MGA Zone 56
Scale ratio correct when printed at A3

1:388

Date: 22-05-2025

Data Sources: NearMap, OpenStreetMap

Appendix B

Land Insight Report

Land Insight

Due Diligence Insight Report

106 Princes Highway
Milton, NSW

28 May 2025

Report nº:
LI-4836 DDR

Understanding your report

Thank you for ordering your report from Land Insight. If you have any feedback, questions or queries, please get in touch with us at orders@landinsight.co.

Your Report has been produced by Land Insight and contains information related to current and historical land use information, environmental risks and hazards.

The information presented in this report includes Land Insights' comprehensive research into current and historical land use derived from Land Insight's proprietary National Land Use Atlas (NLUA), environmental risk information and data available from public databases, third party providers, local and state authorities. The report also includes detailed property and soil setting information, hydrogeology, identification of potential pollution and contamination along with ground and natural hazards.The records identified are presented within a 200 to 2000m radius (buffer zone) from the boundaries of the Property searched, depending on the screened constraint. The report is separated and grouped into easy to navigate sections as per Summary below:

Section 1	**PROPERTY SETTING**	Sensitive Receptors, Planning Controls, Zoning, Heritage, Soil and Land Information, Geology and Topography
Section 2	**HYDROGEOLOGY AND GEOTECHNICAL**	Groundwater Bores and Other Borehole investigations, Groundwater Dependent Ecosystems (GDE), Aquifer and Wetland, Other Hydrogeology information.
Section 3	**ENVIRONMENTAL REGISTERS, LICENCES AND INCIDENTS**	Contaminated Land Public Register, Licences, Audits and Orders, Sites Regulated by Other Jurisdictional Body (Former Gaswork sites / PFAS sites, UXO Areas), Historical Landfills, Derelict Mines and National Pollutant Inventory (NPI).
Section 4	**POTENTIALLY CONTAMINATED AREAS**	Potentially Contaminating activities (Industries, businesses and activities that may cause contamination), Historical Potentially Contaminating activities and Historical Land Use.
Section 5	**NATURAL HAZARDS**	Erosion hazard, Flood hazards, Bushfire prone land and Bushfire history.

This report includes data listed on page 4 (table of contents). All sources of data and definitions are provided in the Product Guide (Attached). For a full list of references, metadata, publications or additional information not provided in this report, please contact orders@landinsight.co.

This report does not include information derived from a physical inspection. It is important to note that a site inspection can present information relevant to other risks and hazards that may not be identified by this Report.

Due to the ongoing nature of database development and frequency of updates provided by various state government regulators and data sources, the data displayed within this report is only current from date of production. While every effort is made to ensure the details in your Report are correct, Land Insight cannot guarantee the accuracy or completeness of the information and/or data provided.

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Report Summary

Dataset name		Onsite	On Buffer	Buffer Distance
Section 1 - Property Setting				
1.1	Sensitive Receptors	✓	✓	200m
1.2a	Planning Controls *(Zoning)*	✓	✓	500m
1.2b	Planning Overlays *(Environmental Planning Instruments)*	✓	✓	500m
	Planning Overlays *(Other Planning Information)*			500m
1.3	Heritage *(State and Local Heritage)*	✓	✓	200m
	Heritage *(Australian and World Heritage Database Register)*			200m
1.4a	Soil and Land Use Information *(Soil Landscape)*	✓	✓	500m
	Soil and Land Use Information *(Soil Salinity)*			500m
	Soil and Land Use Information *(Radon)*	✓	✓	500m
1.4b	Acid Sulfate Soil *(State and Local Acid Sulfate Soil Registers)*	✓	✓	500m
	Acid Sulfate Soil *(National Acid Sulfate Soil Registers)*	✓	✓	500m
1.5	Geology and Topography *(Geology)*	✓	✓	500m
	Geology and Topography *(Naturally Occurring Asbestos Potential NOA)*			500m
Section 2 – Hydrogeology and Geotechnical				
2.1	GDE & Hydrogeology Constraints *(Aquifer Type)*	✓	✓	2000m
	GDE & Hydrogeology Constraints *(Groundwater Protection Areas)*			2000m
	GDE & Hydrogeology Constraints *(Wetlands)*			2000m
	GDE & Hydrogeology Constraints *(GDE Surface)*			2000m
	GDE & Hydrogeology Constraints *(GDE Subsurface)*		✓	2000m
	GDE & Hydrogeology Constraints *(Groundwater Licences)*			2000m
	GDE & Hydrogeology Constraints *(Groundwater Bores)*		✓	2000m
2.2	Groundwater and Other Bores *(Groundwater Restricted Use Zones)*			2000m
	Groundwater and Other Bores *(Groundwater Salinity)*	✓	✓	2000m
	Groundwater and Other Bores *(Other Known Boreholes Investigations)*		✓	2000m
Section 3 - Environmental Registers, Licences and Incidents				
3.1	Contaminated Land Public Register (Contaminated Sites)			1000m
3.2	Licences, Approvals & Assessments *(Licences)*		✓	1000m
	Licences, Approvals & Assessments *(Audits)*		✓	1000m
	Licences, Approvals & Assessments *(Clean up Notices, Penalty Notices and Orders)*		✓	1000m
3.3a	Sites Regulated by other Jurisdictional Body (*Contaminated Legacy Areas)*			2000m
	Sites Regulated by other Jurisdictional Body (*Defence, Military Sites and UXO Areas)*			2000m
	Sites Regulated by other Jurisdictional Body (*Former Gasworks Sites)*			2000m
	Sites Regulated by other Jurisdictional Body (*PFAS Sites)*			2000m
3.3b	Other Potential Hazard Sources (*Mines and Quarries)*			500m
	Other Potential Hazard Sources (*Landfills)*			500m
	Other Potential Hazard Sources (*National Pollutant Inventory NPI)*			500m
Section 4 - Potentially Contaminated Areas				
4.1	Potentially Contaminating Activities (Liquid Fuel Facilities)	✓	✓	200m
4.2	Historical Business Directories		✓	200m
Section 5 - Natural Hazards				
5.1	Fire Hazard *(Bushfire Prone Areas)*		✓	500m
	Fire Hazard *(Bushfire History)*			500m
5.2	Flood Hazard *(Flood Planning Area)*			500m
	Flood Hazard *(Other Flood Studies)*			500m
	Flood Hazard *(Flood History)*			500m
5.3	Erosion Hazard	✓	✓	500m

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Section 1 Property Setting

1.1 Sensitive Receptors and Features of Interest

Map 1.1 (200m)

Sensitive receptor	Type	Distance (m)	Direction
Milton Ulladulla Hospital	Hospital and Health Care	0.0	Onsite
Milton Ulladulla Nursing Agency	Residential and Aged Care Services	7.5	West
Watercourse	Watercourse	164.4	North
Milton Swimming Centre	Sports and Recreation	171.7	North

Source: Sensitive Receptors

1.2a Planning Controls

Map 1.2a (500m)

Zoning

Zoning	Type	Details	Distance (m)	Direction
SP2	Infrastructure	Shoalhaven Local Environmental Plan 2014	0.0	Onsite
R2	Low Density Residential	Shoalhaven Local Environmental Plan 2014	0.4	North
E1	Local Centre	Shoalhaven Local Environmental Plan 2014	19.5	South
R3	Medium Density Residential	Shoalhaven Local Environmental Plan 2014	39.5	South-west
R1	General Residential	Shoalhaven Local Environmental Plan 2014	107.2	North
RE1	Public Recreation	Shoalhaven Local Environmental Plan 2014	107.9	North
RU1	Primary Production	Shoalhaven Local Environmental Plan 2014	176.4	North
R5	Large Lot Residential	Shoalhaven Local Environmental Plan 2014	279.4	North-east

Zoning	Type	Details	Distance (m)	Direction
E4	General Industrial	Shoalhaven Local Environmental Plan 2014	307.8	South
C2	Environmental Conservation	Shoalhaven Local Environmental Plan 2014	437.0	North-west
SP3	Tourist	Shoalhaven Local Environmental Plan 2014	464.5	South-east

Source: Zoning, Planning Overlays and Other Planning Information

1.2b Planning Overlays

Map 1.2b (500m)

Environmental Planning Instruments

Name	Type	Details	Distance (m)	Direction
Buffer Area	Coal Seam Gas Exclusions	State Environmental Planning Policy (Resources and Energy) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Resilience and Hazards) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Biodiversity and Conservation) 2021	0.0	Onsite
Item - General	Heritage	Shoalhaven Local Environmental Plan 2014	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Exempt and Complying Development Codes) 2008	0.0	Onsite
500-524	Minimum Lot Size (sq m)	Shoalhaven Local Environmental Plan 2014	0.0	North
8-8.9	Maximum Building Height (m)	Shoalhaven Local Environmental Plan 2014	0.0	North
Land Application	SEPP Land Application	State Environmental Planning Policy (Industry and Employment) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Primary Production) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Planning Systems) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Transport and Infrastructure) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Resources and Energy) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Housing) 2021	0.0	Onsite
Class 5	Acid Sulfate Soils	Shoalhaven Local Environmental Plan 2014	0.0	Onsite
40%	Minimum Water Use Standard (%)	State Environmental Planning Policy (Sustainable Buildings) 2022	0.0	Onsite
Allowable Clearing Area	Allowable Clearing	State Environmental Planning Policy (Biodiversity and Conservation) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Sustainable Buildings) 2022	0.0	Onsite
Included	Land Application	Shoalhaven Local Environmental Plan 2014	0.0	Onsite
Land Within a Residential Zone	Coal Seam Gas Exclusions	State Environmental Planning Policy (Resources and Energy) 2021	0.0	North
Subject Land	SEPP Land Application	State Environmental Planning Policy (Biodiversity and Conservation) 2021	0.0	Onsite
Additional Permitted Uses	Additional Permitted Uses	Shoalhaven Local Environmental Plan 2014	147.7	West
Category 3 Watercourse	Riparian Lands and Watercourses	Shoalhaven Local Environmental Plan 2014	162.9	North

Name	Type	Details	Distance (m)	Direction
10-49.9	Minimum Lot Size (sq m)	Shoalhaven Local Environmental Plan 2014	175.0	North
3000-4999	Minimum Lot Size (sq m)	Shoalhaven Local Environmental Plan 2014	277.9	North-east
Scenic Protection	Scenic Protection	Shoalhaven Local Environmental Plan 2014	432.8	North
Excluded Land	Terrestrial Biodiversity	Shoalhaven Local Environmental Plan 2014	435.9	North-west
Biodiversity - significant vegetation	Terrestrial Biodiversity	Shoalhaven Local Environmental Plan 2014	435.9	North-west

Other Planning Information

Name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-

Including Mining Subsidence Areas.
Source: Zoning, Planning Overlays and Other Planning Information

1.3 Heritage

Map 1.3 (500m)

State and Local Heritage Registers

Site ID	Site Name	Type	Details	Distance (m)	Direction
281	Federation Weatherboard Residence and Well, "Garrad House" Federation Period Farm House	Heritage Register	Item - General	0.0	Onsite
286	Victorian Georgian Residence and former Dispensary	Heritage Register	Item - General	19.5	South
297	Late Victorian Brick Residence	Heritage Register	Item - General	19.5	South
287	Federation Weatherboard Residence and garden	Heritage Register	Item - General	20.0	South
289	Victorian Weatherboard Hall (former Salvation Army Hall)	Heritage Register	Item - General	20.2	South
290	Federation Weatherboard Residence	Heritage Register	Item - General	26.9	South-east
291	Inte-war Californian Bungalow	Heritage Register	Item - General	39.2	South-east
280	Victorian Weatherboard Residence and shop	Heritage Register	Item - General	47.0	West
278	Two storey Victorian Bakery and Residence	Heritage Register	Item - General	63.5	West
284	Relocated Victorian Rendered Masonry Lighthouse Keeper's Cottage	Heritage Register	Item - General	75.1	East
283	Milton Anglican Church Group incl Victorian Gothic Revival Church, Gothic style Hall and Chinese Elm	Heritage Register	Item - General	104.9	West
277	"The Star Hotel" two storey Rendered Masonry building	Heritage Register	Item - General	147.5	West
259	Victorian Weatherboard Residence and garden	Heritage Register	Item - General	148.8	South-west
282	Victorian Italianate style Bank Building (former CBC Bank)	Heritage Register	Item - General	151.0	West

Site ID	Site Name	Type	Details	Distance (m)	Direction
260	Victorian Georgian Worker's Cottage	Heritage Register	Item - General	163.2	South-west
279	"The Settlement" RowofVict Masonry Shops & Frederick Halls Wboard Shop & Res. & 2 st Com Bldg &Tree	Heritage Register	Item - General	178.8	West
265	Victorian Gothic Revival Rubblestone Ch (fmr Congregational Ch) &Victorian Georgian Brick Manse	Heritage Register	Item - General	191.1	South

Source: State and Local Heritage Registers

Australian Heritage Database Register

Site ID	Site Name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-	-

Source: Commonwealth Heritage List, National Heritage List and World Heritage Area

1.4a Soil and Land Use Information

Map 1.4a (500m)

Soil Landscape

Code	Name	Soil Group	Description	Distance (m)	Direction
BP	Kurosols	Brown Podzolic Soils	GSG classification - Acid, predominantly brownish to yellowish soils, lacking or with a weak A2 horizon and generally having weakly to moderately differentiated profiles with merging horizons.	0.0	Onsite

Source: Soil Landscape

Salinity

Salinity Hazard	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-

Source: Soil Salinity

Radon

Radon Level (Bq/m³)	Distance (m)	Direction
11	0.0	Onsite

Typical radon levels in Australia are low and the values shown are the average values for each census district. For specific location, factors such as the local geology and house type could lead to different values. (ARPANSA).

1.4b Acid Sulfate Soil

Map 1.4b (500m)

State and Local Acid Sulfate Soil Registers

Name	Classification	Description	Distance (m)	Direction
Acid Sulfate Soils	Class 5	Class 5: Acid sulfate soils are not typically found in Class 5 areas. Areas classified as Class 5 are located within 500 metres on adjacent class 1,2,3 or 4 land. | Development consent requirement: Works within 500	0.0	Onsite

Name	Classification	Description	Distance (m)	Direction
		metres of adjacent Class 1, 2a, 2b, 3 or 4 land that is below 5 metres Australian Height Datum and by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2a, 2b, 3 or 4 land.		

To ensure that development does not disturb, expose, or drain acid sulfate soils and cause environmental damage, development consent may be required for conducting works within areas and land shown on the Acid Sulfate Soils Map.
Source: National, State and Local Acid Sulfate Soils Registers

National Acid Sulfate Soil Register

Name	Classification	Description	Distance (m)	Direction
Atlas of Australian Acid Sulfate Soils	Low Probability of occurrence	Acid sulfate soil generally within upper 1m in wet / riparian areas.	0.0	Onsite

Acid Sulfate Soils (ASS) are all those soils in which sulfuric acid may be produced, is being produced, or has been produced in amounts that have a lasting effect on main soil characteristics.
Source: National, State and Local Acid Sulfate Soils Registers

1.5 Geology and Topography

Map 1.5 (500m)

Geology

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
Eastern Lachlan Orogen Synthesis - version 2	Puim	Milton Monzonite	Kungurian (base) to Kungurian (top)	Unassigned Permian intrusions	Monzonite	Porphyritic monzonite with phenocrysts of glassy plagioclase in a black fine-grained (and sporadically sub-aphanitic) matrix; variable to a monzonite-porphyry; weathers to a light colour; small zones of olivine basalt ?dyke material.	0.0	Onsite
Ulladulla 250K Metallogenic (original lines)	Puim	Milton Monzonite	Kungurian (base) to Kungurian (top)	Unassigned Permian intrusions	Monzonite	Porphyritic monzonite with phenocrysts of glassy plagioclase in a black fine-grained (and sporadically sub-aphanitic) matrix; variable to a monzonite-porphyry; weathers to a light colour; small zones of olivine basalt ?dyke material.	0.0	Onsite
Ulladulla-Batemans Bay - Seamless Geology Upgrade	Puim	Milton Monzonite	Kungurian (base) to Kungurian (top)	Unassigned Permian intrusions	Monzonite	Porphyritic monzonite with phenocrysts of glassy plagioclase in a black fine-grained (and	0.0	Onsite

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
						sporadically sub-aphanitic) matrix; variable to a monzonite-porphyry; weathers to a light colour; small zones of olivine basalt ?dyke material.		
South Coast Permian intrusions - new age dates	Puim	Milton Monzonite	Kungurian (base) to Kungurian (top)	Unassigned Permian intrusions	Monzonite	Porphyritic monzonite with phenocrysts of glassy plagioclase in a black fine-grained (and sporadically sub-aphanitic) matrix; variable to a monzonite-porphyry; weathers to a light colour; small zones of olivine basalt ?dyke material.	0.0	Onsite
Eastern Lachlan Orogen Synthesis - version 2	Pshs	Snapper Point Formation	Kungurian (base) to Kungurian (top)	Shoalhaven Group	Sandstone	Fine- to medium-grained sandstone, pebbly sandstone and polymictic pebble conglomerate (down sequence), medium- to coarse-grained sandstone with lithic pebbles and fragments, minor siltstone (up sequence); brachiopod, bivalve and bryozoan fossils common.	488.0	East
Ulladulla 250K Metallogenic (original lines)	Pshs	Snapper Point Formation	Kungurian (base) to Kungurian (top)	Shoalhaven Group	Sandstone	Fine- to medium-grained sandstone, pebbly sandstone and polymictic pebble conglomerate (down sequence), medium- to coarse-grained sandstone with lithic pebbles and fragments, minor siltstone (up sequence); brachiopod,	488.0	East

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
						bivalve and bryozoan fossils common.		
Ulladulla-Batemans Bay - Seamless Geology Upgrade	Pshs	Snapper Point Formation	Kungurian (base) to Kungurian (top)	Shoalhaven Group	Sandstone	Fine- to medium-grained sandstone, pebbly sandstone and polymictic pebble conglomerate (down sequence), medium- to coarse-grained sandstone with lithic pebbles and fragments, minor siltstone (up sequence); brachiopod, bivalve and bryozoan fossils common.	488.0	East
South Coast Permian intrusions - new age dates	Pshs	Snapper Point Formation	Kungurian (base) to Kungurian (top)	Shoalhaven Group	Sandstone	Fine- to medium-grained sandstone, pebbly sandstone and polymictic pebble conglomerate (down sequence), medium- to coarse-grained sandstone with lithic pebbles and fragments, minor siltstone (up sequence); brachiopod, bivalve and bryozoan fossils common.	488.0	East
Eastern Lachlan Orogen Synthesis - version 2	Q_avf	Alluvial valley deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Fluvially-deposited quartz-lithic sand, silt, gravel, clay.	488.5	North
NSW Coastal Quaternary Geology - North & South	Q_avf	Alluvial valley deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Fluvially-deposited quartz-lithic sand, silt, gravel, clay.	488.5	North
Ulladulla 250K Metallogenic (original lines)	Q_avf	Alluvial valley deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Fluvially-deposited quartz-lithic sand, silt, gravel, clay.	488.5	North
Ulladulla-Batemans Bay - Seamless	Q_avf	Alluvial valley deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Fluvially-deposited quartz-lithic	488.5	North

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
Geology Upgrade						sand, silt, gravel, clay.		
South Coast Permian intrusions - new age dates	Q_avf	Alluvial valley deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Fluvially-deposited quartz-lithic sand, silt, gravel, clay.	488.5	North

Source: Geology

Naturally Occurring Asbestos Potential (NOA)

Category	On the Property?	Within Buffer?
Not identified	-	-

Source: Naturally Occurring Asbestos NOA

Topography

Topography (Onsite)	70 - 78 mAHD

Source: National, State and Local Acid Sulfate Soils Registers

Section 2 Hydrogeology and Geotechnical

2.1 GDE & Hydrogeology Constraints

Map 2.1 (2000m)

Aquifer Type

Type	Distance (m)	Direction
Fractured or fissured, extensive aquifers of low to moderate productivity	0.0	Onsite

Source: Groundwater Aquifers

Groundwater Protection Areas

Name	Water Plan Area	Distance (m)	Direction
Not identified	-	-	-

Source: Groundwater Protection Areas and Groundwater Restricted Use Zones

Wetlands

Name	Description	Distance (m)	Direction
Not identified	-	-	-

Source: Wetlands

Groundwater Dependent Ecosystems (GDE) - Aquatic (Surface)

Potential	Distance (m)	Direction
Not identified	-	-

Aquatic - Ecosystems that rely on the Surface expression of groundwater.
Source: Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDE) - Terrestrial (Subsurface)

Potential	Distance (m)	Direction
Moderate potential GDE - from regional studies	342.9	North
Low potential GDE - from regional studies	510.4	North-west
High potential GDE - from regional studies	571.1	North-west

Terrestrial - Ecosystems that rely on the Subsurface expression of groundwater.
Source: Groundwater Dependent Ecosystems

Groundwater Licences (Western Australia)

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
Not identified	-	-	-	-	-	-

Source: Groundwater Protection Areas and Groundwater Restricted Use Zones

Groundwater Bores

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity/ TDS (mg/l)	Yield (L/s)	Distance (m)	Direction
3	GW031037	Unknown	01/06/1966	60.4	60.4	Null	Good	0.1	1459.5	South-east
2	GW011946	Household	01/02/1956	2.7	2.7	Null	Null	Null	1775.0	North-west
4	GW011945	Household	01/02/1956	6.6	6.6	Null	Null	Null	1808.4	North-west
1	GW011944	Household	01/02/1956	7.0	7.0	Null	Null	0.3	1832.1	North

Note: The use of the symbol "-" or "Null" indicates that no records were found.
SWL: Standing Water Level (the latest record is displayed). RWL: Rest Water Level (the latest record is displayed). TSS: Total Soluble Salts.
Source: Groundwater Bores & Lithology

Groundwater Bores Driller Lithology Details

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
GW031037	0m-0.61m Soil black 0.61m-2.44m Clay plastic 2.44m-5.49m Clay red hard sandy 5.49m-7.01m Clay yellow sandy 7.01m-8.23m Sandstone grey water bearing 8.23m-11.28m Shale grey sandy 11.28m-24.08m Shale grey soft sandy 24.08m-25.3m Shale grey hard 25.3m-27.74m Sandstone yellow hard 27.74m-36.58m Sandstone grey 36.58m-38.1m Shale grey soft sandy water supply 38.1m-60.35m Shale sandy	1459.5	South-east
GW011946	0m-2.13m Soil sandy 2.13m-2.74m Basalt	1775.0	North-west
GW011945	0m-0.15m Topsoil black 0.15m-2.9m Soil sandy 2.9m-4.88m Sand gravel water bearing 4.88m-6.34m Sand dry gravel 6.34m-6.64m Basalt	1808.4	North-west
GW011944	0m-1.62m Topsoil black 1.62m-3.05m Soil sandy 3.05m-4.42m Sand gravel water supply 4.42m-6.71m Sand dry gravel 6.71m-7.01m Basalt	1832.1	North

Note: The use of the symbol "-" or "Null" indicates that no records were found.
Source: Groundwater Bores & Lithology

2.2 Groundwater and other Bores

Map 2.2 (2000m)

Groundwater Restricted Use Zones

Name / Number	Address	Site History	Description	Distance (m)	Direction
Not identified	-	-	-	-	-

Source: Groundwater Protection Areas and Groundwater Restricted Use Zones

Groundwater Salinity

Class	Salinity Value	Source	Distance (m)	Direction
No Data	No Data	Sinclair Knight Merz	0.0	Onsite

Source: Groundwater Salinity

Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
GT0001889	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Drilling, Standard Penetration Test (SPT), Push Tubes, Soil Sample Analysis located at Milton Public School : geotechnical investigation	01/01/2003	0.0	384.3	North-west
GT0002638	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Drilling, Standard Penetration Test (SPT), Soil Sample Analysis located at Shoalhaven City water supply augmentation	01/01/1995	0.0	1293.2	West

Note: The use of the symbol "-" or "Null" indicates that no records were found.
Source: Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)

Section 3 Environmental Registers, Licences and Incidents

3.1 Contaminated Land Public Register

Map 3.1 (1000m)

Contaminated Sites

Register Type	Site Name	Address	Description	Details	Distance (m)	Direction
Not identified	-	-	-	-	-	-

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.
Source: Contaminated Land Public Register

Table 3.1.1 Contaminated Land Public Register		
State	**Regulatory Body**	**Information included in this search (by state)**
ACT	EPA (Environment Protection Authority)	Contaminated Land Search Register of Contaminated Sites* (on request)
NSW	EPA (Environment Protection Authority)	Sites Notified as Contaminated Records of Notices
NT	EPA (Environment Protection Authority)	Contaminated Land Audit Pollution Abatement Notice
QLD	DES (Department of Environment and Science)	Contaminated Land Search (Environmental Management and Contaminated Land Registers)* (per lot)
SA	EPA (Environment Protection Authority)	Site Contamination Index Assessment Areas
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises Lutana and Parts of Hobarts Eastern Shore
VIC	EPA (Environment Protection Authority)	Priority Sites Register Pollution Abatement Notice
WA	DWER (Department of Water and Environmental Regulation)	Contaminated Sites Database

This search contains information retrieved from the relevant state authority, agency/department, or government authority that notifies and identifies contaminated land. The list only contains contaminated sites that the regulatory body is aware of or that have been notified by owners or occupiers as contaminated land. The sites are recorded on the register at various stages of the assessment and/or remediation process. If a site is not on the list, it does not necessarily mean the site is not contaminated.

