



**REPORT TO
THE TRUSTEE FOR ST LEONARDS PROPERTY UNIT
TRUST**

**ON
DRYLAND SALINITY AND ACID SULFATE SOIL
ASSESSMENT**

**FOR
PROPOSED BUILT-TO-RENT HOUSING**

**AT
46-52 NICHOLSON STREET & 59-67 CHRISTIE
STREET, ST LEONARDS, NSW**

Date: 9 September 2025
Ref: E37264Brpt2-SAL-SSD

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SEARs Requirements Declaration

Declaration		
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	The undersigned declares that this Dryland Salinity and Acid Sulfate Soil Assessment has been prepared in response to the following SEARs requirements issued for the Project on 31 July 2025 for SSD-88113706.	
SEARs item no.	SEARs Requirement	Relevant Section of this Report
14.	Ground and Water Conditions - Provide an assessment of salinity and acid sulfate soil impacts.	Entire Report.
Signed	 Vittal Boggaram Principal Environmental Engineer	
Dated	9 September 2025	

For and on behalf of
JK ENVIRONMENTS PTY LTD
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ABBREVIATIONS

Australian Height Datum	AHD
Acid Sulfate Soil	ASS
Acid Sulfate Soil Management Advisory Committee	ASSMAC
Acid Sulfate Soil Management Plan	AMP
Below Ground Level	BGL
Borehole	BH
Cation Exchange Capacity	CEC
Calcium	Ca
Cement, Concrete and Aggregates Australia	CCAA
Central Business District	CBD
Chain of Custody	COC
Damp Proof Course	DPC
Department of Infrastructure, Planning and Natural Resources	DIPNR
Department of Land and Water Conservation	DLWC
Dissolved Oxygen	DO
Douglas Partners	DP
Electric Conductivity	EC
Electric Conductivity Extract	ECe
Environmental Impact Statements	EIS
Environmental Resources Management	ERM
Global Positioning System	GPS
JK Environments	JKE
Local Government Authority	LGA
Magnesium	Mg
Monitoring Well	MW
National Association of Testing Authorities	NATA
New South Wales	NSW
Polyvinyl Chloride	PVC
Potassium	K
Potential Acid Sulfate Soil	PASS
Redox Potential	Eh
Salinity Management Plan	SMP
Secretary's Environmental Assessment Requirements	SEARs
Site Assessment Criteria	SAC
Standard Penetration Test	SPT
Standard Sampling Procedure	SSP
Standing Water Level	SWL
State Significant Development Application	SSDA
Sodium	Na
Sulfate	SO ₄
Western Sydney International Airport	WSI
Western Sydney Regional Organisation of Councils	WSROC

Units

deci Siemens per Metre	dS/m
Electrical Conductivity	EC
Exchangeable Sodium Percentage (Sodicity)	ESP%
Grams	g
Hectares	Ha
Kilometers	km
Litres	L
Metres	m



Meters Cubed	m ³
Metres Below Ground Level	mBGL
Millilitres	ml
Milliequivalents	meq
Milligrams per Litre	mg/L
Milligrams per Kilogram	mg/kg
Millimetres	mm
ohm Centimetres	ohm.cm
Parts Per Million	ppm
micro Siemens per Centimetre	µS/cm

1 INTRODUCTION

The Trustee for St Leonards Property Unit Trust ('the client') commissioned JK Environments (JKE) to undertake a dryland salinity and acid sulfate soil (ASS) assessment for the proposed built-to-rent housing development at 46-52 Nicholson and 59-67 Christie Streets, St Leonards, NSW ('the site'). The site location is shown on Figure 1 and the assessment was confined to the site boundaries as shown on Figure 2 attached in appendices.

JKE have previously undertaken a Detailed Site Investigation (DSI) at the site. A Remediation Action Plan (RAP) was prepared based on the results of the DSI. A summary of the investigation and other relevant information is provided in Section 2. This report should be read in conjunction with the DSI and RAP reports.

A geotechnical investigation was previously undertaken by JK Geotechnics (JKG). The results of the geotechnical investigation are presented in a separate report (Ref: Ref: 37263AErpt¹). This report should be read in conjunction with the JKG report.

1.1 Proposed Development Details

A review of the supplied information indicates that the proposed development will comprise demolition of all existing structures, and construction of a 36-storey tower, which will overlie three basement levels. The proposed basements will require excavation to depths of approximately 15m below existing grade. The proposed basements will extend to the north-eastern, south-eastern and south-western site boundaries, and will be set back approximately 26m from the north-western corner of the site, as shown on Figure 2.

1.2 Aim and Objectives

The primary aim of the assessment was to characterise dryland salinity and ASS conditions at the site in the context of the proposed development works. The assessment objectives were to:

- Assess the current site conditions via a site walkover inspection;
- Assess the potential for ASS conditions to be encountered during the proposed development;
- Assess the soil and groundwater salinity conditions via implementation of a preliminary sampling and analysis program; and
- Assess the need for a Salinity Management Plan (SMP) or ASS management plan (ASSMP) if necessary.

1.3 Scope of Work

The RAP was prepared generally in accordance with a JKE proposal (Ref: EP70595B) of 29 November 2024 and written acceptance from the client of 17 December 2024. The scope of work included the following:

- Review of previous relevant investigation reports prepared for the site (prepared by