3.2 Licences, Approvals & Assessments

Map 3.2 (1000m)

Licences

Licence Nº	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direct
4022	No longer in force	FORESTRY CORPORATION OF NEW SOUTH WALES	FORESTRY CORPORATION OF NEW SOUTH WALES	WITHIN THE SOUTHERN REGION DEPICTED ON FIGURE 3 , BATEMANS BAY, NSW 2536	Logging operations	Not mapped	Not mapped

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.
**Results that appear as "not mapped" refer to licences that are applied to larger areas and/or without specific definition, such as waterways, forests etc. These are still identified in the search results but will not be shown within the map.*
Source: Licences, Approvals & Assessments

Audits, PRSA

Nº	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direction
1532683	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1532684	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1532686	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1532687	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1533556	Compliance Audit	FORESTRY CORPORATION	SOUTHERN REGION (S.R.) MEANS THE	SOUTHERN REGION (S.R.) MEANS THE	Logging operations	Not mapped	Not mapped

Nº	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direction
		OF NEW SOUTH WALES	STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)			
1539518	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1550763	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1550761	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1568274	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1568275	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped
1583925	Compliance Audit	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	Logging operations	Not mapped	Not mapped

**If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.*
Source: Licences, Approvals & Assessments

Clean Up, Penalty Notices and Orders

N°	Type	Licence holder	Location Name	Premise Address	Details	Dist. (m)*	Direction
1528991	Clean Up Notice	FORESTRY CORPORATION OF NEW SOUTH WALES	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	SOUTHERN REGION (S.R.) MEANS THE STATE FORESTS AND CROWN - TIMBER LANDS (EXCLUDING PLANTATIONS)	s.91 Clean Up Notice	Not mapped	Not mapped

**If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.*
Source: Licences, Approvals & Assessments

Table 3.2.1 Licences, Approvals & Assessments		
State	**Regulatory Body**	**Information included in this search (by state)**
ACT	EPA (Environment Protection Authority)	Environment Protection Authorisation Search Environment Protection Agreement Search
NSW	EPA (Environment Protection Authority)	POEO Public Register (Environment Protection licences, Applications, Notices, Audits or Pollution studies and Reduction Programs)
NT	EPA (Environment Protection Authority)	Environment Protection Licences and Approvals
QLD	DES (Department of Environment and Science)	Environmental Authorities
SA	EPA (Environment Protection Authority)	Licences or Authorisations (Licences, Exemptions and Works Approvals) Environment Protection Orders (EPO) and Clean Up Orders (CUO)
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises
VIC	EPA (Environment Protection Authority)	Permissions Register (Operating Licence, Permit and Registration) Audit Reports
WA	DWER (Department of Water and Environmental Regulation)	Licences and Works Approvals

3.3a Sites Regulated by other Jurisdictional Body

Map 3.3a (2000m)

Contaminated Legacy Areas

Site Name	Description	Distance (m)	Direction
Not identified	-	-	-

Includes known contaminated areas such as James Hardies Asbestos waste legacy areas, Pasminco Smelter and Uranium processing site.
Source: Contaminated Legacy Areas

Defence, Military Sites and UXO Areas

Site name	Type*	Details	Distance (m)	Direction
Not identified	-	-	-	-

**RCIP (Regional Contamination Investigation Program). UXO (Unexploded Ordnance Areas) .*
Source: Defence, Military Sites, and UXO Areas

Former Gasworks Sites

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

Source: Former Gasworks Sites

PFAS Sites

Site name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-

Source: PFAS Sites

3.3b Other Potential Hazard Sources

Map 3.3b (500m)

Mines and Quarries (current and historical)

Site name	Description	Status	Distance (m)	Direction
Not identified	-	-	-	-

Source: Mines and Quarries

Landfills (current and historical)

Site name	Description	Status	Distance (m)	Direction
Not identified	-	-	-	-

National Pollutant Inventory (NPI)

Facility name	Address	Primary ANZSIC Class	Latest report	Distance (m)	Direction
Not identified	-	-	-	-	-

Source: Contaminated Legacy Areas

Section 4 Potentially Contaminated Areas

4.1 Potentially Contaminating Activities

Map 4.1 (200m)

Industries, businesses and activities that may cause contamination

Map ID	Site name	Category	Description	Address	Status*	Dist. (m)	Direction
4	Milton Ulladulla Hospital	Manufacturing and Industrial Facilities	General hospital	106 Princes Hwy, Milton NSW 2538	Current	0.0	Onsite
2	Southern IML Pathology	Manufacturing and Industrial Facilities	Pathology Testing Laboratories	143 Princes Hwy MILTON 2538 NSW	Current	20.4	South
3	Signtext & PRINT	Manufacturing and Industrial Facilities	Signwriters	Unit 2/143 Princes Hwy, Milton NSW 2538	Current	20.4	South
1	Caltex Milton	Petrol Stations and Fuel Terminals	Petrol Station	90 Princes Hwy, Milton	Current	103.5	West

**Status: Information is current as when this report was created.*
The operational status of the business is determined using the available data sources and does not indicate real-time conditions at the site.
Current: business is operating on the day this report was issued.
Former: business that have been closed or discontinued within 2 years from the date of this report.
Source: Potentially Contaminated Areas, Activities (PCA)

Categories included in this search. (Notifiable activities)		
Abattoirs	Explosives and Dangerous Goods	Paint Industries
Abrasive Blasting	Extractive Industries	Petrol Stations
Agriculture / Horticulture	Fire and Rescue	Pharmaceuticals
Airports	Food Manufacturing	Port and Marina Operations
Asbestos	Foundry, Smelting or Refining	Power Plants
Asphalt or Bitumen	Fuel Terminals & Depots	Printing and Photography
Batteries	Glass, Ceramics and Plastic	Rail Industry and Associated Activities
Breweries / Distilleries	Gun, Pistol or Rifle Ranges	Rubber and Tyre
Cement, Concrete or Lime	Hospitals and Research Facilities	Storage Tanks

Categories included in this search. (Notifiable activities)		
Cemeteries	Landfill Sites	Substations and Switching Stations
Chemicals	Livestock Dips	Textiles and Tannery
Coal Yards	Mechanical and Automotive	Timber, Pulp and Paper Works
Depots and Storage Yards	Metal Fabrication and Treatments	Waste and Recycling Facilities
Dry Cleaners	Oil and Gas	Wastewater Treatment Facilities
Electrical or Electrical Components	Other Infrastructure Facilities	-

Industries, businesses, and activities identified as having an increased likelihood of causing contamination.

The industries and business activities listed above have been identified as having an increased likelihood of causing contamination and have been identified through published state and national guidelines and regulations. These industries are noted due to their potential to store or use substances that could cause contamination to the surrounding environment if not managed appropriately. The identification of these activities does not imply the presence of contamination at the site.

The records identified are based on the reported business activity and have not been assessed based on any current or previous site inspection. Please note that records not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.

4.2 Historical Business Directories

Not mapped

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
1970	Contractors - General	Anderson E H	100 Princes Highway,Milton,NSW	Address	6.9	West
2005	Surveyors--Land	Phillip Brown Registered Surveyor	100 Princes Hwy,MILTON,NSW,2538	Address	6.9	West
2005	Surveyors--Engineering & Mining; Surveyors--Land	Brown Phillip	100 Princes Hwy,MILTON,NSW,2538	Address	6.9	West
2015	Bakeries	Vince Fresh Bakery	116 Princes Hwy Ulladulla NSW 2539	Address	20.1	East
2005	Tree Felling & Stump Removal	We Care Tree Care	39 Gordon St,MILTON,NSW,2538	Address	43.5	North-east
2005	Electrical Contractors	Rooney Steve	43 Gordon St,MILTON,NSW,2538	Address	44.0	East
2005	Electrical Contractors	S Rooney	43 Gordon St,MILTON,NSW,2538	Address	44.0	East
2005	Television Antenna Services; Television Repairs, Service & Installation; Computer Equipment--Hardware; Computer Equipment--Repairs, Service & Upgrades	Ralph Woods Electronics	4 Graham St,MILTON,NSW,2538	Address	46.8	North
1965	Motor Panel Beaters	ARJAN MOTORS	131-135,Bombay,NSW	Address	47.5	South
1965	Motor Panel Beaters	NIXON R J (BOB)	131-135,Bombay,NSW	Address	47.5	South
1965	Towing Stations	ARJAN MOTORS	131-135,Bombay,NSW	Address	47.5	South
1980	Motor Service Stations & Garages	Matthews Service Station	127 Princes Highway,Milton,NSW	Address	52.0	South
2005	Saddlers & Riding Outfitters	Milton Saddlery	Shop 3/ 127 Princes Hwy,MILTON,NSW,2538	Address	52.0	South
1965	Plumbers & Gasfitters	Conti&Hunt	125,Milton,NSW	Address	57.5	South-west
1980	Tanks & Tank Equipment	Milton Concrete Tanks	94 Princes Highway, Milton,Ulladulla,NSW	Address	57.6	West
1980	Concrete products	Milton Concrete Tanks	94 Princes Highway, Milton,Ulladulla,NSW	Address	57.6	West
1980	Pumps - Mfrs &/or Merchants	Milton Concrete Tanks	94 Princes Highway, Milton,Ulladulla,NSW	Address	57.6	West
1965	Motor Cars & Trucks—Used	Consolidated Motors Pty Ltd	123,PrincesHghwy,NSW	Address	72.2	South-west
1980	Bakers	Milton-Ulladulla Bakery	92 Princes Highway,Milton,NSW	Address	74.8	West
1970	Contractors - General	Hughes E J	122 Princes Highway,Milton,NSW	Address	89.0	East
1980	Frozen Foods - Mfrs. &/or W'salers	Roberts Food & Beverage	149 Princes Highway, Ulladulla,Milton,NSW	Address	100.3	South-east

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
		Distributors (South Coast) Pty Ltd				
1980	Tyre's Retail	Milton Tyre Service	90 Princes Highway, Milton,Ulladulla,NSW	Address	115.9	West
2005	Motor Engineers & Repairers	Milton Auto Centre	90 Princes Hwy,MILTON,NSW,2538	Address	115.9	West
2005	Motor Service Stations & Garages	Milton Motors	90 Princes Hwy,MILTON,NSW,2538	Address	115.9	West
2010	Video & DVD Production & Duplication Service	Top Video Milton	90 Princes Hwy MILTON 2538 NSW	Address	115.9	West
2010	Petrol Stations & Garages	Milton Petrol	90 Princes Hwy MILTON 2538 NSW	Address	115.9	West
2015	Petrol Stations & Garages	Milton Petrol	90 Princes Hwy Milton NSW 2538	Address	115.9	West
2015	Engineers - Motor & Repairers	Milton Auto Centre Warrick Faust	90 Princes Hwy Milton NSW 2538	Address	115.9	West
1965	Plumbers & Gasfitters	Tuppini R	23,Wolseley,NSW	Address	117.1	South
1965	Concrete Form Work Ties & Accessories	Modigliani G	19,Wolseley,NSW	Address	130.9	South
2005	Electrical Contractors	Gilkes Electrical & Communications	E/ 153a Princes Hwy,MILTON,NSW,2538	Address	134.6	South-east
2005	Roof Construction; Roof Repairers & Cleaners; Guttering & Spouting	Milton Ulladulla Metal Roofing Pty Ltd	34 Gordon St,MILTON,NSW,2538	Address	144.9	North-east
2015	Scrapbooking & Layouts	Ann Pomfret-Creative Memories Consultant	48 Gordon St Milton NSW 2538	Address	147.1	South-east
2015	Gas Supply - Lpg	Kleenheat	48 Gordon St Milton NSW 2538	Address	147.1	South-east
1980	Gift Shops	McCormack Furniture Mart	80 Princes Highway, Milton,Ulladulla,NSW	Address	169.7	West
1980	Gift Shops	Milton Gift Shop	80 Princes Highway,Milton,NSW	Address	169.7	West
1980	Lighting	McCormack Furniture Mart	80 Princes Highway, Milton,Ulladulla,NSW	Address	169.7	West
1965	Builders & Contractors	KIRK J B & SON PTY LTD	105,Milton,NSW	Address	181.7	West
1965	Hospitals—Private	Waddell House	91,Milton,NSW	Address	182.2	South
1965	Machinery—Mining & Quarrying	Esco Industrial Equipment	149,Milton,NSW	Address	182.2	South
1965	Plastics	A.C.I. Plastics Pty Ltd	40,Milton,NSW	Address	182.2	South
1965	Taxis	Balmain Hire Car Service	32,Milton,NSW	Address	182.2	South
1965	Oil Drilling Equipment & Supplies	PETERSHAM TRANSPORT CO PTY LTD	28-30,Milton North,NSW	Address	182.2	South
1965	Contractors	Kirk J B&Son Pty Ltd	48,Milton,NSW	Address	182.2	South

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
1965	Carriers—Light	Martin S F	85b,Milton,NSW	Address	182.2	South
1965	Chemical Suppliers	Swift&Co (Trading) Pty Ltd	149,Milton,NSW	Address	182.2	South
1965	Air Compressors &/or Equipment	MARINE & INDUSTRIAL POWER CO PTY LTD	149,Milton,NSW	Address	182.2	South
1965	Builders & Contractors	KIRK J B & SON PTY LTD	48,Milton,NSW	Address	182.2	South
1970	Wine & Spirit Mfrs.	Wynvale Wines	149 Milton North Street,Ashford,NSW	Address	182.2	South
1970	Wine & Spirit Mfrs.	Swift & Moore Pty Ltd	149 Milton North Street,Ashford,NSW	Address	182.2	South
2005	Excavating & Earth Moving Equipment	G & S Earthmoving Machinery Repairs Pty Ltd	116b Kingsmon Rd,MILTON,NSW,2538	Address	182.2	South
2015	Leather Goods & Accessories - Retail	Country Leather	Settlement Arcade 97 Princes Hwy Milton NSW 2538	Address	196.7	West
1965	Builders & Contractors	Cazey R L&Co	24,Thomas,NSW	Address	197.2	North-west
1965	Plumbers & Gasfitters	Gailey W G	MilsonLa,NSW	Street		South
1970	Concrete - Ready-Mixed	Specified Concrete Pty Ltd	Wilford Lane,Milton,NSW	Street		South
1970	Ham & Bacon Curers	Canadian Bacon Industries Pty Ltd	Milton Lane, State Abattoirs,Homebush,NSW	Street		South
1970	Farmers	Beynon J G T	Danesbank Street,Milton	Street		South
1970	Farmers	Kendall K W	Kendalldale Street,Milton	Street		South
1970	Farmers	Suffolk J	Applegarth Street,Milton	Street		South
1970	Farmers	Fredericks L A & L O	Wooloomolan Street,Milton	Street		South
1970	Farmers	Johnston P C	Whoppindally Street,Milton	Street		South
1970	Farmers	Leaney N G	The Hut,Milton	Street		South
1970	Farmers	Ryan J	Woodlands Street,Milton	Street		South
1970	Farmers	Wilford G R & J R	Riverview Street,Milton	Street		South
1980	Concrete - Ready-Mixed	BMG Specified Concrete	Wilford Lane,Milton,NSW	Street		South
1980	Concrete - Ready-Mixed	BMG Specified Concrete	Wilford Lane,Milton-Ulladulla,NSW	Street		South
1980	Concrete Contractors	Cornall Sally	Wilford Lane, Milton,Ulladulla,NSW	Street		South
1980	Farmers	Johnston P C	Whoppindally, Milton,Yatte Yattah,NSW	Street		South
1980	Batteries - Storage	Marshall Batteries Pty Ltd	Milton Motor: 90 Princes Highway,Ulladulla,NSW	Place		West
1980	Farmers	Kendall K W	Kendall Dale, Milton,Yatte Yattah,NSW	Place		South
1980	Leather & Grindery Supplies	Country Leather	Settlement Arcade, Milton,Ulladulla,NSW	Place		South

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
1980	Nurserymen - Retail	Cockatoo Garden Centre	Settlement Arcade, Milton,Ulladulla,NSW	Place		South
2010	Leather Goods & Accessories - Retail	Country Leather	Settlement Arcade MILTON 2538 NSW	Place		West
1970	Farmers	Arnold J A C	Milton,NSW	Suburb		South
2005	Lawn & Turf Supplies	Coastline Turf Ulladulla	MILTON,NSW,2538	Suburb		South
2005	Gardeners; Lawn Cutting & Maintenance	Robben's Mowing and Gardening	MILTON,NSW,2538	Suburb		South
2005	Fencing Contractors	Shea M&M	MILTON,NSW,2538	Suburb		South
2005	Slashing Contractors; Fencing Contractors	Southern Rural Contracting	MILTON,NSW,2538	Suburb		South
2005	Paving--Asphalt & Bitumen; Excavating & Earth Moving Equipment; Bitumen Spraying	A & L Lewis	MILTON,NSW,2538	Suburb		South
2005	Gas Suppliers	Barkwith Stephen & Jan	MILTON,NSW,2538	Suburb		South
2005	Pest Control; Building Inspection Services	Brazon Pest Control & Prevention	MILTON,NSW,2538	Suburb		South
2005	Fencing Materials	Milton Ulladulla Treated Pine	MILTON,NSW,2538	Suburb		South

Land Insight uses a number of address geocoding techniques and has characterised them based on completeness (match rates) and positional accuracy. When a historical street address is incomplete or a match is not found, a record identified as being in the surrounding area will be included for reference and the accuracy of the data is approximate only. An explanation of the positional accuracy records is defined in the table below.

Source: Historical Business Directories

Historical data positional accuracy and georeferencing results explanation		
Positional accuracy	**Georeferenced**	**Description**
Address	Located to the address level	*When street address and names fully match.*
Street	Located to the street centroid	*When street names match but no exact address was found. Location is approximate.*
Place	Located to the structure, building or complex	*When building, residential complex or structure name match but no exact address was found. Location is approximate.*
Suburb	Located to the suburb area	*When suburb name match but no exact address was found. Location is approximate.*

The data used in this section was extracted from range of historical commercial trade directories and business listings. The business addresses were geocoded using historical information and the accuracy of the data may vary due to changes to the physical address at a given locality over time or the quality of the original records. From 2005, the historical business records in this section are considered more accurate as information was extracted from digital directories with geographic coordinate location information available. On this basis, reliance on the historic listing data should be considered when assessing the risk of contamination from an activity at the site. The presence of a business

listing does not definitively confirm the actual activity that has occurred at the site. For more information on how these records were geocoded and the methodology used by Land Insight, contact us at info@landinsight.co.

Historical business directory listings have been filtered to match activities and industries identified as PCAs in Section 4.1. Please note that any record not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.

Section 5 Natural Hazards

5.1 Fire Hazard

Map 5.1 (500m)

Bushfire Prone Areas

Category	Type	Details	Distance (m)	Direction
Bushfire Prone Area	Vegetation Buffer	Bushfire prone vegetation buffers are created based on vegetation categories, with buffering distance being 100 metres for vegetation category 1 and 30 metres for vegetation category 2 and 3.	77.2	North
Bushfire Prone Area	Vegetation Category 3	This vegetation category indicates medium bushfire risk vegetation (higher than category 2, and the excluded areas, but lower than Category 1). Vegetation category consists of grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands.	107.2	North
Bushfire Prone Area	Vegetation Category 2	This vegetation category indicate lower bushfire risk than Category 1 and Category 3 but higher than the excluded areas. Vegetation category consists of rainforests and lower risk vegetation parcels.	350.9	North

Source: Fire Hazards

Bushfire History

Type	Season	Details	Distance (m)	Direction
Not identified	-	-	-	-

Source: Fire Hazards

5.2 Flood Hazard

Map 5.2 (500m)

Flood Planning Area

Type	Name	Details	Distance (m)	Direction
Not identified	-	-	-	-

Source: Flood Hazard

Other Flood Studies

Type	Name	Details	Distance (m)	Direction
Not identified	-	-	-	-

Source: Flood Hazard

Flood History

Type	Season	Details	Distance (m)	Direction
Not identified	-	-	-	-

The list provided is not comprehensive and does not consider all flood history. It only includes the information that is currently available.
Source: Flood Hazard

5.3 Erosion Hazard

Map 5.3 (500m)

Erosion Hazard

Category	Type	Details	Distance (m)	Direction
Landslip Erosion Risk	Very slight to negligible limitations	Very Low	0.0	Onsite
Water Erosion Risk	Moderate limitations	Moderate	0.0	Onsite
	Very severe limitations	Very High	150.4	North
Wind Erosion Risk	Slight but significant limitations	Low	0.0	Onsite
	Very slight to negligible limitations	Very Low	150.4	North

Source: Erosion Hazard

Land Insight

The Commons
388 George Street
Sydney NSW 2000 Australia
info@landinsight.co
www.landinsight.co

Product Guide

Due Diligence Insight Report

28 May 2025

Data Sources

NLUA - The Land Insight National Land Use Atlas (NLUA)

Land Insights' NLUA is a unique, proprietary database, meticulously curated from over a decade's worth of research and hundreds of thousands of diverse information sources. NLUA provides a comprehensive overview of land usage and potential hazards, drawing from a wide array of reliable sources. These include verified Council Records, Historic Zoning Maps, Topographic and Parish Maps, and technically published reports.

NLUA integrates thoroughly researched information extracted from published reports, publications, and technical studies. It also incorporates Land Insight's proprietary machine learning process, which identifies land anomalies, patterns, and changes through aerial imagery interpretations.

Leveraging advanced technologies, NLUA verifies the provenance, authenticity, and precision of its data. This database undergoes rigorous validation procedures carried out by scientists, quality assurance teams, and technical experts. This ensures its accuracy and reliability before publication. For more information on methodologies and further inquiries, please contact the Land Insight teams at support@landinsight.co.

Section 1 - Property Setting

Sensitive Receptors

National – Google. Nearmap. @ Land Insight National Land Use Atlas (NLUA). Points of Interest - © OpenStreetMap. Australian Business Datalist, Australian Schools Database - @ Australian Business Datalist ABDL (with permission). Cadastre. National - The digital cadastral boundaries and their legal identifiers have been derived from the relevant bodies from each Australian State and Territory jurisdiction combined by Land Insight & Resources.

Topographic data and Contours. National - The digital contours data and elevation information have been derived from the relevant bodies from each Australian State and Territory jurisdiction combined by Land Insight & Resources. National - Catchments, Streams, Aquifers, Storages, Wetlands and Man-made Structures that make up the hydrological system - © Geoscience Australia. Parks and National and State Forest Data © Department of Agriculture, Fisheries and Forestry.

Planning Controls and Overlays

Zoning, Planning Overlays and Other Planning Information

The digital planning information have been derived from the relevant bodies from each Australian State and Territory jurisdiction combined by Land Insight & Resources.

Mine subsidence districts - © DFSI Subsidence Advisory NSW. ACT - ACT Territory Plan and Land Use Zones and ovleryas © ACT Government Environment, Planning and Sustainable Development Directorate – Environment. NSW – NSW Environmental Planning Instruments, Land Use Zoning, Local Environmental Plan - © State Government of NSW and NSW Department of Planning, Housing, and Infrastructure. NT - NT Planning Scheme, Land Use Zones © NT Government Department of Infrastructure, Planning and Logistics. QLD - Land use mapping series, Land Use in QLD @ QLD Environment, Science, and Innovation. QLD zoning information, various LGA Councils. SA - Land Development Zones, Planning and Design Code Zones and Overlays – © SA Government Department for Trade and Investment. TAS - Tasmania Planning Scheme, Zoning and Overlays, theLIST ©State of Tasmania. @ Department of Natural Resources and Environment Tasmania. VIC - Tasmania Planning Scheme, Zoning and Overlays, theLIST ©State of Tasmania. @ Department of Natural Resources and Environment Tasmania. WA - Local Planning Scheme and Region Scheme, Zones, and Reserves, © WA Government Department of Planning, Lands and Heritage.

Heritage

Commonwealth Heritage List, National Heritage List and World Heritage Area

AUS - World, Commonwealth, and National Heritage Areas – World Heritage List, UNESCO. Australia's World Heritage List, © Australian Government Department of Sustainability, Environment, Water, Population and Communities. @ Department of Climate Change, Energy, the Environment and Water.

State and Local Heritage Registers

ACT - ACT Heritage Sites © ACT Government Environment, Planning and Sustainable Development Directorate – Environment. NSW - NSW EPI Heritage, NSW Heritage State Curtilage @ NSW Department of Premier and Cabinet, Heritage Council of NSW. NT - Heritage Register in NT, NT Town Planning Zones Heritage - © NT Government of Australia through Department of Tourism, Sport, and Culture. QLD - Queensland Heritage register boundaries, Queensland Local Heritage. © QLD Government Department of Environment and Science. Data from various local councils compiled by Land Insight Research Team (LIRT). SA - SA Heritage Places, SA Conservation State Hertiage Areas, SA Conservation State Heritage Areas, Aboriginal Heritage in SA @Governemtn of South Australia © SA Government Department for Trade and Investment, Department for Environment and Water. TAS - Heritage Tasmania Features theLIST ©State of Tasmania. VIC - VIC Heritage Inventory, VIC Sensitivity Public, VIC Heritage Register © VIC Government Department of Energy, Environment and Climate Action; Department of Premier and Cabinet. WA - WA Heritage Areas, WA Heritage Council Local Heritage Survey, WA Heritage Council State Heritage Survey, WA Aboriginal Heritage Places © WA Government Department of Planning, Lands and Heritage.

Soil and Land Use Information

Soil landscape

Soil Mapping, Information & Landscape - Digital Atlas of Australian Soils, Bureau of Rural Sciences (BRS); Commonwealth Scientific and Industrial Research Organisation (CSIRO) Australian Soil Resource Information System (ASRIS). CSIRO (2024): Australian Soil Resource Information System Website. v1. CSIRO. Data Collection. https://doi.org/10.25919/pdct-9a97

Australian Soil Resource Information System - Australian Soil Classification @ Geoscience Australia, ASRIS Australian Soil Classification @ CSIRO Soil and Landscape Information of Australia @ CSIRO. Australian national map layers, Atlas of Australian Soils - @ ABARES Australian Bureau of Agricultural and Resource Economics and Sciences.

ACT Soil Landscapes, Soil Landscapes of the Canberra 1:100,000 © Australian Capital Territory Government, @ State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. NSW Great Soil Group (GSG) Soil Type, Australian Soil Classification (ASC) soil type, Strategic Regional Land Use and Soil Profiles, 1:100 000 Soil Landscape Series, 1:250 000 Soil Landscape Series © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. NT Northern Territory Land Systems compilation 1:1 000 000, 1:250 000 @ Environment, Parks, and Water Security. QLD Land systems series, Soil Series and Soil and land resource information © The State of Queensland. SA Land Systems & Soil Types, Soils of South Australia @ Department for Environment and Water. TAS Soil Maps of Tasmania 1:100 000 various regions. Dominant Soil Order TAS @ Department of Natural Resources and Environment Tasmania. VIC Victorian Soil type mapping, VIC Land units (various regions), Victorian Land Use Information System, Land Systems of Victoria at 1:100 000 and 1:250 000 @ Department of Energy, Environment and Climate Action. WA Soil Landscape Mapping - Best Available, Soil Landscape Mapping – Systems, WA Soil Group @ Department of Primary Industries and Regional Development.

Soil salinity

ACT - Hydrogeological Landscapes, Soil Landscapes of the Australian Capital Territory @ actmapi ACT gov. NSW – Hydrogeological landscapes mapping, Sydney Metropolitan Western Study Area Hydrogeological Landscapes; New South Wales – Dryland Salinity Assessment 2000 – Assessment of Dryland salinity extent 2020 - © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water; Australian Bureau of Agricultural and Resource Economics and Sciences. NT - Land Suitability Guidelines @ Department of Infrastructure, Planning and Logistics NT. QLD - Salinity in Queensland @ Environment, land, and water QLD. SA - Land salinity, Dryland salinity, Watertable and non-watertable @ Department for Environment and water SA. TAS - Vulnerable Soils: Salinity Hazard @ thelist Land Tasmania. VIC - Victorian Dryland Salinity Assessment 2000 - Australian Bureau of Agricultural and Resource Economics and Sciences. WA - Dryland salinity in Western Australia - © Department of Primary Industries and Regional Development's Agriculture and Food.

Acid Sulfate Soils

National, State and Local Acid Sulfate Soils Registers

AUS - Acid sulfate Soils - Atlas of Australian Acid Sulphate Soils @ CSIRO (2024): Australian Soil Resource Information System Website. v1. CSIRO. ACT - Environmental Planning Instrument (Acid Sulfate Soils) - © State Government of NSW and NSW Department of Planning, Housing, and Infrastructure. NSW - Environmental Planning Instrument (Acid Sulfate Soils); Land and Soil Capability Mapping for NSW - © State Government of NSW and NSW Department of Planning, Housing, and Infrastructure; © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water. NT – Acid Sulfate Soils of the Darwin Region; Northern Territory Land Systems (compilation of north_250 and south_1M) - © Northern Territory Government of Australia Environment, Parks, and Water Security. QLD – Acid sulfate soils series - © The State of Queensland Environment and Science. SA – Acid Sulfate Soil Potential - @ Government of South Australia Department for Environment and Water. TAS – Marine Acid Sulfate Soils; Inland Acid Sulfate Soils; Coastal Acid Sulfate Soils; Acid Sulfate Soils - Resource Management and Conservation. VIC - Coastal Acid Sulphate Soils - Department of Jobs, Skills, Industry and Regions. WA - Acid Sulfate Soil Risk Map 100K; Soil landscape land quality - Subsurface Acidification Risk - @ Department of Water and Environmental Regulation; Department of Primary Industries and Regional Development.

Geology and Topography

Naturally Occurring Asbestos NOA

Naturally Occurring Asbestos in NSW © State of New South Wales and Department of Planning and Environment; WA Management of Asbestos In Mining Operations Department of Industry and Resources; SA Carbonate-hosted asbestos occurrences in South Australia: review of geology and implications for mesothelioma [Hendrickx, M.]; Mapping of naturally occurring asbestos in NSW [NSW Trade & Investment, Division of Resources & Energy]

Geology

ACT - New South Wales Seamless Geology dataset (latest version 2.3), various geology data sources 1:25K to 1:100K - © Department of Regional NSW. NSW - New South Wales Seamless Geology dataset (latest version 2.3) - © Department of Regional NSW. NT - Geological digital data 1:100 000 sheet - © Commonwealth of Australia (Geoscience Australia). QLD - Queensland geology detailed surface geology 1:100K and Queensland geology state surface geology 1:2M - © State of Queensland (Department of Resources). SA - 1:100K Geology (surface geology) - © SA Government Department of Energy and Mining, Customer Services. TAS - 1:25K and 1:250K Geology Data and Maps - © TAS Government Department of Infrastructure, Energy, and Resources (Mineral Resources Tasmania). VIC – Geological units represented as two dimensional polygons (1:50,000), and Geological units represented as two dimensional polygons (1:250,000) - © VIC Government Department of Jobs, Skills, Industry and Regions. WA - 1:50K Geological series map, 1:100K Geological series map, and 1:500K State interpreted bedrock geology - © WA Government Department of Mines, Industry Regulation and Safety.

Section 2 - Hydrogeology

GDE & Hydrogeology Constraints

Groundwater Aquifers

Groundwater Aquifers - The National Hydrogeological Inventory, Commonwealth of Australia (Geoscience Australia). Australian Hydrological Geospatial Fabric @ Department of Climate Change, Energy, the Environment and Water, National Aquifer Network © Commonwealth of Australia (Bureau of Meteorology)

Groundwater Protection Areas and Groundwater Restricted Use Zones

Groundwater Protection Areas – © State of New South Wales and Department of Planning and Environment, NT Environment, Parks and Water Security, QLD Department of Resources, SA Environment Protection Authority (EPA), TAS TasWater, VIC Department of Environment, Land, Water & Planning; WA Department of Water and Environmental Regulation. Groundwater Licences - The Perth Groundwater Atlas and Department of Water (DoW) database © State of Western Australia. NSW - Groundwater Restricted Use Zones: EPI Groundwater Vulnerability, Botany Groundwater Management Zone, Williamtown Management Area, UPSS Environmentally Sensitive Zone, EPI Drinking Water Catchments – EPA NSW; NSW Department of Planning, Industry and Environment. NSW Temporary Water Restrictions Order Botany Sands groundwater - @ The NSW Department of Industry—Lands & Water. NT - Groundwater Restricted Use Zones: NT Water Protection Areas - Department of Environment, Parks, and Water Security. QLD - Groundwater Restricted Use Zones: Water Licences, Groundwater Management Areas, Surface Water Management Areas, Water Plan Catchments - Department of Resources. SA - Groundwater Restricted Use Zones: EPA Groundwater Prohibition Area – EPA SA. TAS - Groundwater Restricted Use Zones: Drinking Catchments, Water Management Plan Areas, Water Districts. VIC - Groundwater Restricted Use Zones: GMA, Groundwater Resources, Water Supply Protection Areas, Water Asset Database, Groundwater Catchments – © EPA Victoria. WA -Groundwater Restricted Use Zones: Gnangara Groundwater Protection, Jandakot Groundwater Protection, Groundwater Areas, PDWSA, Water Licences – Department of Water and Environmental Regulation.

Wetlands

Ramsar Wetlands of Australia - Directory of Important Wetlands in Australia (DIWA) – DCCEEW Department of Climate Change, Energy, the Environment and Water. ACT - Wetland Mapping - © State of New South Wales and Department of Planning and Environment. Important Wetlands - © Australian Capital Territory. NSW - Wetlands, Ramsar Sites, and various sources – © State of New South Wales and Department of Planning and Environment. NSW Environmental Planning Instruments (Wetlands, Coastal Wetlands), © State Government of NSW and NSW Department of Planning, Housing, and Infrastructure NT - Wetlands and Ramsar Sites - @ Department of Environment, Parks, and Water Security. QLD - Local Significant Wetlands and Ramsar Sites - @ Department of Environment and Science. SA - Ramsar Wetlands - @ Department for Environment and Water. TAS - Ramsar Wetlands - @ Land Tasmania. VIC - Victoria Wetlands and Ramsar Sites, @ Department of Energy, Environment and Climate Action. WA - Geomorphic Wetlands (various), Consanguineous Wetlands Suites, Ramsar Sites, @ Department of Biodiversity, Conservation and Attractions.

Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDE) – Terrestrial (subsurface) and Aquatic (surface) - © Commonwealth of Australia (Bureau of Meteorology).

Groundwater Bores & Lithology details

Groundwater bores and lithology - National Groundwater Information System (NGIS) Dataset. - © Australian Government Bureau of Meteorology. © Water NSW. Groundwater Bores – © Australian Capital Territory. VIC Groundwater Sites, Domestic and stock groundwater bores @ DELWP. WA GW Bores, @ Department of Agriculture Resource Management. SA WaterConnect @ State of South Australia.

Groundwater Salinity

AUS - Groundwater Salinity © Commonwealth of Australia, Bureau of Meteorology. Groundwater Salinity - ACT - Canberra Hydrogeological Landscape, Hydrogeological Landscape Reports, Salinity, ACTmapi @ ACT gov. NSW – Salinity locations and mapping, Hydrogeological landscapes, @ NSW Environment and Heritage. NT - Dryland Salinity Hazard of the Northern Territory, @ Environment, Parks, and Water Security NT. QLD - Salinity in Queensland, @ QLD gov. SA - Annual ground water salinity sampling, @ Landscape South Australia. TAS - Groundwater Salinity - © Department of Natural Resources and Environment Tasmania. VIC - Groundwater Salinity - © State Government of Victoria. Groundwater Salinity - Department of Water and Environmental Regulation. WA – Salinity & Dryland salinity in Western Australia, @ Department of Agriculture and Food WA.

Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)

Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes) – NSW Planning & Environment (Resources & Energy); Department of Energy, Environment and Climate Action. Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes) – © The State of Queensland, © Commonwealth of Australia (Geoscience Australia), Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes, Drillholes within South Australia, Mineral Drillholes) - @ SA Government Department for Environment and Water; Department for Energy and Mining. Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes) - Department of Water and Environmental Regulation, © Government of Western Australia Department of Mines, Industry Regulation and Safety. Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes), various sources @ Land Insight National Land Use Atlas (NLUA).

Section 3 - Environmental Registers, Licences and Incidents

Contaminated Land Public Register

ACT - Register of Contaminated Sites, Contaminated Land Search (per request) - © Australian Capital Territory, Environment Protection Authority. NSW - Sites Notified as Contaminated, Records of Notices - © State of NSW and the NSW Environment Protection Authority. NT - Contaminated Land Audit, Pollution Abatement Notice - Northern Territory Environment Protection Authority. QLD - Contaminated Land Search (Environmental Management and Contaminated Land Registers – per lot) - © The State of Queensland (Department of Environment, Science, and Innovation). SA - Site Contamination Index, Assessment Areas - © Government of South Australia Environment Protection Authority. TAS - Regulated Sites and Premises, Lutana, and Parts of Hobarts Eastern Shore - © The Crown of Tasmania, Environment Protection Authority. VIC - Priority Sites Register, Pollution Abatement Notice - © EPA Victoria. WA - Contaminated Sites Database - © Government of Western Australia, Department of Water and Environmental Regulation.

Licences, Approvals, & Assessments

ACT - Environment Protection Authorisation Search, Environment Protection Agreement Search - © Australian Capital Territory, Environment Protection Authority. NSW - POEO Public Register - © 2023 State of NSW and the NSW Environment Protection Authority. NT - Environment Protection Licences - © Northern Territory Environment Protection Authority. QLD - Environmental Authorities - © The State of Queensland (Department of Environment, Science, and Innovation). SA - Licences or Authorisations, Environment Protection Orders (EPO), Clean-Up Orders (CUO), Assessment Areas - © Government of South Australia Environment Protection Authority. TAS - Regulated Premises - © The Crown of Tasmania, Environment Protection Authority. VIC - Permissions Register, Audit Reports - © EPA Victoria. WA - Licences and Works Approvals - © Government of Western Australia, Department of Water and Environmental Regulation.

Sites Regulated by Other Jurisdictional Body

Contaminated Legacy Areas

Contaminated Legacy Areas mapped by Land Insight Research team @ Land Insight National Land Use Atlas (NLUA). James Hardie Asbestos Waste Contamination Legacy @ The Australian Asbestos Network, Loose-fill Asbestos register @NSW Department of Climate Change & Water. Loose Fill Asbestos @ ACT Government. Asbestos Register @NT Government. Asbestos Register @ QLD Government. Asbestos Safework @ Government of South Australia. Asbestos Safety WorkSafe @Tasmania Government. Asbestos in Victoria @State Government of Victoria. Asbestos – contaminated sites @ Government of Western Australia Department of Health. National Pollutant Inventory - © Commonwealth of Australia, Department of Agriculture, Water, and the Environment. Parramatta River Catchment Land Use Areas - Compiled by Land Insight derived from Parramatta River Estuary Processes Study (2010); and @ Land Insight National Land Use Atlas (NLUA).

Mines and Quarries (current locations, derelict and abandoned mines and quarries, mine shaft)

Current and Historical location of mines and quarries, derelict mine locations mapped by Land Insight Research team @ Land Insight National Land Use Atlas (NLUA). Australia's abandoned mines: rehabilitated @Australian Geographic. List of mines, List of open-pit mines @ Wikipedia. Goldfields places & Maps- National Library of Australia and State Libraries. A Geospatial Database for Effective Mine Rehabilitation in Australia – Monash University, various authors. Inventory of abandoned mines in Australia @ Australian Government AusIndustry. National Heritage Places - Coal Mines Historic Site @Department of Climate Change, Energy, the Environment and Water. Legacy Mines Program © State of New South Wales through Regional NSW. Map of NSW Mines @NSW Minerals Council. Legacy Mines @ Northern Territory Government. Abandoned mine remediation projects - @ The State of Queensland Government. Map of abandoned mines in Queensland. Queensland's quarry operations @ QLD Government Department of Resources. South Australian Mining History @ Mining Heritage, Former Mines, SARIG @ Government of South Australia @ EPA SA. Mineral Resources Tasmania @ Department of State Growth Mineral Resources Tasmania, Abandoned Mines Rehabilitation in Tasmania @ Department of Infrastructure, Energy and Resources. Tasmania Goldfields dataset. Mineral Occurrences Data @ Tasmania Government. Rehabilitating Mines @ Copyright Victorian Auditor-General's Office, @ Mining Legacies. Historical Mining Activities @ VIC Department of Jobs, Skills, Industry and Regions. Heritage Victoria. Mineral Assessment @ VIC Department of Natural Resources and Environment. Abandoned Mines, Inactive And Abandoned Mine Land Reports - @ WA Department of Mines, Industry Regulation and Safety. Abandoned Mines Program @ WA Department of Energy, Mines, Industry Regulation and Safety. Mines and Mineral Deposits (MINEDEX) - @ WA Department of Energy, Mines, Industry Regulation and Safety

Defence, Military Sites, and UXO Areas

Current and Historical Defence and Military sites mapped by Land Insight Research team @ Land Insight National Land Use Atlas (NLUA). Department of Defence 3 Year Regional Contamination Investigation Program (RCIP) © Commonwealth of Australia, Department of Defence. Defence Sites © Australian Government - Various sources and Department of Defence © Commonwealth of Australia. @ Land Insight National Land Use Atlas (NLUA). National Unexploded Ordnance Program (UXO) @ Australian Government Defence.

Former Gasworks Sites

AUS – Gasworks sites (Various), @ National Trust of Australia, @ National Library of Australia, @ Pocket Oz Sydney Guide, @ wikipedia. Former gasworks site locations mapped by Land Insight Research team @ Land Insight National Land Use Atlas (NLUA). Archaeological database and records © New England Archaeology. Images, Wikipedia, @Flickr images. The historical marker database. ACT – Gaswork sites @ ACT gov. NSW – Former gasworks sites @ EPA NSW, @ NSW Department of Environment and Conservation, Heritage NSW. NT - Gaswork sites @ EPA NT. QLD - Gaswork sites @ DES QLD. SA - Gaswork sites @ EPA SA, @ SA Heritage Places Database Search (maps SA). TAS - Gaswork sites @ EPA TAS, @ Ligthscape Tasmania. VIC – Gasworks sites,

@EPA VIC, @ Development Victoria. WA - Gasworks sites, @EPA WA, @ Department of Water and Environmental Regulation WA.

PFAS sites

AUS – National PFAS Investigation Program – State-wide PFAS Investigation Program @Australian Government, Department of Infrastructure, Transport, Regional Development, Communications and The Arts. PFAS research @ Land Insight National Land Use Atlas (NLUA).

PFAS Investigation and Management Program - PFAS contamination at Department of Defence sites, @ Defence Government. @ Australian Government Defence. Metropolitan Fire Brigade stations. Potential historical use of PFAS @ Australian Government.

PFAS Taskforce. Airservices Australia National & PFAS Management Program, Airservices Australia.

ACT - Potential PFAS contaminated sites in the ACT - © ACT Environment Protection Authority. NSW - The NSW Government PFAS Investigation Program, © State of NSW and the NSW Environment Protection Authority. NT – PFAS National Environmental Management Plan (NEMP) @ NT EPA. QLD - PFAS site investigations, PFAS in QLD, @ QLD government. SA - Per- and poly-fluoroalkyl substances (PFAS), @SA EPA. TAS - PFAS Contamination, @ TAS EPA. VIC - PFAS management sites, PFAS contamination at Department of Defence sites @ VIC EPA. WA - PFAS Investigations in Western Australia, @ WA government, @ WA DWER.

Section 4 - Potentially Contaminated Areas

Potentially Contaminated Areas, Activities (PCA) – Notifiable Activities Locations and Description

The research database includes Potentially Contaminating Activities or businesses, industries, and activities that have been identified as having an increased likelihood of causing contamination. Many of these are considered notifiable activities, or activities that require regulation to operate. This database is meticulously curated from a variety of information sources and undergoes rigorous validation procedures carried out by our team of scientists, quality assurance professionals, and technical experts, ensuring its accuracy and reliability. The PCA database systematically identifies and classifies site locations into fifty differing categories, including:

Abattoirs, Abrasive Blasting, Agriculture/Horticulture, Airports, Asbestos, Asphalt or Bitumen, Batteries, Breweries/Distilleries, Cement, Concrete or Lime, Cemeteries, Chemicals, Coal Yards, Depots and Storage Yards, Dry Cleaners, Electrical or Electrical Components, Explosives and Dangerous Goods, Extractive Industries, Fire and Rescue, Food Manufacturing, Foundry, Smelting or Refining, Fuel Terminals & Depots, Glass, Ceramics and Plastic, Gun, Pistol or Rifle Ranges, Hospitals and Research Facilities, Landfill Sites, Livestock Dips, Mechanical and Automotive, Metal Fabrication and Treatments, Oil and Gas, Other Infrastructure Facilities, Paint Industries, Petrol Stations, Pharmaceuticals, Port and Marina Operations, Power Plants, Printing and Photography, Rail Industry and Associated Activities, Rubber and Tyre, Storage Tanks, Substations and Switching Stations, Textiles and Tannery, Timber, Pulp and Paper Works, Waste and Recycling Facilities, Wastewater Treatment Facilities.

Potentially Contaminating Activities and Locations (PCA) - © Google; Nearmap data; @ Datajet Australia Pty Ltd – with permission and @ Land Insight National Land Use Atlas (NLUA).

The Potentially Contaminating Activities (PCA) is a unique database proprietary to Land Insights. Please note that <u>not all</u> sources are included; only the most significant or larger databases are referenced for brevity. Individual research on each of these sources has not been included due to the comprehensive nature of the list.

Airports – Designated international airports in Australia @ Department of Infrastructure, Transport, Regional Development, Communities, and the Arts Australian Gov. List of airports Australia @ Wikipedia. Australia Airports Map @ Sydney-australia biz

Catte Dips: Cattle Dip Site Locator Northern Rivers Region - © State of New South Wales through NSW Department of Industry; and @ Land Insight National Land Use Atlas (NLUA).

Dry cleaners: Dry cleaners @ Drycleaning Institute of Australia; Lawrence Dry Cleaners Locations @ Lawrence Dry Cleaners, and @ Land Insight National Land Use Atlas (NLUA).

Landfill Sites: NSW – Landfill sites @ EPA NSW. QLD - Location of waste sites | Environment, land and water, Closed landfill sites @ QLD gov. SA - Landfill map, EPA SA. TAS – Landfills @ EPA TAS. VIC – Victorian Landfill Register - © EPA Victoria. Waste and Recycling Facilities: National Waste Management Facilities - © Commonwealth of Australia (Geoscience Australia), Australia's waste and resource recovery infrastructure @ DCCEEW @ Land Insight National Land Use Atlas (NLUA).

Petrol Stations: National Liquid Fuel Refineries and Facilities, Liquid Fuel & Aviation Fuel Depots/Terminals, National Liquid Fuel Refineries - © Commonwealth of Australia (Geoscience Australia), Petrol Stations @ Digital Atlas of Australia. Fuelcheck @ Fair Trading NSW gov. @ Land Insight National Land Use Atlas (NLUA).

Power Plants: AUS @ Powerplants Australia. QLD Power Plants map of Queensland @Department of Energy and Climate. Various sources. @ Land Insight National Land Use Atlas (NLUA).

Waste and Recycling Facilities: National Waste Management Facilities - © Commonwealth of Australia (Geoscience Australia), Australia's waste and resource recovery infrastructure @ DCCEEW. @ Land Insight National Land Use Atlas (NLUA). NSW – Waste facilities @ NSW EPA. NT - Waste & Recycling NT, City of Darwin. QLD - Public waste and recycling facilities in Queensland @ Queensland Government Open Data Portal. SA - Waste disposal, Waste depots @ EPA SA. TAS – Waste Centres, Waste Disposal Facilities @ EPA TAS. VIC - Victoria's waste and resource recovery infrastructure, Waste Facility Locations Victoria's Waste and Recycling Infrastructure Map © Recycling Victoria. WA @ VIC Gov. WA – Waste locations and recycling centres @ DEW WA. @ Land Insight National Land Use Atlas (NLUA).

Historical Business Directories

AUS - AUS Historical Commercial & Trade Directory Data – various sources, see below. UBD business & street directory, Sands & McDougall directories, @ Australian Business Datalist ABDL (with permission)
ACT - 1971, 1981 & 1991 Telecom Australia Yellow Pages Country NSW Directories – Permission for use Sensis 2017.
2005 - 2022 - @ Australian Business Datalist ABDL – with permission
NSW – Sydney Metropolitan Area: 1932-1933 John Sands Sydney Trades Directory
1940 & 1950 Commonwealth of Australia Telephone Directory Sydney
1960-1961 Telecom Australia Pink Pages Sydney – Permission for use Sensis
1970-1971 United Business Directories Sydney – Licenced under Hardie Grant
1974-1975 NSW Post Office Yellow Pages Sydney Buying Guide and Commercial/Industrial Directories – Permission for use Sensis
1980-1981 & 1990-1991 Telecom Australia Yellow Pages Sydney – Permission for use Sensis. 2005 – 2022 @ Australian Business Datalist ABDL
NT - 2005 - 2022 @ Australian Business Datalist ABDL – with permission
QLD - 1865, 1890, 1900, 1906, 1916, 1919, 1924, 1925, 1970 – Pugh's Almanac (copyright expired)
1970-1971 - Brisbane Telephone Directory (copyright expired)
2005 - 2022 - @ Australian Business Datalist ABDL – with permission
SA - 1930, 1935, 1944-45, 1950, 1955, 1960, 1965, 1970, 1973 - Sands & McDougall Melbourne Trade Directory (copyright expired)
2005 - 2022 @ Australian Business Datalist ABDL – with permission
TAS - 1896-1897, 1900, 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940-41, 1945-46, 1948 - Wises Post Office Directory (copyright expired)
2005 - 2022 @ Australian Business Datalist ABDL – with permission
VIC - 1900, 1905, 1915, 1925, 1935, 1945, 1955, 1965, 1975 - Sands & McDougall Melbourne Trade Directory (copyright expired)
1960-1961, 1970-1971 - Post Office Pink Pages Melbourne – Permission for use Sensis 2017
1981-1982, 1990-1991 - Telstra Yellow Pages Melbourne - Permission for use Sensis 2017
Telstra Yellow Pages Melbourne - Permission for use Sensis 2017
2005 - 2022 @ Australian Business Datalist ABDL – with permission
WA -2005 - 2022 @ Australian Business Datalist ABDL – with permission

Section 5 – Natural Hazards

Fire Hazards

AUS - Bushfire Prone Areas – © Australian Government Department of Climate Change, Energy, the Environment and Water. Bushfire History - © Commonwealth of Australia (Geoscience Australia). ACT - Bushfire Prone Areas – © ACT Government Environment, Planning and Sustainable Development Directorate. Bushfire History - NPWS Fire History - Wildfires and Prescribed Burns © State Government of NSW and Department of Planning, Industry and Environment. NSW - Bushfire Prone Areas – © State of New South Wales (NSW Rural Fire Service). Bushfire History - © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water, Wildfires and Prescribed Burns - © State of New South Wales, National Parks, and Wildlife Management Unit. NT - Bushfire Prone Areas – © NT Government of Australia through Department of Environment and Natural Resources. Bushfire History - ©The Commonwealth of Australia through the Department of the Environment and Energy. QLD - Bushfire Prone Areas – © Commonwealth Scientific and Industrial Research Organisation (CSIRO) in conjunction with the State of Queensland (Queensland Fire and Emergency Services). Bushfire History - © State of Queensland (Department of Environment and Science). SA - Bushfire Prone Areas – © SA Government Country Fire Service (CFS), Department of Planning, Transport, and Infrastructure. Bushfire History - © SA Government Department for Environment and Water. TAS - Bushfire Prone Areas – © Tasmania Fire Service. Bushfire History - © Department of Environment, Parks, and Water Security. VIC - Bushfire Prone Areas – © VIC Government Department of Environment, Land, Water and Planning; Department of Transport, Planning and Local Infrastructure. Bushfire History - © VIC Government Department of Transport, Planning and Local Infrastructure. WA - Bushfire Prone Areas – © WA Government Department of Fire and Emergency Services. Bushfire History - © WA Government Department of Fire and Emergency Services.

Flood Hazard

AUS - Flood Planning Area, Other Flood Studies, and Flood History - @ Commonwealth of Australia, @ Bureau of Meteorology. This dataset is digitised and/or aggregated from various verified Council Records, Aerial Photography Interpretation, Flood Imagery Maps, Topographic Maps, Historic Parish Maps, publicly available technical reports, and information digitised by the Land Insight Research team. @Land Insight Research. ACT - Flood Risk and Flood map information © ACT Government Environment, Planning and Sustainable Development Directorate – Environment. NSW - NSW Flood Data Portal @NSW State Emergency Service, © State Government of NSW, NSW Department of Climate Change, Energy, the Environment and Water; and NSW Department of Planning, Housing, and Infrastructure; @ NSW Government Spatial Services. NT - Floodplain maps, Flood monitoring © NT Government of Australia through Department of Environment and Natural Resources, Department of Lands, Planning, and the Environment. QLD - QLD Flood mapping, Historical flood mapping © The State of Queensland, Department of Resources, Queensland Reconstruction Authority. Flood data series and Flood data overlays (various) Queensland Open Data portal. SA - Flood Awareness map, Flood Risk © Crown in right of the State of South Australia, @ Government of South Australia, Department for Environment and Water. Flood mapping (various) SA Data Directory portal. TAS - Tasmania Flood Mapping Projects Reports @ Tasmania State Emergency Services. Floodplain Mapping in Tasmania, Flood Inundation Extent models. © Department of Natural Resources and Environment Tasmania. TAS TheList dataset portal. VIC - Victoria Flood mapping and overlays. © Copyright State Government of Victoria various datasets, Victoria State Emergency Service; Department of Energy, Environment and Climate Action, Department of Environment, Land, Water & Planning. Flood data (various) VIC data portal (data.vic). WA - Floodplain mapping tool, Landgate Flood Map. © Government of Western Australia, @ Department of Water and Environmental Regulation. Flood data (various) WA data portal.

Erosion Hazard

AUS - Soil Erosion Hazards, © Commonwealth of Australia (Geoscience Australia), @ Agriculture DAFF @Australian Government. ACT - Soil and Land Resources of the Australian Capital Territory, © State of New South Wales and Department of Planning and Environment. NSW – Land Soil Capability, Vulnerable lands, © State of New South Wales and Department of Planning and Environment NT - Land System, Soil Conservation, © Department of Environment, Parks, and Water Security. QLD - QLD Erosion prone areas, Coastal and Inland erosion areas, © The State of Queensland. SA - Landscape salad, Mass movement and soil Attributes, Water and Wind Erosion, © Department for Environment and Water. TAS - Coastal Erosion Hazard, Landslide Planning Map, Water and Wind Erosion Statewide map, © Department of Natural Resources and Environment Tasmania. VIC - Geomorphology of Victoria, © VIC Government Department of Jobs, Skills, Industry and Regions. WA - Soil Landscape Land Quality, Land capability assessment, Land instability Risk, Water Erosion Riks, Wind Erosion Risk, © WA Government Department of Primary Industries and Regional Development.

For more information visit www.landinsight.co or contact orders@landinsight.co.

Terms and Conditions

Terms and Conditions
1. Land Insight & Resources (Land Insight) will perform the Services in accordance with these terms and conditions
2. By submitting the Application Form, the User acknowledges that it has read and understood these terms and conditions and agrees to be bound by them.
3.Land Insight reserves the right to change these terms and conditions. Any change shall be effective upon notice, which may be given by Land Insight posting such change on the Website, or by direct communication with the User.

Services
4.Land Insight agrees to undertake the Services using due skill, care, and diligence.
5.The User assumes the sole risk of making use of, and/or relying on, the report and the Services. Land Insight makes no representations about the suitability, completeness, timeliness, reliability, legality, or accuracy of the Services.
6.Unless Land Insight agrees expressly otherwise:
(A) The Services are solely for the use and benefit of the User; and
(B) Land Insight does not accept any liability, whether directly or indirectly, for any liability or loss suffered or incurred by any third par ty placing any reliance on the performance of the Services or any Documents or material arising from or in connection with the Services.
7. The User warrants to Land Insight that it will not use the Services for any purpose that is unlawful or is otherwise inconsistent with these terms and conditions.
8. The User will not alter in any way or provide a copy of the report, or any Document prepared by Land Insight to any other person without Land Insight's prior written consent.

Payment Terms
9. The Fee will be payable at the time of submitting the Application Form unless invoicing payment terms have been negotiated prior to purchase with Land Insight.
10. The User and Land Insight may agree in writing to vary the Services. The fee for each variation shall be agreed between Land Insight and the User.
11. The User agrees to pay Land Insight the Fee, including the fee for any variation requested in accordance with clause 12.
12. If the User's rights are terminated and the User has made an advance payment, Land Insight will refund the User a reasonable proportion of the balance as determined by Land Insight in relation to the value of Services already provided.
13. GST at the prevailing rate is payable in addition to the Fee. The User agrees to pay any other applicable taxes, duties or government-imposed fees related to the User's use of the Services.

Intellectual Property
14. Land Insight owns all intellectual proper ty in the Report and arising from or in connection with the Services.
15.Land Insight grants the User a royalty free licence to use Land Insight's intellectual proper ty for that User's personal assessment of its Proper ty(s) only.

Privacy Policy
16. Upon submitting the Application Form the User consents to Land Insight's use of the personal data provided by the User for the purposes of providing the Services.
17. The Reliance on the report, the use of the Services and the use of Land Insight's Website is at the User's own risk. The User accepts that Land Insight does not guarantee the confidentiality of any communication or information transmitted through the use of the Website.
18. Land Insight will not provide to any third par ty any personal data provided by a User without the User's permission.
19. The User acknowledges that any feedback provided to Land Insight over the Website is not confidential and that Land Insight has the right to publish, reproduce, disseminate, transmit, distribute and copy (in whole or in part) any such feedback without the approval of the User.
20. Land Insight assumes no responsibility or liability for any content, communications or feedback submitted by a User over the Website. If a User has submitted objectionable content, communications or Feedback, Land Insight may, in its sole discretion, terminate that User's account, take legal action, or notify the appropriate authorities or par ties, without prior notice.

Third Party Services
21. The User accepts that, although the Website may contain or provide information regarding applications, products and/or services provided or offered by third par ties, Land Insight does not recommend or endorse any such third par ty applications, products, and/or services.
22. The report contains content provided to Land Insight by other par ties (Third Par ty Content). Land Insight is not responsible for, does not endorse and makes no representations either expressly or impliedly concerning the accuracy or completeness of any Third Par ty Content. You rely on the Third Par ty Content completely at your own risk.

Limit and Extent of Liability
23. Land Insight's liability is limited to the amount of the Fee. Liability arising in the provision of the Services is reduced to the extent that it arises out of or in connection with any negligent act or omission by the User.
24. Neither par ty is liable to the other for loss of actual or anticipated revenue or profits, increased capital, or financing costs, increased operational or borrowing costs, pure economic loss, exemplary or punitive damages or indirect or consequential damages or loss.
25. In no event shall Land Insight or any directors, officers, employees or agents be liable for any indirect, punitive, incidental, special, or consequential damages arising out of or in any way connected with the use of the Website, any delay or inability to use the Website, any information available on the Website, or otherwise arising out of the utilisation of the Website, whether based in contract, tor t, strict liability, or otherwise, even if Land Insight has been advised of the possibility of such damages. The negation of damages set forth herein is a fundamental element of the basis of the bargain between Land Insight and the User. The Services would not be provided without such limitations.

Property Verification

26. The User accepts that the Services provided do not take into account any information relating to the actual state or condition of the Property.
27. The User acknowledges that the Services are not to be interpreted as commenting on the physical characteristics or condition of the Proper ty, any particular purpose or use of that Proper ty or the saleability or value of the Property.

Termination and Modification

28. Land Insight reserves the right in its sole discretion to terminate, block or restrict the User's use of the Services or any portion thereof, for any reason, and without notice. In addition, Land Insight reserves the right in its sole discretion to terminate or modify any part of the Website without notice, for any reason.

Anti-Hacking

29. The User agrees not to directly or indirectly, attempt to or disrupt, impair, interfere with, alter, or modify the Website or any of its content.
30. The User agrees not to allow, aid or abet third par ties to directly or indirectly, attempt to or disrupt, impair, interfere with, alter or modify the Website or any of its content, or obtain access to any information regarding any User or any other report issued to a User.

Complaints

31. Any complaints in relation to the Services should, in the first instance, be in writing and addressed to Land Insight Customer Service at: info@landinsight.co. Land Insight will respond to any such complaints in writing as soon as practicably possible.

General Matters

32. These terms and conditions are governed by and will be construed and enforced in accordance with the laws of the State of New South Wales, Australia. If any dispute, controversy, or claim arises out of or relating to these terms and conditions, whether sounding in contract, tor t or otherwise, it shall be resolved by use of an alternative dispute resolution procedure acceptable to both par ties with the assistance of a mediator. If the dispute has not been resolved to the satisfaction of either par ty within 60 days of initiation of the procedure or if either par ty fails or refuses to participate in or withdraws from participating in the procedure, then either par ty may refer the dispute to the court.
33. These terms and conditions apply to all Services provided by Land Insight.
34. If there is any inconsistency between these terms and conditions and any other document or agreement between the par ties, these terms and conditions will prevail.
35. These terms and conditions represent the entire agreement between the par ties.
36. The User authorises Land Insight to destroy Documents which Land Insight has prepared or holds in connection with the Services 7 years after the last date on which the Services were provided.
37. If any of the terms of the Application Form or the terms and conditions are invalid, unenforceable, or void, the relevant term must be read down to the maximum extent possible or severed from the rest of the Application Form or these terms and conditions.
38. These terms and conditions can only be amended or varied by a written document signed by both par ties.
39. Neither par ty may assign or transfer any rights or obligations arising in the provision of the Services or these terms and conditions without the other party's written consent.

Defined Terms

Application Form	Means the form and accompanying information provided on the Website, completed, and submitted by the User to request the Services.
Document	Includes a report, and any other written or electronic document.
Fee	Means the amount set out in the Application Form or confirmed via an invoice.
Property	Means the proper ty to which the Services and the report relate.
Report	Means the Document prepared by Land Insight and provided to the User which contains the environmental and development data which is relevant to the Proper ty.
Services	Means the review of data and information on which the report is based, and the preparation and provision to the User of the report.
Website	Means Land Insight's online site, which is: www.landinsight.co
User	Means the person(s) set out in the Application Form including that person's permitted successors.

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Appendix A

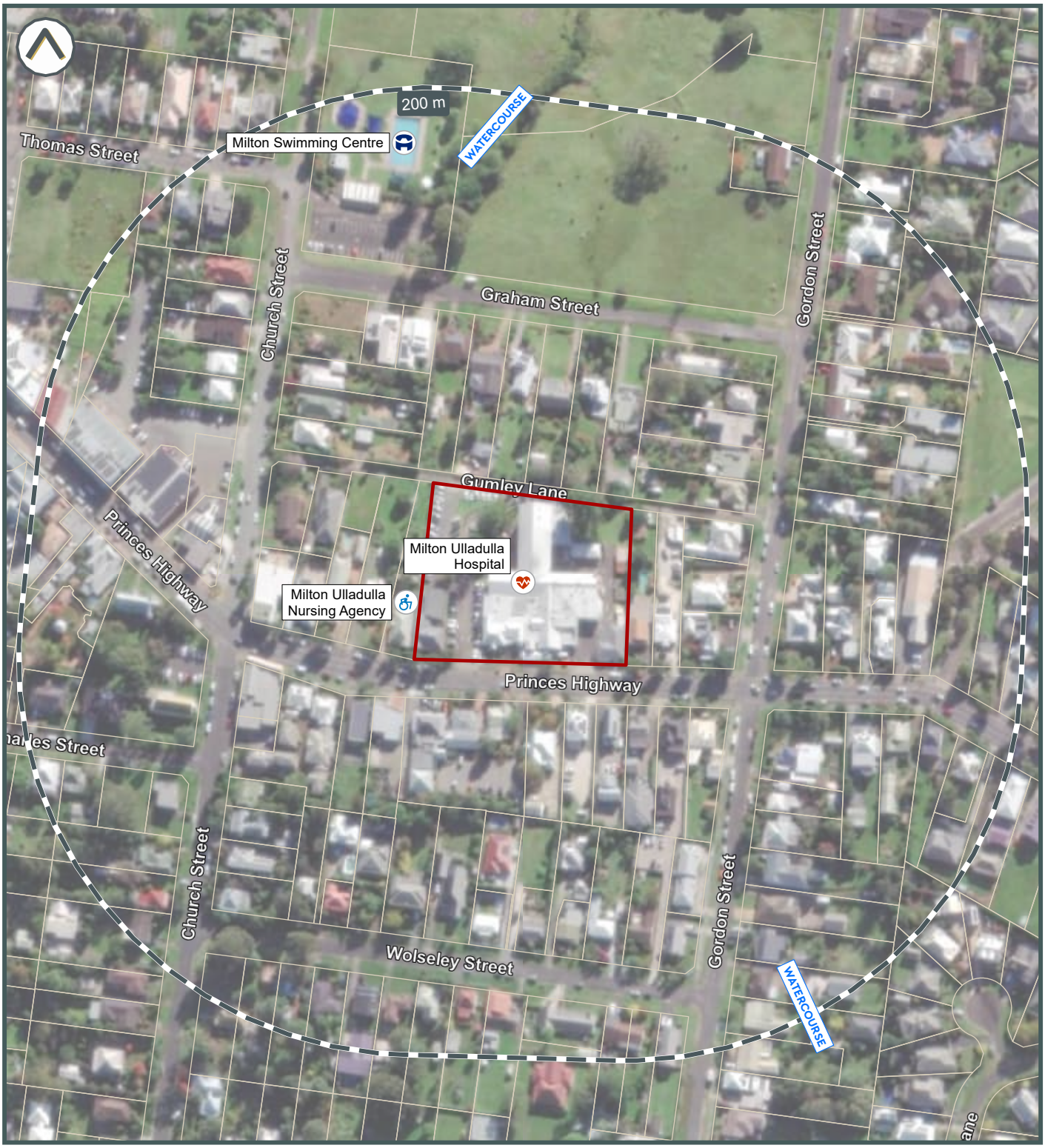
REPORT MAPS

106 Princes Highway
Milton, NSW

PROPERTY SETTING

MAP 1.1

Sensitive Receptors and Features of Interest



Subject area
Hospital and Health Care
Residential and Aged Care Service
Sports and Recreation
Water Bodies

0 25 50 75 100 125m

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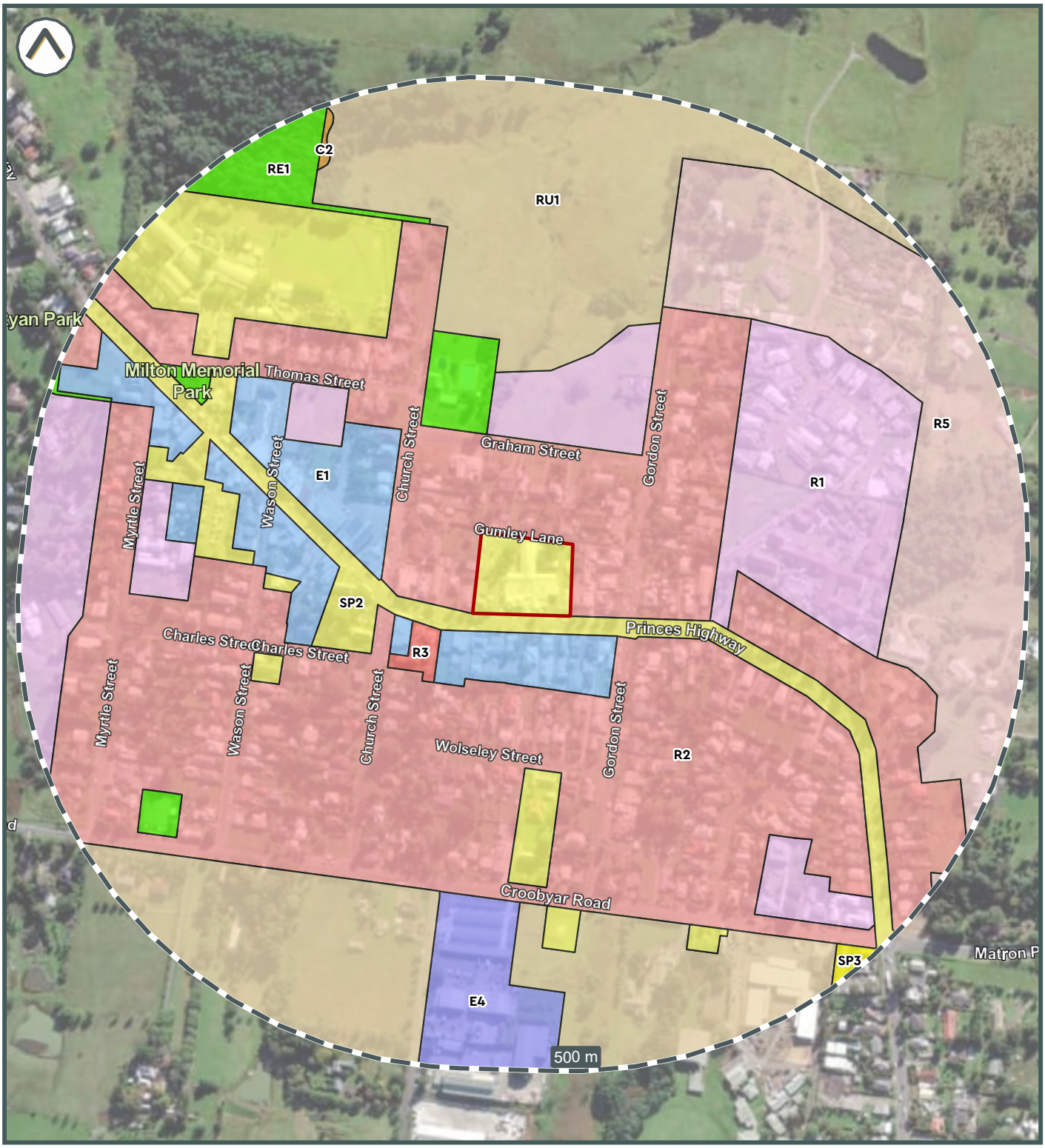
MAP 1.2a

Zoning



Subject area

Zone

- C2 – Environmental Conservation; C2, Environmental Management
- E1 – Local Centre
- E4 – General Industrial
- R1 – General Residential
- R2 – Low Density Residential
- R3 – Medium Density Residential
- R5 – Large Lot Residential
- RE1 – Public Recreation
- RU1 – Primary Production
- SP2 – Infrastructure
- SP3 – Tourist

0 50 100 150 200 250m

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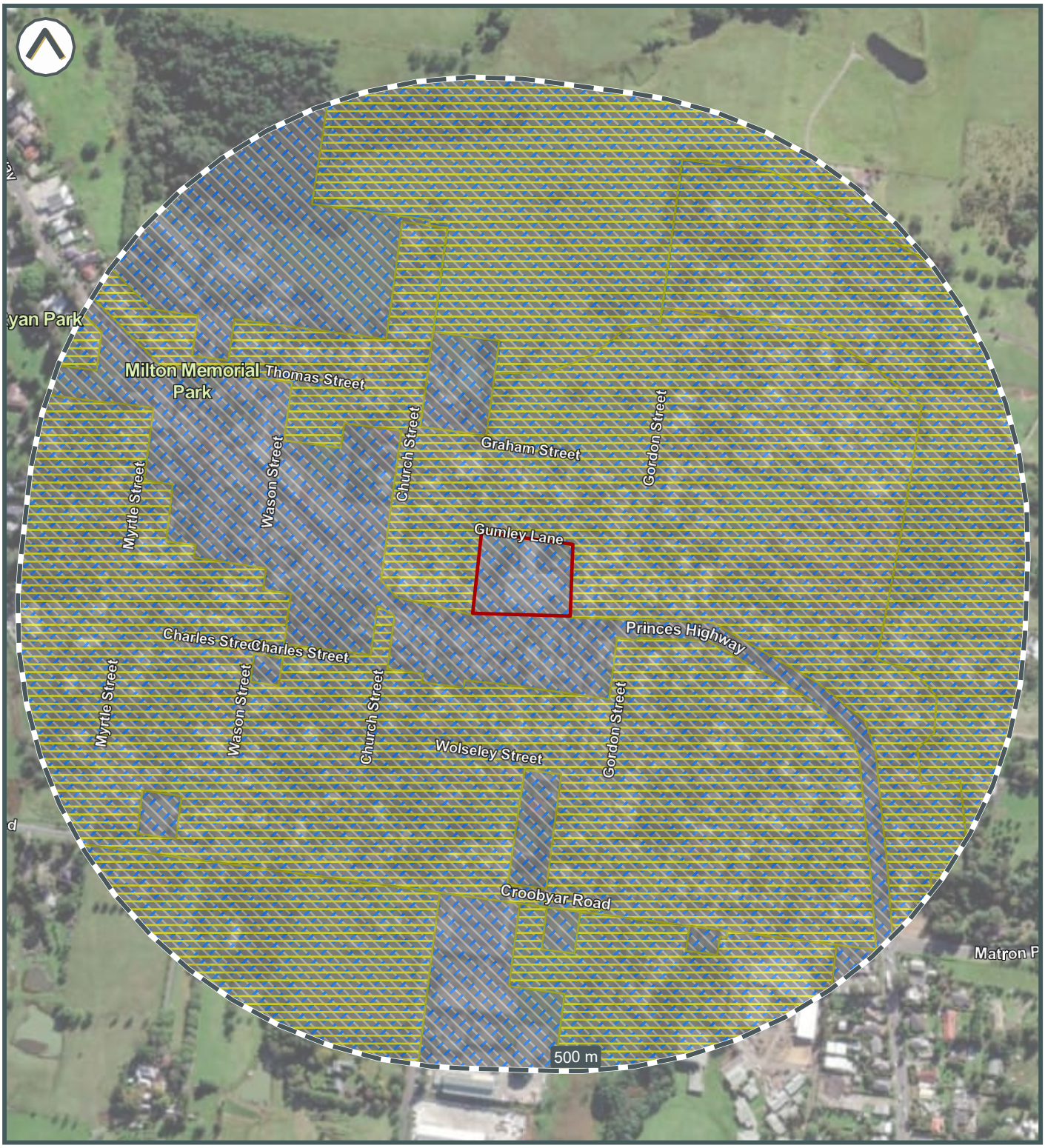
PROPERTY SETTING

Planning Overlays

MAP 1.2b



- Subject area

Overlays

- Acid Sulfate Soils
- Additional Permitted Uses
- Allowable Clearing
- Coal Seam Gas Exclusions
- Heritage
- Land Application
- Maximum Building Height (m)
- Minimum Lot Size (sq m)
- Minimum Water Use Standard (%)
- Riparian Lands and Watercourses
- Scenic Protection
- SEPP Land Application
- Terrestrial Biodiversity

0 50 100 150 200 250m

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PROPERTY SETTING

Heritage

MAP 1.3

Subject area

State and Local Heritage Registers

Heritage Register

0 25 50 75 100 125m

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Soil Landscape and Salinity

MAP 1.4a

Subject area

Radon Level (Bq/m3)
5–19

Code
BP

0 50 100 150 200 250m

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Acid Sulfate Soils

MAP 1.4b

Subject area

Atlas of Australian Acid Sulfate Soils
Low Probability of occurrence

Coastal Acid Sulfate Soils
Class 5

0 50 100 150 200 250m

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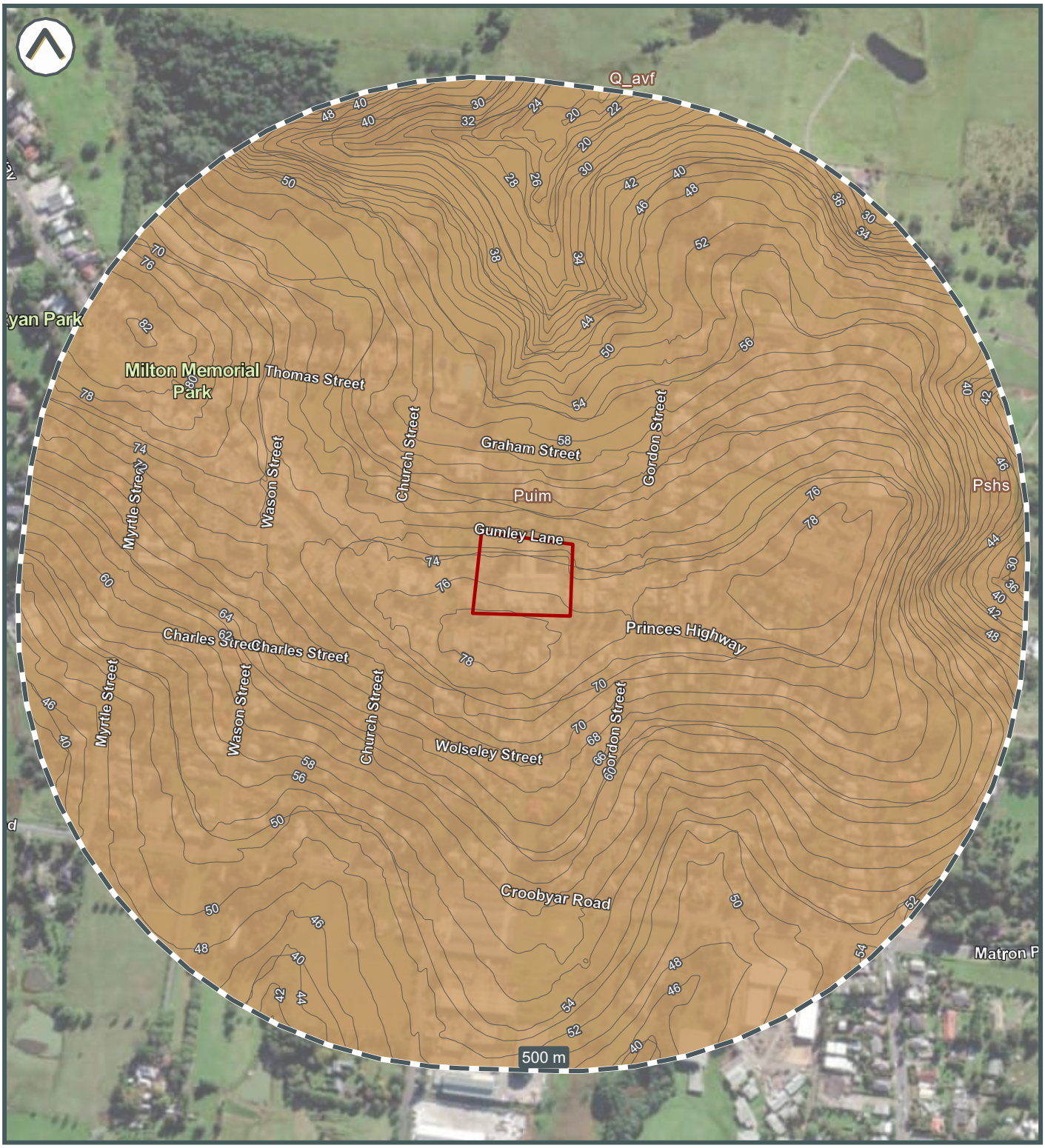
Geology and Topography

MAP 1.5



Subject area
Topographic Contour (m)
Geology Code
Pshs
Puim
Q_avf

0 50 100 150 200 250m

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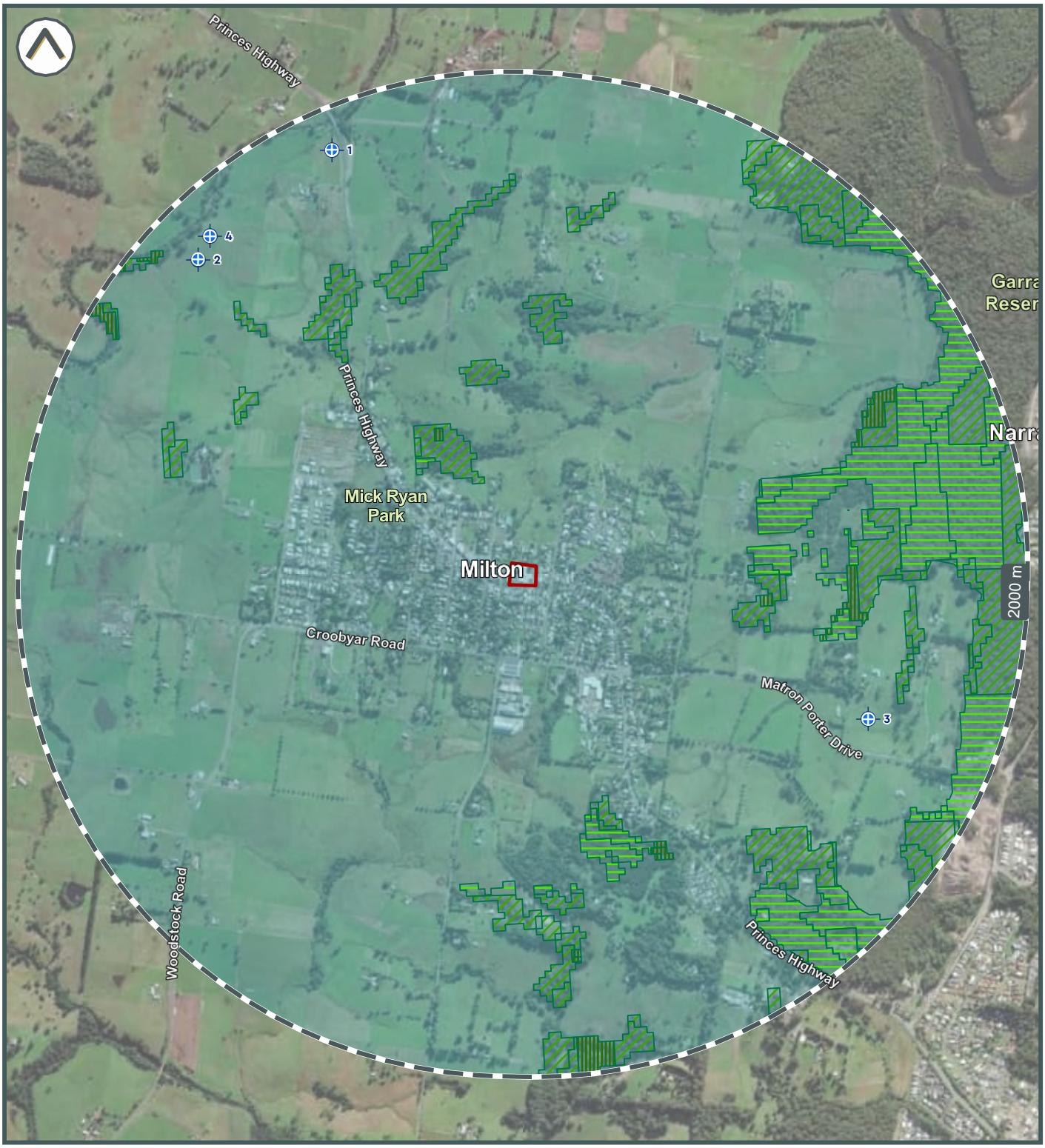
HYDROGEOLOGY

MAP 2.1

Groundwater Dependent Ecosystems & Hydrogeology Constraints



Subject area

Groundwater bores

Ecosystems that rely on Subsurface presence of Groundwater

High potential GDE – from regional studies

Moderate potential GDE – from regional studies

Low potential GDE – from regional studies

Aquifer type

Fractured or fissured, extensive aquifers of low to moderate productivity

0 200 400 600 800 1,000m

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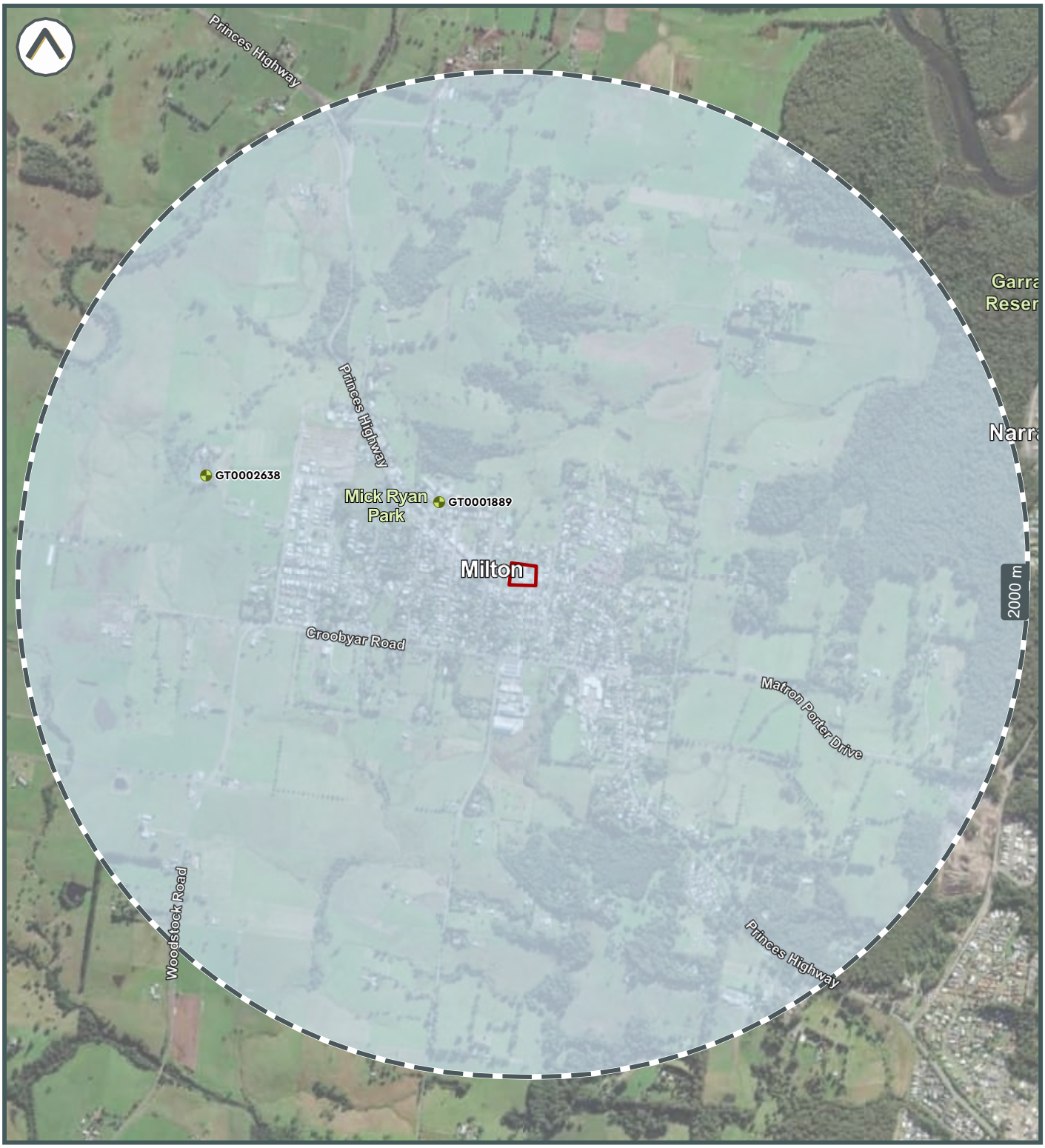
Groundwater and Other Bores

MAP 2.2



Subject area

Other borehole/monitoring well location

Salinity Class

No Data

0 200 400 600 800 1,000m

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MAP 3.1

Contaminated Land Public Register

Subject area

0 100 200 300 400 500m

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Licences, Approvals & Assessments

Subject area

0 100 200 300 400 500m

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MAP 3.3a

Sites Regulated by Other Jurisdictional Body

Subject area

0 200 400 600 800 1,000m

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MAP 3.3b

Other Potential Hazard Sources

Subject area

0 50 100 150 200 250m

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POTENTIALLY CONTAMINATED AREAS

Current Potentially Contaminating Activities (PCAs)

MAP 4.1

Subject area

Potentially Contaminating Activities

Manufacturing and Industrial Facilities

Petrol Stations and Fuel Terminals

Data is current as when this report was created. However due to the turnover of business locations, some addresses may be former.

0 25 50 75 100 125m

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NATURAL HAZARDS

Fire Hazards

MAP 5.1

Subject area

Bushfire Prone Areas

Vegetation Category 3

Vegetation Category 2

Vegetation Buffer

0 50 100 150 200 250m

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MAP 5.2

Flood Hazard

Subject area

0 50 100 150 200 250m

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MAP 5.3

Erosion Hazard

Subject area

Wind Erosion Risk
- Low
- Very Low

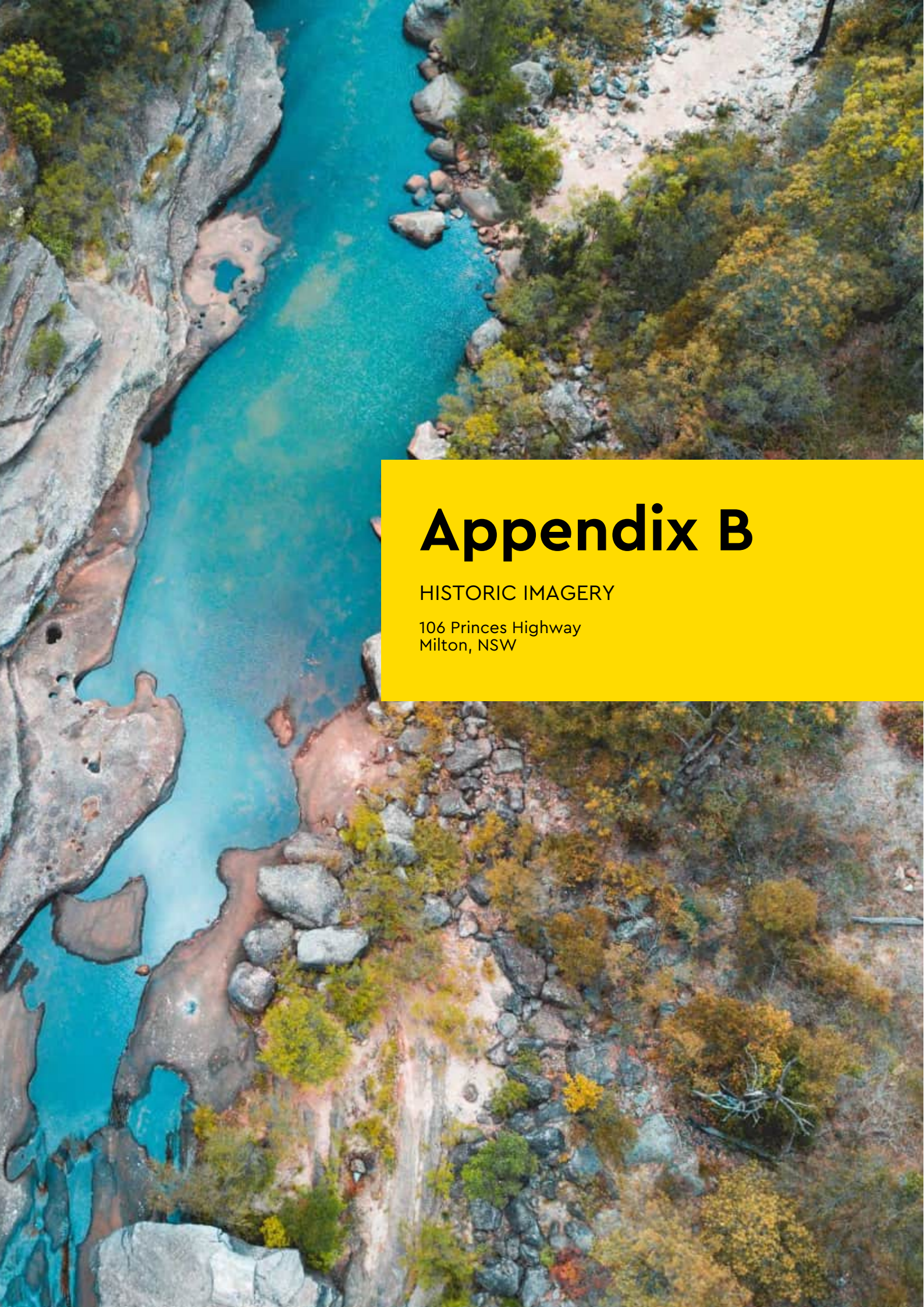
Water Erosion Risk
- Very High
- Moderate

Landslip Erosion Risk
- Very Low

0 50 100 150 200 250m

Land Insight

Land Insight



Appendix B

HISTORIC IMAGERY

106 Princes Highway
Milton, NSW

MAP B1

Historic Aerial Photograph – 1959

Subject area

0 25 50 75 100 125m

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MAP B2

Historic Aerial Photograph – 1970

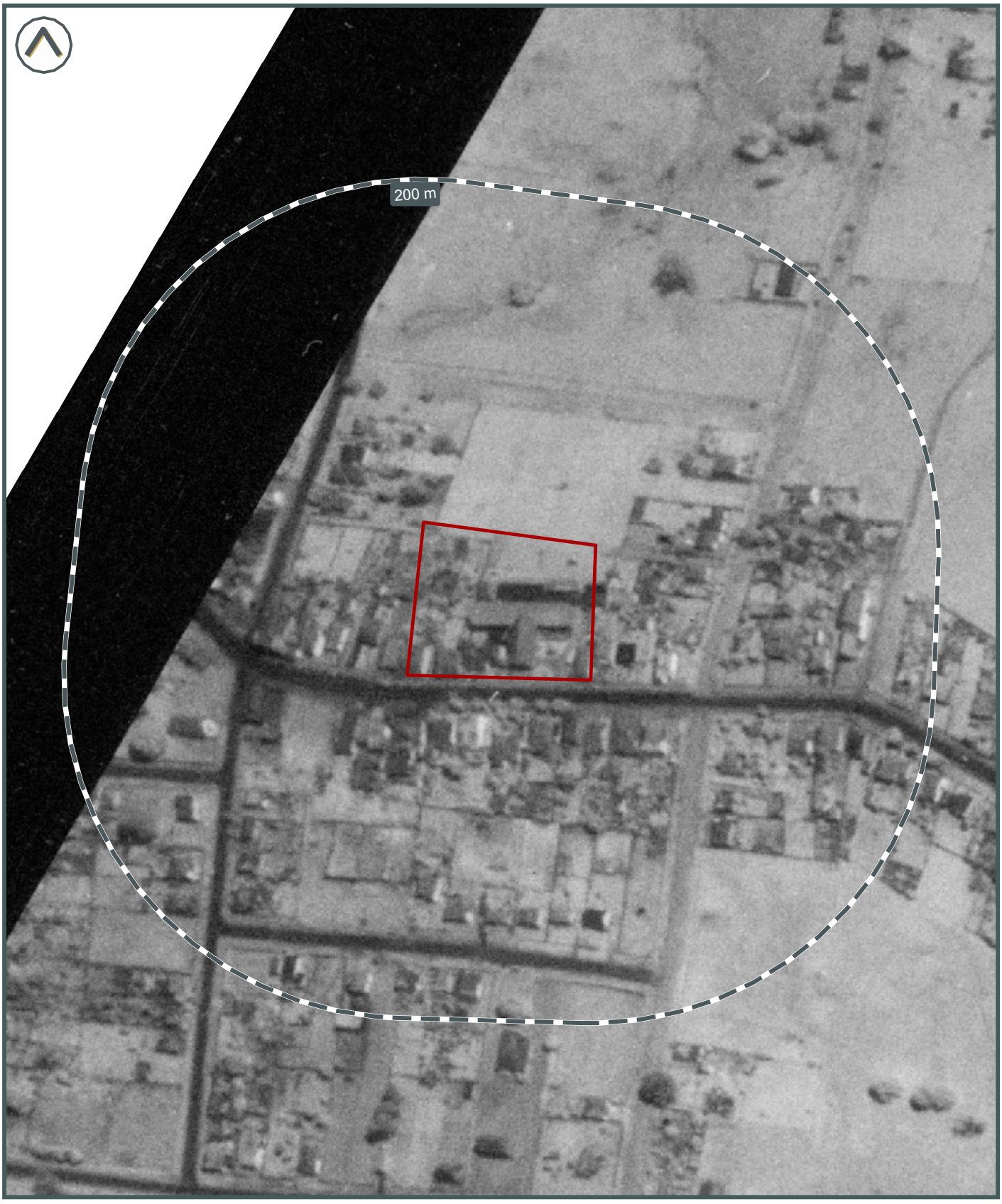
Subject area

0 25 50 75 100 125m

Land Insight

MAP B3

Historic Aerial Photograph – 1972



Subject area

0 25 50 75 100 125m

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MAP B4

Historic Aerial Photograph – 1975

Subject area

0 25 50 75 100 125m

Land Insight

MAP B5

Historic Aerial Photograph – 1979

Subject area

0 25 50 75 100 125m

Land Insight

MAP B6

Historic Aerial Photograph – 1987

Subject area

0 25 50 75 100 125m

Land Insight

Historic Aerial Photograph – 1991

Subject area

0 25 50 75 100 125m

Land Insight

MAP B8

Historic Aerial Photograph – 1997

Subject area

0 25 50 75 100 125m

Land Insight

MAP B9

Historic Aerial Photograph – 2004

Subject area

0 25 50 75 100 125m

Land Insight

MAP B10

Historic Aerial Photograph – 2012

Subject area

0 25 50 75 100 125m

Land Insight

MAP B11

Historic Aerial Photograph – 2018

Subject area

0 25 50 75 100 125m

Land Insight

MAP B12

Historic Aerial Photograph – 2019

Subject area

0 25 50 75 100 125m

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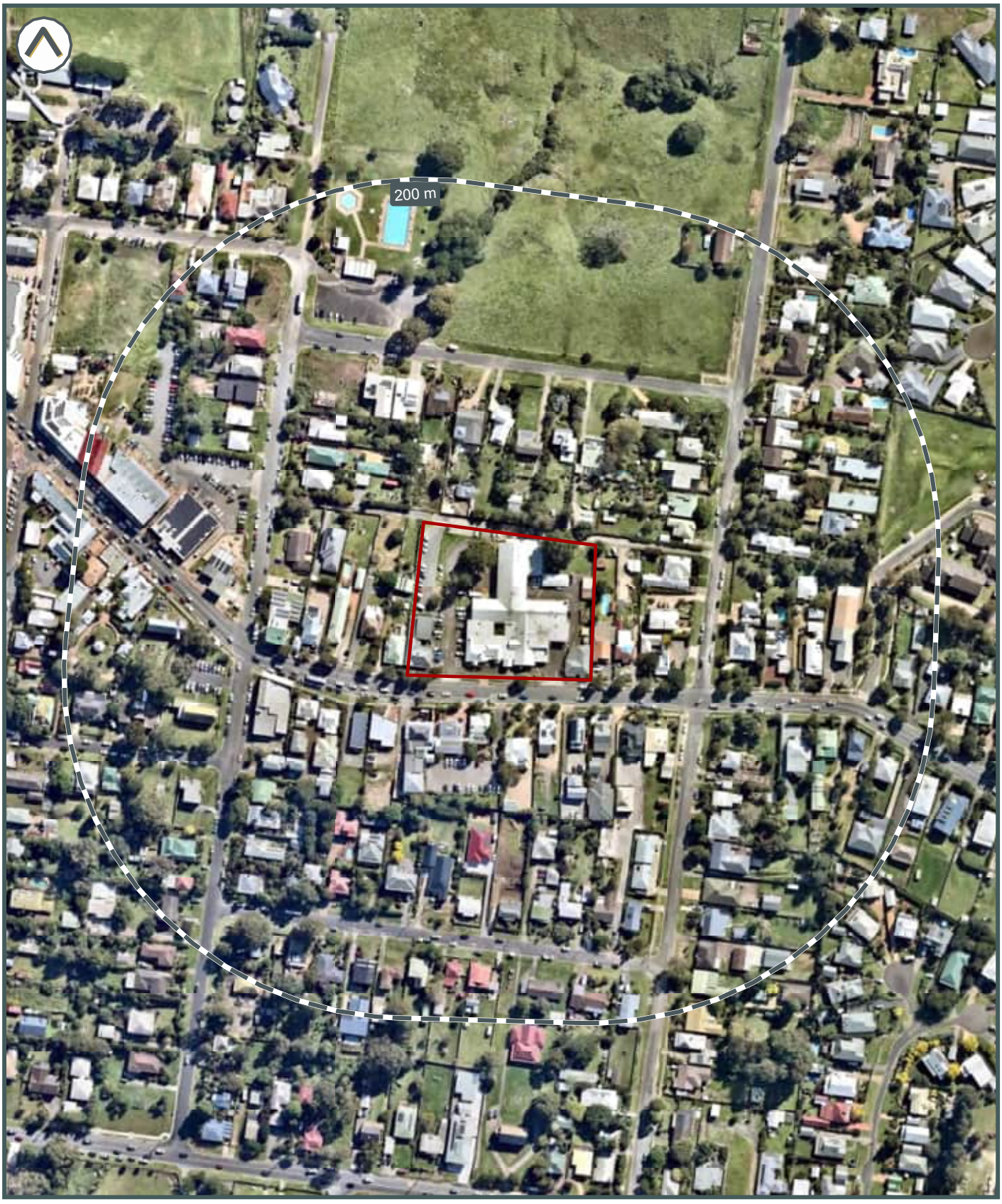
MAP B13

Historic Aerial Photograph – 2021



Subject area

0 25 50 75 100 125m

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MAP B14

Historic Aerial Photograph – 2023

Subject area

0 25 50 75 100 125m

Land Insight

MAP B15

Historic Aerial Photograph – 2025

Subject area

0 25 50 75 100 125m

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1969–1991 1:50,000 Topographic Map (Milton 8927-2N)

Subject area

0 120 240 360 480 600m

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Appendix C

Photographic Log

PHOTOGRAPHIC LOG

Client Name	Site Location	Project No.
Taylor Construction Group Pty Ltd	106 Princes Highway, Milton NSW	PS224991

Photo No.	Date
1	27/05/2025

Description

General overview of external area of the site (eastern side of site facing north).

Photo No.	Date
2	27/05/2025

Description

General overview of external area of the site (northern side of site facing north-west).

wsp	**PHOTOGRAPHIC LOG**

Client Name	**Site Location**	**Project No.**
Taylor Construction Group Pty Ltd	106 Princes Highway, Milton NSW	PS224991

Photo No.	**Date**
3	27/05/2025

Description

General overview of external area of the site (north-western side of site facing south).

Photo No.	**Date**
4	27/05/2025

Description

General overview of external area of the site (eastern side of site facing west).

	PHOTOGRAPHIC LOG	
Client Name Taylor Construction Group Pty Ltd	**Site Location** 106 Princes Highway, Milton NSW	**Project No.** PS224991

Photo No.	**Date**
5	27/05/2025

Description

General overview of external area of the site (northern side of site facing north-east).

Photo No.	**Date**
6	27/05/2025

Description

General overview of concrete structure (MUH-E building) used for storage of flammable liquids (eastern side of site facing north-east).

	PHOTOGRAPHIC LOG	
Client Name Taylor Construction Group Pty Ltd	**Site Location** 106 Princes Highway, Milton NSW	**Project No.** PS224991

Photo No.	**Date**
7	27/05/2025

Description

Close up view of concrete structure (MUH-E building) used for storage of flammable liquids (eastern side of site facing south).

Photo No.	**Date**
8	27/05/2025

Description

Close up view of concrete structure (MUH-E building) used for storage of flammable liquids (eastern side of site facing south).

	PHOTOGRAPHIC LOG	
Client Name Taylor Construction Group Pty Ltd	**Site Location** 106 Princes Highway, Milton NSW	**Project No.** PS224991

Photo No.	**Date**
9	27/05/2025

Description

General overview of the large liquid petroleum gas (LPG) above ground storage tank (AST), with the diesel generators in the background (western side of site facing south).

Photo No.	**Date**
10	27/05/2025

Description

Close up view of the large LPG AST, with a fire extinguisher in the background (western side of site facing south-east).

	PHOTOGRAPHIC LOG	
Client Name Taylor Construction Group Pty Ltd	**Site Location** 106 Princes Highway, Milton NSW	**Project No.** PS224991

Photo No.	**Date**
11	27/05/2025

Description

Overview of the general vicinity of the small LPG AST, next to the Milton Ulladulla Community Cancer Services Centre building (western side of site facing west).

Photo No.	**Date**
12	27/05/2025

Description

Overview of the small LPG AST (western side of site facing west).

	PHOTOGRAPHIC LOG	
Client Name Taylor Construction Group Pty Ltd	**Site Location** 106 Princes Highway, Milton NSW	**Project No.** PS224991

Photo No.	**Date**
13	27/05/2025

Description

Overview of the vicinity of the gas-powered water heaters (center of the site, facing south-west).

Photo No.	**Date**
14	27/05/2025

Description

Close up view of one of the two diesel powered backup generators (central part of the site, facing south-east).

	PHOTOGRAPHIC LOG	
Client Name Taylor Construction Group Pty Ltd	**Site Location** 106 Princes Highway, Milton NSW	**Project No.** PS224991

Photo No.	**Date**
15	27/05/2025

Description

Close up view of the two diesel powered backup generators (central part of the site, facing east).

Photo No.	**Date**
16	27/05/2025

Description

View of the oil & fuel response spill kit next to the two diesel powered backup generators (central part of the site, facing south-east).

	PHOTOGRAPHIC LOG	
Client Name Taylor Construction Group Pty Ltd	**Site Location** 106 Princes Highway, Milton NSW	**Project No.** PS224991

Photo No.	**Date**
17	27/05/2025

Description

Close up view of a fire extinguisher located within the site.

Photo No.	**Date**
18	27/05/2025

Description

Close up view of a fire hydrant located within the site.

	PHOTOGRAPHIC LOG

Client Name	**Site Location**	**Project No.**
Taylor Construction Group Pty Ltd	106 Princes Highway, Milton NSW	PS224991

Photo No.	**Date**
19	27/05/2025

Description

View of the entry to the water treatment plant.

Appendix D

Borelogs

HAND AUGER: BH01

Sheet 1 of 1

Project: Ulladulla Hospital Preliminary Site Investigation

Location: 106 Princes Highway, Milton, NSW 2538 — Date Started: 27/5/2025

Client: Taylor Construction Group Pty Ltd — Contractor: — Drill Rig: — Date Completed: 27/5/2025

Job No.: PS224991 — Inclination: -90° — Logged: AJ

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
HA			0.0						FILL Sandy CLAY: medium plasticity, dark brown, sand is coarse grained; trace fine gravel.	(D to M)		FILL
			0.1		ES 0.05-0.15 m BH01_0.05-0.15							
				0.15					Hole Terminated at 0.15 m			
			0.2									
			0.3									
			0.4									
			0.5									

Comments

Checked

Date

HAND AUGER: BH02

Sheet 1 of 1

Project: Ulladulla Hospital Preliminary Site Investigation

Location: 106 Princes Highway, Milton, NSW 2538 — Date Started: 27/5/2025

Client: Taylor Construction Group Pty Ltd — Contractor: — Drill Rig: — Date Completed: 27/5/2025

Job No.: PS224991 — Inclination: -90° — Logged: AJ

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
HA			0.0		ES 0.00-0.10 m BH02_0-0.1				FILL Silty CLAY: medium to high plasticity, dark brown.	D to M		FILL
			0.1									
				0.15					FILL Gravelly SAND: coarse grained, orange brown, gravel is sandstone, fine; inclusions of quartz.			
			0.2		ES 0.20-0.25 m BH02_0.2-0.25							
				0.25					FILL CLAY: low plasticity, dark brown.		St	
			0.3		ES 0.30-0.35 m BH02_0.3-0.35							
				0.35					Hole Terminated at 0.35 m			
			0.4									
			0.5									

Comments

Checked

Date

HAND AUGER: BH03

Sheet 1 of 1

Project: Ulladulla Hospital Preliminary Site Investigation

Location: 106 Princes Highway, Milton, NSW 2538 — Date Started: 27/5/2025

Client: Taylor Construction Group Pty Ltd — Contractor: — Drill Rig: — Date Completed: 27/5/2025

Job No.: PS224991 — Inclination: -90° — Logged: AJ

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
HA			0.0		ES 0.00-0.10 m BH03_0-0.1				FILL Clayey SAND: coarse grained, high plasticity, dark brown.	D to M		FILL
			0.1	0.10	ES 0.10-0.20 m BH3_0.1-0.2				FILL Silty CLAY: high plasticity, brown.	M to W		
			0.2	0.20					Hole Terminated at 0.20 m			
			0.3									
			0.4									
			0.5									

Comments

Checked

Date

HAND AUGER: BH04

Sheet 1 of 1

Project: Ulladulla Hospital Preliminary Site Investigation

Location: 106 Princes Highway, Milton, NSW 2538 — Date Started: 27/5/2025

Client: Taylor Construction Group Pty Ltd — Contractor: — Drill Rig: — Date Completed: 27/5/2025

Job No.: PS224991 — Inclination: -90° — Logged: AJ

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
HA			0.0		ES 0.00-0.10 m BH04_0-0.1				FILL Clayey SAND: coarse grained, dark brown.	D to M		FILL
			0.1	*0.10*	ES 0.10-0.30 m BH4_0.1-0.3 QA100				FILL Sandy CLAY: high plasticity, dark brown, sand is coarse grained.			0.10-0.30: QA100
			0.2									
			0.3	*0.30*					Hole Terminated at 0.30 m			
			0.4									
			0.5									

Comments

Checked

Date

Appendix E

Laboratory Certificates

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

CLIENT: WSP	TURNAROUND REQUIREMENTS :		FOR LABORATORY USE ONLY (Circle)
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☒ Non Standard or urgent TAT (3 day TAT - 02/06/2025):	Custody Seal Intact? Yes No N/A
PROJECT: PS224091	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: C
PROJECT MANAGER: Andrew Jacovides	CONTACT PH: 0448 187 593	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: Andrew Jacovides	SAMPLER MOBILE: 0448 187 593	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default): ESDAT, excel, pdf	*Andrew Jacovides*	Fan		
Email Reports to (will default to PM if no other addresses are listed): andrew.jacovides@wsp.com		DATE/TIME:28/05/2025	DATE/TIME: 29/5/25 loc	DATE/TIME:	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):					

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).									Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S-26 - TRH, BTEX, PAH, M8	Asbestos P/A	EP231X - PFAS Full Suite	W5						Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	BH01_0.05-0.15	29/04/2025	S		3	X	X	X							
2	BH02_0-0.1	29/04/2025	S		3	X	X	X							
3	BH02_0.2-0.25	29/04/2025	S		3	X	X	X							
4	BH02_0.3-0.35	29/04/2025	S		3	X	X	X							
5	BH03_0-0.1	29/04/2025	S		3	X	X	X							
6	BH3_0.1-0.2	29/04/2025	S		3	X	X	X							
7	BH04_0-0.1	29/04/2025	S		3	X	X	X							
8	BH4_0.1-0.3	29/04/2025	S		3	X	X	X							
9	QA100	29/04/2025	S		2	X		X							
10	Rinsate	29/04/2025						X	X						
				TOTAL	21	9	8	10	1						

TAT

Subcontract / Forward Lab / Split WO: NEWCASTLE

Lab / Analysis: EA200

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No:

Attached By PO / Internal Sheet:

Environmental Division
Sydney
Work Order Reference
ES2515873

Telephone : + 61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag

SAMPLES RECEIVED WITHOUT COC

CLIENT: WSP	CARRIER: ATC
PROJECT / QUOTE: PS224991	CONNOTE #:
CONTACT NAME: Andrew Jaouvides.	AWB #:
CONTACT NUMBER:	# OF ESKIES: 1 SECURITY SEAL: Y N (N/A)
SAMPLER NAME: AJ	TYPE OF ESKIES: Hard (4)
SAMPLER NUMBER:	ESKY NUMBERS: Wel 503.
SAMPLES RECEIVED BY: DT	# OF SAMPLES: 22+
DATE/TIME RECEIVED: 28/5/25 1635 CLIENT SERVICES NOTIFIED BY:	TEMPERATURE:

Environmental Division
Sydney
Work Order Reference
ES2515873

Telephone : +61-2-8784 8555

LAB ID	SAMPLE DETAILS: SAMPLE ID	DATE	MATRIX	NUMBER OF CONTAINERS	ADDITIONAL INFORMATION / COMMENTS:
					☐ MICRO OTHER INFORMATION:
					☐ BIOSECURITY
					☐ BROKEN CONTAINERS
					☐ COC EMAILED
					☐ ALS COMPASS
1	BH04 - 0.1 - 0.3	27/5	S		HDPE soil Jar. OG, white bags.
2	BH01 - 0.05 - 0.13	27/5	S		"
3	Rinstate.	27/5	W	5	RP, PG, GP.
4					
5					
			TOTAL		

CORRESPONDENCE (DATE, INITIALS - DETAILS OF CORRESPONDENCE):

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **ES2515873**		
Client	: **WSP Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: ANDREW JACOVIDES	Contact	: Andrew Wotherspoon
Address	: LEVEL 27 680 GEORGE STREET SYDNEY 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: andrew.jacovides@wsp.com	E-mail	: andrew.wotherspoon@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: PS224991	Page	: 1 of 3
Order number	: PS224991	Quote number	: ES2025PARBRINSW0002 (WSP MSA 2025)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ANDREW JACOVIDES		

Dates

Date Samples Received	: 28-May-2025 16:35	Issue Date	: 02-Jun-2025
Client Requested Due Date	: 03-Jun-2025	Scheduled Reporting Date	: **03-Jun-2025**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 12.5°C, 8.4°C, 4.6°C - Ice present
Receipt Detail	: Hard Esky	No. of samples received / analysed	: 10 / 10

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- TRH semi volatiles component can't be conducted for sample #10 as the correct container was not received.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- [2/6/25]: This is an updated SRN which indicates the updated Sample dates and additional email recipients.
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EP231X (solids) PFAS - Full Suite (30 analytes)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2515873-001	27-May-2025 00:00	BH01_0.05-0.15	✓	✓	✓	✓
ES2515873-002	27-May-2025 00:00	BH02_0-0.1	✓	✓	✓	✓
ES2515873-003	27-May-2025 00:00	BH02_0.2-0.25	✓	✓	✓	✓
ES2515873-004	27-May-2025 00:00	BH02_0.3-0.35	✓	✓	✓	✓
ES2515873-005	27-May-2025 00:00	BH03_0-0.1	✓	✓	✓	✓
ES2515873-006	27-May-2025 00:00	BH03_01-0.2	✓	✓	✓	✓
ES2515873-007	27-May-2025 00:00	BH04_0-0.1	✓	✓	✓	✓
ES2515873-008	27-May-2025 00:00	BH04_0.1-0.3	✓	✓	✓	✓
ES2515873-009	27-May-2025 00:00	QA100	✓		✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (31 analytes)	WATER - W-02T 8 metals (Total)	WATER - W-18 TRH(C6 - C9)/BTEXN
ES2515873-010	27-May-2025 00:00	Rinsate	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ANDREW JACOVIDES		
- *AU Certificate of Analysis - NATA (COA)	Email	andrew.jacovides@wsp.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	andrew.jacovides@wsp.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	andrew.jacovides@wsp.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	andrew.jacovides@wsp.com
- A4 - AU Tax Invoice (INV)	Email	andrew.jacovides@wsp.com
- Chain of Custody (CoC) (COC)	Email	andrew.jacovides@wsp.com
- EDI Format - ENMRG (ENMRG)	Email	andrew.jacovides@wsp.com
- EDI Format - ESDAT (ESDAT)	Email	andrew.jacovides@wsp.com
- Purchase Order Request Letter (PO_Request)	Email	andrew.jacovides@wsp.com
ESDAT REPORTS		
- EDI Format - ESDAT (ESDAT)	Email	wsp@esdat.com.au
INVOICES		
- A4 - AU Tax Invoice (INV)	Email	au.accountspayable@wsp.com
Sally Gartland		
- *AU Certificate of Analysis - NATA (COA)	Email	Sally.Gartland@wsp.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Sally.Gartland@wsp.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Sally.Gartland@wsp.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Sally.Gartland@wsp.com
- Chain of Custody (CoC) (COC)	Email	Sally.Gartland@wsp.com
- EDI Format - ENMRG (ENMRG)	Email	Sally.Gartland@wsp.com
- EDI Format - ESDAT (ESDAT)	Email	Sally.Gartland@wsp.com

Inter-Laboratory Testing

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

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

CERTIFICATE OF ANALYSIS

Work Order	: **ES2515873**	Page	: 1 of 18
Client	: **WSP Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: ANDREW JACOVIDES	Contact	: Andrew Wotherspoon
Address	: LEVEL 27 680 GEORGE STREET SYDNEY 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: PS224991	Date Samples Received	: 28-May-2025 16:35
Order number	: PS224991	Date Analysis Commenced	: 29-May-2025
C-O-C number	: ----	Issue Date	: 03-Jun-2025 18:45
Sampler	: ANDREW JACOVIDES		
Site	: ----		
Quote number	: WSP MSA 2025		
No. of samples received	: 10		
No. of samples analysed	: 10		

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*
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
John Williams	Lab Technician	Newcastle - Asbestos, Mayfield West, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, 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.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the 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.
- 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.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0.05-0.15	BH02_0-0.1	BH02_0.2-0.25	BH02_0.3-0.35	BH03_0-0.1
			Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00
Compound	CAS Number	LOR	Unit	ES2515873-001	ES2515873-002	ES2515873-003	ES2515873-004	ES2515873-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	19.0	19.2	8.1	28.7	25.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	-	-	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	-	--	No	No	No	No	No
Organic Fibre	----	-	--	No	No	No	No	No
Sample weight (dry)	----	0.01	g	98.1	66.4	88.1	81.2	66.2
APPROVED IDENTIFIER:	----	-	--	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	12	11	<5	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	14	18	18	5	10
Copper	7440-50-8	5	mg/kg	91	26	6	186	33
Lead	7439-92-1	5	mg/kg	220	17	6	15	65
Nickel	7440-02-0	2	mg/kg	6	9	<2	2	5
Zinc	7440-66-6	5	mg/kg	126	60	9	34	123
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01_0.05-0.15	BH02_0-0.1	BH02_0.2-0.25	BH02_0.3-0.35	BH03_0-0.1
				Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00
Compound	CAS Number	LOR	Unit		ES2515873-001	ES2515873-002	ES2515873-003	ES2515873-004	ES2515873-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
^ **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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01_0.05-0.15	BH02_0-0.1	BH02_0.2-0.25	BH02_0.3-0.35	BH03_0-0.1
				Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00
Compound	CAS Number	LOR	Unit		ES2515873-001	ES2515873-002	ES2515873-003	ES2515873-004	ES2515873-005
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >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
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0003**	**0.0003**	<0.0002	<0.0002	**0.0004**
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01_0.05-0.15	BH02_0-0.1	BH02_0.2-0.25	BH02_0.3-0.35	BH03_0-0.1
				Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00
Compound	CAS Number	LOR	Unit		ES2515873-001	ES2515873-002	ES2515873-003	ES2515873-004	ES2515873-005
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01_0.05-0.15	BH02_0-0.1	BH02_0.2-0.25	BH02_0.3-0.35	BH03_0-0.1
				Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00
Compound	CAS Number	LOR	Unit		ES2515873-001	ES2515873-002	ES2515873-003	ES2515873-004	ES2515873-005
					Result	Result	Result	Result	Result
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0003**	**0.0003**	<0.0002	<0.0002	**0.0004**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0003**	**0.0003**	<0.0002	<0.0002	**0.0004**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0003**	**0.0003**	<0.0002	<0.0002	**0.0004**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**66.8**	**69.0**	**72.7**	**71.4**	**68.5**
2-Chlorophenol-D4	93951-73-6	0.5	%		**87.3**	**90.6**	**84.4**	**89.1**	**83.7**
2.4.6-Tribromophenol	118-79-6	0.5	%		**73.7**	**79.3**	**59.1**	**76.3**	**71.6**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**94.2**	**95.4**	**91.8**	**97.0**	**88.2**
Anthracene-d10	1719-06-8	0.5	%		**102**	**104**	**109**	**117**	**100**
4-Terphenyl-d14	1718-51-0	0.5	%		**88.5**	**90.8**	**88.6**	**92.4**	**85.9**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**79.1**	**86.6**	**86.8**	**85.5**	**90.4**
Toluene-D8	2037-26-5	0.2	%		**78.7**	**82.4**	**86.9**	**83.6**	**86.6**
4-Bromofluorobenzene	460-00-4	0.2	%		**92.1**	**89.1**	**93.0**	**87.6**	**92.1**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**105**	**116**	**119**	**116**	**115**
13C8-PFOA	----	0.0002	%		**102**	**108**	**104**	**95.6**	**105**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_01-0.2	BH04_0-0.1	BH04_0.1-0.3	QA100	----
			Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	----
Compound	CAS Number	LOR	Unit	ES2515873-006	ES2515873-007	ES2515873-008	ES2515873-009	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**18.4**	**34.6**	**16.5**	**20.1**	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	**No**	----	----
Asbestos (Trace)	1332-21-4	-	-	**No**	**No**	**No**	----	----
Asbestos Type	1332-21-4	-	--	**-**	**-**	**-**	----	----
Synthetic Mineral Fibre	----	-	--	**No**	**No**	**No**	----	----
Organic Fibre	----	-	--	**No**	**No**	**No**	----	----
Sample weight (dry)	----	0.01	g	**94.6**	**69.4**	**143**	----	----
APPROVED IDENTIFIER:	----	-	--	**J. WILLIAMS**	**J. WILLIAMS**	**J. WILLIAMS**	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	**6**	**6**	**5**	**5**	----
Copper	7440-50-8	5	mg/kg	**57**	**40**	**129**	**146**	----
Lead	7439-92-1	5	mg/kg	**30**	**42**	**96**	**82**	----
Nickel	7440-02-0	2	mg/kg	**2**	**4**	**4**	**4**	----
Zinc	7440-66-6	5	mg/kg	**156**	**152**	**254**	**218**	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	**0.2**	**0.2**	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	**0.6**	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	**1.8**	**1.3**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH03_01-0.2	BH04_0-0.1	BH04_0.1-0.3	QA100	----
				Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	----
Compound	CAS Number	LOR	Unit		ES2515873-006	ES2515873-007	ES2515873-008	ES2515873-009	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	**1.8**	**1.4**	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	**0.7**	**0.6**	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	**0.8**	**0.6**	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	**1.0**	**0.8**	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	**1.0**	**0.8**	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<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	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	**0.7**	**0.6**	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	**8.9**	**6.1**	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	**1.2**	**1.0**	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	**1.5**	**1.2**	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	**1.8**	**1.6**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH03_01-0.2	BH04_0-0.1	BH04_0.1-0.3	QA100	----
				Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	----
Compound	CAS Number	LOR	Unit		ES2515873-006	ES2515873-007	ES2515873-008	ES2515873-009	--------
					Result	Result	Result	Result	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<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	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0002**	**0.0006**	**0.0003**	**0.0002**	----
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	**0.0002**	<0.0002	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH03_01-0.2	BH04_0-0.1	BH04_0.1-0.3	QA100	----
				Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	----
Compound	CAS Number	LOR	Unit		ES2515873-006	ES2515873-007	ES2515873-008	ES2515873-009	--------
					Result	Result	Result	Result	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH03_01-0.2	BH04_0-0.1	BH04_0.1-0.3	QA100	----
				Sampling date / time	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	27-May-2025 00:00	----
Compound	CAS Number	LOR	Unit		ES2515873-006	ES2515873-007	ES2515873-008	ES2515873-009	--------
					Result	Result	Result	Result	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0002**	**0.0006**	**0.0005**	**0.0002**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0002**	**0.0006**	**0.0003**	**0.0002**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0002**	**0.0006**	**0.0005**	**0.0002**	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**67.1**	**75.6**	**76.2**	**72.4**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**87.0**	**88.6**	**90.2**	**85.5**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**68.6**	**80.1**	**76.3**	**71.8**	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**95.8**	**93.4**	**94.8**	**89.9**	----
Anthracene-d10	1719-06-8	0.5	%		**110**	**99.9**	**101**	**97.9**	----
4-Terphenyl-d14	1718-51-0	0.5	%		**92.3**	**88.5**	**90.7**	**87.2**	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**85.0**	**82.7**	**82.9**	**82.4**	----
Toluene-D8	2037-26-5	0.2	%		**84.9**	**83.0**	**83.5**	**83.9**	----
4-Bromofluorobenzene	460-00-4	0.2	%		**94.0**	**93.9**	**94.0**	**95.3**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**113**	**117**	**114**	**109**	----
13C8-PFOA	----	0.0002	%		**111**	**99.9**	**106**	**99.5**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	----	----	----	----
				Sampling date / time	27-May-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2515873-010	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L		<0.02	----	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	----	----	----	----
				Sampling date / time	27-May-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2515873-010	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued									
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	----	----	----	----
				Sampling date / time	27-May-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2515873-010	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**125**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**107**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**115**	----	----	----	----
EP231S: PFAS Surrogate									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	Rinsate	----	----	----	----
				Sampling date / time	27-May-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2515873-010	--------	--------	--------	--------
					Result	----	----	----	----
EP231S: PFAS Surrogate - Continued									
13C4-PFOS	----	0.02	%		**88.8**	**----**	**----**	**----**	**----**
13C8-PFOA	----	0.02	%		**104**	**----**	**----**	**----**	**----**

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	BH01_0.05-0.15 - 27-May-2025 00:00	A soil sample.
EA200: Description	BH02_0-0.1 - 27-May-2025 00:00	A soil sample.
EA200: Description	BH02_0.2-0.25 - 27-May-2025 00:00	A soil sample.
EA200: Description	BH02_0.3-0.35 - 27-May-2025 00:00	A soil sample.
EA200: Description	BH03_0-0.1 - 27-May-2025 00:00	A soil sample.
EA200: Description	BH03_01-0.2 - 27-May-2025 00:00	A soil sample.
EA200: Description	BH04_0-0.1 - 27-May-2025 00:00	A soil sample.
EA200: Description	BH04_0.1-0.3 - 27-May-2025 00:00	A soil sample.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
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	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Inter-Laboratory Testing

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

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

QUALITY CONTROL REPORT

Work Order	: **ES2515873**	Page	: 1 of 15
Client	: **WSP Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: ANDREW JACOVIDES	Contact	: Andrew Wotherspoon
Address	: LEVEL 27 680 GEORGE STREET SYDNEY 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: PS224991	Date Samples Received	: 28-May-2025
Order number	: PS224991	Date Analysis Commenced	: 29-May-2025
C-O-C number	: ----	Issue Date	: 03-Jun-2025
Sampler	: ANDREW JACOVIDES		
Site	: ----		
Quote number	: WSP MSA 2025		
No. of samples received	: 10		
No. of samples analysed	: 10		

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*
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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
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

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: 6614490)									
ES2515873-001	BH01_0.05-0.15	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	8	44.7	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	5	20.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	91	67	30.9	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	220	217	1.5	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	126	106	17.5	0% - 20%
ES2516018-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	21	24.6	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	9	11.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	9	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	14	8.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	58	52	10.8	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6613220)									
EP2508355-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	10.6	11.4	7.2	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6614492)									
ES2515873-002	BH02_0-0.1	EA055: Moisture Content	----	0.1 (1.0)*	%	19.2	18.9	1.6	0% - 50%
ES2516018-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	6.8	6.7	1.8	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6614491)									

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 (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6614491) - continued									
ES2515873-001	BH01_0.05-0.15	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2516018-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6612533)									
ES2515873-001	BH01_0.05-0.15	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6612425)									
ES2515873-001	BH01_0.05-0.15	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2515904-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6612534)									
ES2515873-001	BH01_0.05-0.15	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 Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6612425)									
ES2515873-001	BH01_0.05-0.15	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2515904-001	Anonymous	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: 6612534)									
ES2515873-001	BH01_0.05-0.15	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

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 (%)
EP080: BTEXN (QC Lot: 6612425)									
ES2515873-001	BH01_0.05-0.15	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
ES2515904-001	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
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6612688)									
ES2515537-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0006	0.0006	0.0	No Limit
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2515873-008	BH04_0.1-0.3	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6612688)									
ES2515537-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	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 (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6612688) - continued									
ES2515537-001	Anonymous	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ES2515873-008	BH04_0.1-0.3	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6612688)									
ES2515537-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2515873-008	BH04_0.1-0.3	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	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 (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6612688) - continued									
ES2515873-008	BH04_0.1-0.3	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6612688)									
ES2515537-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2515873-008	BH04_0.1-0.3	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 6616032)									
ES2515535-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.016	0.017	0.0	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.007	0.008	14.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.052	0.049	4.6	No Limit
ES2515839-008	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.004	0.003	39.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.036	0.031	12.5	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6614701)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6614701) - continued									
ES2515554-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2515571-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6612784)									
ES2515913-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2515913-008	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6612784)									
ES2515913-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2515913-008	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 6612784)									
ES2515913-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2515913-008	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	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: 6614490)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	101	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	98.6	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	109	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	105	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	97.7	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	95.8	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	94.7	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6614491)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	84.8	70.0	125
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6612533)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	98.7	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	114	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	102	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	107	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	110	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	121	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	119	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	104	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	113	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	107	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	113	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	113	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	114	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	106	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	116	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6612425)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	94.3	72.2	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6612534)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	98.4	75.0	129

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 Petroleum Hydrocarbons (QCLot: 6612534) - continued								
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	98.3	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	94.9	71.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6612425)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	88.4	72.4	133
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6612534)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	101	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	95.8	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	92.4	63.0	131
EP080: BTEXN (QCLot: 6612425)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	88.0	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	89.6	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	93.6	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	100	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.4	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	89.0	78.8	122
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6612688)								
EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.0005	mg/kg	<0.0005	0.00125 mg/kg	107	70.0	130
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.3	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	68.0	136
EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	70.0	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6612688)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	120	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	115	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.5	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	111	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	64.0	136

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
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6612688) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	117	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6612688)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	122	71.6	129
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	69.8	131
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	122	68.7	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	118	65.1	134
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	76.1	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6612688)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	93.9	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	87.7	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	102	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	114	69.2	143

Sub-Matrix: **WATER**

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
EG020T: Total Metals by ICP-MS (QCLot: 6616032)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	104	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.8	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.3	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.7	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.0	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6614701)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	100	77.0	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6612784)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	76.9	75.0	127

Sub-Matrix: **WATER**

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: 6612784)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	77.4	75.0	127
EP080: BTEXN (QCLot: 6612784)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	90.9	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	90.9	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	91.8	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	99.3	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	99.2	75.5	124
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6612993)								
EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.02	µg/L	<0.02	0.25 µg/L	117	70.0	130
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	113	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	117	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	122	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	98.8	65.0	140
EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.02	µg/L	<0.02	0.25 µg/L	95.6	70.0	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	86.8	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6612993)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	112	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	127	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	82.9	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	106	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	104	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	110	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	105	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	131	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	113	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	126	71.0	132
EP231X: Perfluorohexadecanoic acid (PFHxDA)	67905-19-5	0.05	µg/L	<0.05	0.25 µg/L	118	62.9	136
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6612993)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	80.5	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	122	68.0	141

Sub-Matrix: **WATER**

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
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6612993) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	106	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	108	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	118	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	108	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	91.5	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6612993)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	105	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	100	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	126	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	84.3	71.4	144

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: 6614490)							
ES2515873-001	BH01_0.05-0.15	EG005T: Arsenic	7440-38-2	50 mg/kg	88.6	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.6	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	91.7	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	97.3	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	84.0	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	97.3	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	91.3	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6614491)							
ES2515873-001	BH01_0.05-0.15	EG035T: Mercury	7439-97-6	5 mg/kg	93.2	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6612533)							
ES2515873-001	BH01_0.05-0.15	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	95.0	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	116	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6612425)							
ES2515873-001	BH01_0.05-0.15	EP080: C6 - C9 Fraction	----	32.5 mg/kg	102	60.4	142

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 Petroleum Hydrocarbons (QCLot: 6612534)							
ES2515873-001	BH01_0.05-0.15	EP071: C10 - C14 Fraction	----	480 mg/kg	118	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	102	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	109	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6612425)							
ES2515873-001	BH01_0.05-0.15	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	96.6	61.1	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6612534)							
ES2515873-001	BH01_0.05-0.15	EP071: >C10 - C16 Fraction	----	860 mg/kg	104	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	106	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	113	52.0	132
EP080: BTEXN (QCLot: 6612425)							
ES2515873-001	BH01_0.05-0.15	EP080: Benzene	71-43-2	2.5 mg/kg	86.6	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	86.3	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.3	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	95.9	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.6	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	97.0	61.1	115
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6612688)							
ES2515537-001	Anonymous	EP231X: Perfluoropropane sulfonic acid (PFPrS)	423-41-6	0.00125 mg/kg	104	70.0	130
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	83.5	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00125 mg/kg	109	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	96.2	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00125 mg/kg	113	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	91.4	68.0	136
		EP231X: Perfluorononane sulfonic acid (PFNS)	68259-12-1	0.00125 mg/kg	105	70.0	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00125 mg/kg	92.4	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6612688)							
ES2515537-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	126	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	120	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	117	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	118	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	109	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	103	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	97.2	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	87.2	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	96.1	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	118	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	121	69.0	133

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6612688)							
ES2515537-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	114	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	122	71.6	129
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	112	69.8	131
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	102	68.7	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	104	65.1	134
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	100	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	105	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6612688)							
ES2515537-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	85.1	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	103	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	113	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	84.7	69.2	143

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EG020T: Total Metals by ICP-MS (QCLot: 6616032)							
ES2515535-007	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	111	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	111	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	107	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	107	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	98.9	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	104	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6614701)							
ES2515554-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	97.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6612784)							
ES2515913-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	82.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6612784)							
ES2515913-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	80.7	70.0	130
EP080: BTEXN (QCLot: 6612784)							
ES2515913-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	77.7	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	78.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 6612784) - continued							
ES2515913-002	Anonymous	EP080: Ethylbenzene	100-41-4	25 µg/L	80.2	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	84.5	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	85.0	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	77.9	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2515873**	Page	: 1 of 9
Client	: **WSP Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: ANDREW JACOVIDES	Telephone	: +61-2-8784 8555
Project	: PS224991	Date Samples Received	: 28-May-2025
Site	: ----	Issue Date	: 03-Jun-2025
Sampler	: ANDREW JACOVIDES	No. of samples received	: 10
Order number	: PS224991	No. of samples analysed	: 10

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 Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

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)							
BH01_0.05-0.15	**27-May-2025**	**----**	----	----	**29-May-2025**	10-Jun-2025	✓
Soil Glass Jar - Unpreserved (EA055)							
BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**----**	----	----	**30-May-2025**	10-Jun-2025	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3	**27-May-2025**	**----**	----	----	**30-May-2025**	23-Nov-2025	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**30-May-2025**	23-Nov-2025	✓	**30-May-2025**	23-Nov-2025	✓

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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**30-May-2025**	24-Jun-2025	✓	**02-Jun-2025**	24-Jun-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25	**27-May-2025**	**29-May-2025**	10-Jun-2025	✓	**30-May-2025**	08-Jul-2025	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**29-May-2025**	10-Jun-2025	✓	**31-May-2025**	08-Jul-2025	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**29-May-2025**	10-Jun-2025	✓	**30-May-2025**	10-Jun-2025	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**29-May-2025**	10-Jun-2025	✓	**30-May-2025**	10-Jun-2025	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**29-May-2025**	10-Jun-2025	✓	**30-May-2025**	10-Jun-2025	✓

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
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**30-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	09-Jul-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**30-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	09-Jul-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**30-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	09-Jul-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**30-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	09-Jul-2025	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
BH01_0.05-0.15, BH02_0-0.1, BH02_0.2-0.25, BH02_0.3-0.35, BH03_0-0.1, BH03_01-0.2, BH04_0-0.1, BH04_0.1-0.3, QA100	**27-May-2025**	**30-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	09-Jul-2025	✓

Matrix: **WATER**

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
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
Rinsate	**27-May-2025**	**30-May-2025**	23-Nov-2025	✓	**31-May-2025**	23-Nov-2025	✓

Matrix: **WATER**

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
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
Rinsate	**27-May-2025**	**----**	----	**----**	**02-Jun-2025**	24-Jun-2025	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	**27-May-2025**	**30-May-2025**	10-Jun-2025	✓	**30-May-2025**	10-Jun-2025	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	**27-May-2025**	**30-May-2025**	10-Jun-2025	✓	**30-May-2025**	10-Jun-2025	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
Rinsate	**27-May-2025**	**30-May-2025**	10-Jun-2025	✓	**30-May-2025**	10-Jun-2025	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
Rinsate	**27-May-2025**	**29-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	23-Nov-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
Rinsate	**27-May-2025**	**29-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	23-Nov-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
Rinsate	**27-May-2025**	**29-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	23-Nov-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
Rinsate	**27-May-2025**	**29-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	23-Nov-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
Rinsate	**27-May-2025**	**29-May-2025**	23-Nov-2025	✓	**02-Jun-2025**	23-Nov-2025	✓

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	3	20	**15.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	4	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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) - Continued							
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	15	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**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)
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.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by negative mode LC-ESI-MS/MS using MRM and isotope dilution or internal standard quantitation. A portion of homogenised sample is extracted along with isotope dilution standards (where commercially available) in a solution of ammonium acetate in acetonitrile/methanol. Where relevant, interferences from co-extracted organics are removed using dispersive clean-up media (dSPE). A portion of extract is combined with an equal volume of reagent water and filtered for instrumental analysis.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The 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).

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by solid phase extraction (SPE) followed by negative mode LC-ESI-MS/MS using MRM and isotope dilution or internal standard quantitation. Isotope dilution standards (where commercially available) and surrogates are added to the sample container. The entire contents are transferred to a weak anion exchange (WAX) solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Data quality objectives for internal standard recoveries are based on US EPA method 1633.

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.
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.
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Appendix F

Analytical Tables

TABLE F1
SOIL ANALYIS RESULTS

PS224991
MILTON ULLADULLA HOSPITAL

	Total Petroleum Hydrocarbons												BTEXN							
	TRH C6 - C9 Fraction	TRH C10 - C14 Fraction	TRH C15 - C28 Fraction	TRH C29 - C36 Fraction	TRH+C10 - C36 (Sum of total) (Lab Reported)	TRH+C10 - C40 (Sum of total) (Lab Reported)	TRH C6 - C10 Fraction F1	TRH C6 - C10 Fraction Less BTEX F1	TRH >C10 - C16 Fraction F2	TRH >C10 - C16 Fraction Less Naphthalene F2	TRH >C16 - C34 Fraction F3	TRH >C34 - C40 Fraction F4	Benzene	Toluene	Ethylbenzene	Xylenes (m & p)	Xylene (o)	Xylenes (Sum of total) (Lab Reported)	Naphthalene (VOC)	Total BTEX
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	10	50	100	100	50	50	10	10	50	50	100	100	0.2	0.5	0.5	0.5	0.5	0.5	1	0.2
NEPM 2013 Table 1A(1) HILs Res B Soil																				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0 m to < 1 m								45		110			0.5	160	55			40	3	
NEMP 2023 Table 1B(7) Management Limits, coarse grained soil							700		1000		2500	10000								
PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access																				

Project ID	Field ID	Date	Lab Report Number																	
PS224991	BH01_0.05-0.15	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
PS224991	BH02_0-0.1	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
PS224991	BH02_0.2-0.25	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
PS224991	BH02_0.3-0.35	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
PS224991	BH03_0-0.1	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
PS224991	BH03_01-0.2	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
PS224991	BH04_0-0.1	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
PS224991	BH04_0.1-0.3	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2
PS224991	QA100	27-05-2025	ES2515873	<10	<50	<100	<100	<50	<50	<10	<10	<50	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.2

Statistics

Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND: not detected

Environmental Standards
NEPM 2013 Table 1A(1) HILs Res B Soil
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand
NEMP 2023 Table 1B(7) Management Limits for TPH, residential/parkland/public open space
HEPA, March 2025, PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access

Created by: JP 04-06-2025
Checked by: SPD 06/06/2025

				Polycyclic aromatic hydrocarbons																		
				Acenaphthene	Acenaphthylene	Anthracene	Benz[a]anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(b)&(j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAH (Sum of Common 16 PAHs - Lab Reported)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res B Soil										4												400
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0 m to < 1 m																				3		
NEMP 2023 Table 1B(7) Management Limits, coarse grained soil																						
PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access																						
Project ID	**Field ID**	**Date**	**Lab Report Number**																			
PS224991	**BH01_0.05-0.15**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**0.6**	**1.2**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
PS224991	**BH02_0-0.1**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**0.6**	**1.2**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
PS224991	**BH02_0.2-0.25**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**0.6**	**1.2**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
PS224991	**BH02_0.3-0.35**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**0.6**	**1.2**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
PS224991	**BH03_0-0.1**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**0.6**	**1.2**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
PS224991	**BH03_01-0.2**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**0.6**	**1.2**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
PS224991	**BH04_0-0.1**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**0.6**	**1.2**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
PS224991	**BH04_0.1-0.3**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	**0.7**	**1.0**	**1.2**	**1.5**	**1.8**	**1.0**	**0.7**	*<0.5*	**0.8**	*<0.5*	**1.8**	*<0.5*	**0.5**	*<0.5*	**0.6**	**1.8**	**8.9**
PS224991	**QA100**	**27-05-2025**	**ES2515873**	*<0.5*	*<0.5*	*<0.5*	**0.6**	**0.8**	**1.0**	**1.2**	**1.6**	**0.8**	**0.6**	*<0.5*	**0.6**	*<0.5*	**1.3**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**1.4**	**6.1**
Statistics																						
Number of Detects				**0**	**0**	**0**	**2**	**2**	**2**	**9**	**9**	**2**	**2**	**0**	**2**	**0**	**2**	**0**	**1**	**0**	**1**	**2**	**2**
Maximum Detect				**ND**	**ND**	**ND**	**0.7**	**1**	**1.2**	**1.5**	**1.8**	**1**	**0.7**	**ND**	**0.8**	**ND**	**1.8**	**ND**	**0.5**	**ND**	**0.6**	**1.8**	**8.9**

ND: not detected

Environmental Standards
NEPM 2013 Table 1A(1) HILs Res B Soil
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand
NEMP 2023 Table 1B(7) Management Limits for TPH, residential/parkland/public open space
HEPA, March 2025, PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access

Created by: JP 04-06-2025
Checked by: SPD 06/06/2025

TABLE F1
SOIL ANALYIS RESULTS

				Asbestos					Heavy Metals								PFAS					
				Asbestos (1-Detect or <1-Non-Detect)	Asbestos (Trace)	Synthetic Mineral Fibre	Organic Fibres - Comment	Sample weight (dry)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Perfluorononanesulfonic acid (PFNS)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorodecane sulfonic acid (PFDS)	N-Methyl PFO sulfonamidoethanol (MeFOSE)	N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	Perfluorooctanoic Acid (PFOA)
				-	-	-	-	g	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.1				0.01	5	1	2	5	5	0.1	2	5	0.0002	0.0005	0.0002	0.0005	0.0002	0.0002
NEPM 2013 Table 1A(1) HILs Res B Soil									500	150	500	30,000	1,200	120	1,200	60,000						
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0 m to < 1 m																						
NEMP 2023 Table 1B(7) Management Limits, coarse grained soil																						
PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access																						20
Project ID	**Field ID**	**Date**	**Lab Report Number**																			
PS224991	**BH01_0.05-0.15**	**27-05-2025**	**ES2515873**	**ND**	**ND**	**ND**	**ND**	**98.1**	*<5*	*<1*	**14**	**91**	**220**	*<0.1*	**6**	**126**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	**BH02_0-0.1**	**27-05-2025**	**ES2515873**	**ND**	**ND**	**ND**	**ND**	**66.4**	**12**	*<1*	**18**	**26**	**17**	*<0.1*	**9**	**60**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	**BH02_0.2-0.25**	**27-05-2025**	**ES2515873**	**ND**	**ND**	**ND**	**ND**	**88.1**	**11**	*<1*	**18**	**6**	**6**	*<0.1*	*<2*	**9**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	**BH02_0.3-0.35**	**27-05-2025**	**ES2515873**	**ND**	**ND**	**ND**	**ND**	**81.2**	*<5*	*<1*	**5**	**186**	**15**	*<0.1*	**2**	**34**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	**BH03_0-0.1**	**27-05-2025**	**ES2515873**	**ND**	**ND**	**ND**	**ND**	**66.2**	**5**	*<1*	**10**	**33**	**65**	**0.1**	**5**	**123**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	**BH03_01-0.2**	**27-05-2025**	**ES2515873**	**ND**	**ND**	**ND**	**ND**	**94.6**	*<5*	*<1*	**6**	**57**	**30**	*<0.1*	**2**	**156**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	**BH04_0-0.1**	**27-05-2025**	**ES2515873**	**ND**	**ND**	**ND**	**ND**	**69.4**	*<5*	*<1*	**6**	**40**	**42**	*<0.1*	**4**	**152**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	**BH04_0.1-0.3**	**27-05-2025**	**ES2515873**	**ND**	**ND**	**ND**	**ND**	**143**	*<5*	*<1*	**5**	**129**	**96**	**0.2**	**4**	**254**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	**QA100**	**27-05-2025**	**ES2515873**	-	-	-	-	-	*<5*	*<1*	**5**	**146**	**82**	**0.2**	**4**	**218**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*
Statistics																						
Number of Detects				**8**	**8**	**8**	**8**	**-**	**3**	**0**	**9**	**9**	**9**	**3**	**8**	**9**	**0**	**0**	**0**	**0**	**0**	**0**
Maximum Detect				**0**	**0**	**0**	**0**	**-**	**12**	**ND**	**18**	**186**	**220**	**0.2**	**9**	**254**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

ND: not detected

Environmental Standards
NEPM 2013 Table 1A(1) HILs Res B Soil
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand
NEMP 2023 Table 1B(7) Management Limits for TPH, residential/parkland/public open space
HEPA, March 2025, PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access

Created by: JP 04-06-2025
Checked by: SPD 06/06/2025

	PFAS																					
	Perfluorooctane sulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS (lab reported)	Sum of WA DER PFAS (n=10)	Sum of PFAS	Perfluorobutanoic acid (PFBA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorodecanoic acid (PFDA)	Perfluoropentanoic acid (PFPeA)	Perfluorononanoic acid (PFNA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorobutane sulfonic acid (PFBS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	8:2 Fluorotelomer sulfonic acid (8:2 FTSA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005
NEPM 2013 Table 1A(1) HILs Res B Soil																						
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0 m to < 1 m																						
NEMP 2023 Table 1B(7) Management Limits, coarse grained soil																						
PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access			2																			

Project ID	Field ID	Date	Lab Report Number																			
PS224991	BH01_0.05-0.15	27-05-2025	ES2515873	**0.0003**	*<0.0002*	**0.0003**	**0.0003**	**0.0003**	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*
PS224991	BH02_0-0.1	27-05-2025	ES2515873	**0.0003**	*<0.0002*	**0.0003**	**0.0003**	**0.0003**	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*
PS224991	BH02_0.2-0.25	27-05-2025	ES2515873	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*
PS224991	BH02_0.3-0.35	27-05-2025	ES2515873	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*
PS224991	BH03_0-0.1	27-05-2025	ES2515873	**0.0004**	*<0.0002*	**0.0004**	**0.0004**	**0.0004**	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*
PS224991	BH03_01-0.2	27-05-2025	ES2515873	**0.0002**	*<0.0002*	**0.0002**	**0.0002**	**0.0002**	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*
PS224991	BH04_0-0.1	27-05-2025	ES2515873	**0.0006**	*<0.0002*	**0.0006**	**0.0006**	**0.0006**	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*
PS224991	BH04_0.1-0.3	27-05-2025	ES2515873	**0.0003**	*<0.0002*	**0.0003**	**0.0005**	**0.0005**	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	**0.0002**	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*
PS224991	QA100	27-05-2025	ES2515873	**0.0002**	*<0.0002*	**0.0002**	**0.0002**	**0.0002**	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*

Statistics

Number of Detects	**7**	**0**	**7**	**7**	**7**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Maximum Detect	**0.0006**	**ND**	**0.0006**	**0.0006**	**0.0006**	**ND**	**ND**	**ND**	**ND**	**0.0002**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

ND: not detected

Environmental Standards
NEPM 2013 Table 1A(1) HILs Res B Soil
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand
NEMP 2023 Table 1B(7) Management Limits for TPH, residential/parkland/public open space
HEPA, March 2025, PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access

Created by: JP 04-06-2025
Checked by: SPD 06/06/2025

	PFAS					
	10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	N-Ethyl PFO sulfonamide (EtFOSA)	N-Ethyl PFO sulfonamidoethanol (EtFOSE)	N-Methyl PFO sulfonamide (MeFOSA)	Perfluorooctane sulfonamide (FOSA)	N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002
NEPM 2013 Table 1A(1) HILs Res B Soil						
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand, 0 m to < 1 m						
NEMP 2023 Table 1B(7) Management Limits, coarse grained soil						
PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access						

Project ID	Field ID	Date	Lab Report Number						
PS224991	BH01_0.05-0.15	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	BH02_0-0.1	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	BH02_0.2-0.25	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	BH02_0.3-0.35	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	BH03_0-0.1	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	BH03_01-0.2	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	BH04_0-0.1	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	BH04_0.1-0.3	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*
PS224991	QA100	27-05-2025	ES2515873	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0002*

Statistics

Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**
Maximum Detect	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

ND: not detected

Environmental Standards
NEPM 2013 Table 1A(1) HILs Res B Soil
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand
NEMP 2023 Table 1B(7) Management Limits for TPH, residential/parkland/public open space
HEPA, March 2025, PFAS NEMP 2025 HIL B Residential with minimal opportunity for soil access

Created by: JP 04-06-2025
Checked by: SPD 06/06/2025

		Date	27-05-2025
		Lab Report Number	ES2515873
		Matrix Type	Water
	Unit	EQL	
Total Petroleum Hydrocarbons			
TRH C6 - C9 Fraction	**mg/L**	0.02	*<0.02*
TRH C6 - C10 Fraction F1	**mg/L**	0.02	*<0.02*
TRH C6 - C10 Fraction Less BTEX F1	**mg/L**	0.02	*<0.02*
BTEXN			
Benzene	**mg/L**	0.001	*<0.001*
Toluene	**mg/L**	0.002	*<0.002*
Ethylbenzene	**mg/L**	0.002	*<0.002*
Xylenes (m & p)	**mg/L**	0.002	*<0.002*
Xylene (o)	**mg/L**	0.002	*<0.002*
Xylenes (Sum of total) (Lab Reported)	**mg/L**	0.002	*<0.002*
Naphthalene (VOC)	**mg/L**	0.005	*<0.005*
Total BTEX	**mg/L**	0.001	*<0.001*
Heavy Metals			
Arsenic	**mg/L**	0.001	*<0.001*
Cadmium	**mg/L**	0.0001	*<0.0001*
Chromium	**mg/L**	0.001	*<0.001*
Copper	**mg/L**	0.001	*<0.001*
Lead	**mg/L**	0.001	*<0.001*
Mercury	**mg/L**	0.0001	*<0.0001*
Nickel	**mg/L**	0.001	*<0.001*
Zinc	**mg/L**	0.005	*<0.005*
Per- and polyfluoroalkyl substances (PFAS)			
Perfluorononanesulfonic acid (PFNS)	**ug/L**	0.02	*<0.02*
Perfluoropropanesulfonic acid (PFPrS)	**ug/L**	0.02	*<0.02*
Perfluorodecane sulfonic acid (PFDS)	**ug/L**	0.02	*<0.02*
Perfluoro-n-hexadecanoic acid	**ug/L**	0.05	*<0.05*
N-Methyl PFO sulfonamidoethanol (MeFOSE)	**ug/L**	0.05	*<0.05*
N-methyl-PFO sulfonamidoacetic acid (MeFOSAA)	**ug/L**	0.02	*<0.02*
Perfluorooctanoic Acid (PFOA)	**ug/L**	0.01	*<0.01*
Perfluorooctane sulfonic acid (PFOS)	**ug/L**	0.01	*<0.01*
Perfluorohexane sulfonic acid (PFHxS)	**ug/L**	0.01	*<0.01*
Sum of PFHxS and PFOS (lab reported)	**ug/L**	0.01	*<0.01*
Sum of WA DER PFAS (n=10)	**ug/L**	0.01	*<0.01*
Sum of PFAS	**ug/L**	0.01	*<0.01*
Perfluorobutanoic acid (PFBA)	**ug/L**	0.1	*<0.1*
Perfluorohexanoic acid (PFHxA)	**ug/L**	0.02	*<0.02*
Perfluoroheptanoic acid (PFHpA)	**ug/L**	0.02	*<0.02*
Perfluorodecanoic acid (PFDA)	**ug/L**	0.02	*<0.02*
Perfluoropentanoic acid (PFPeA)	**ug/L**	0.02	*<0.02*
Perfluorononanoic acid (PFNA)	**ug/L**	0.02	*<0.02*
Perfluorotetradecanoic acid (PFTeDA)	**ug/L**	0.05	*<0.05*
Perfluorotridecanoic acid (PFTrDA)	**ug/L**	0.02	*<0.02*
Perfluorododecanoic acid (PFDoDA)	**ug/L**	0.02	*<0.02*
Perfluoroundecanoic acid (PFUnDA)	**ug/L**	0.02	*<0.02*
Perfluoroheptane sulfonic acid (PFHpS)	**ug/L**	0.02	*<0.02*
Perfluoropentane sulfonic acid (PFPeS)	**ug/L**	0.02	*<0.02*
Perfluorobutane sulfonic acid (PFBS)	**ug/L**	0.02	*<0.02*
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	**ug/L**	0.05	*<0.05*

		Date	27-05-2025
		Lab Report Number	ES2515873
		Matrix Type	Water
	Unit	EQL	
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	ug/L	0.05	*<0.05*
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	ug/L	0.05	*<0.05*
10:2 Fluorotelomer sulfonic acid (10:2 FTSA)	ug/L	0.05	*<0.05*
N-Ethyl PFO sulfonamide (EtFOSA)	ug/L	0.05	*<0.05*
N-Ethyl PFO sulfonamidoethanol (EtFOSE)	ug/L	0.05	*<0.05*
N-Methyl PFO sulfonamide (MeFOSA)	ug/L	0.05	*<0.05*
Perfluorooctane sulfonamide (FOSA)	ug/L	0.02	*<0.02*
N-ethyl-PFO sulfonamidoacetic acid (EtFOSAA)	ug/L	0.02	*<0.02*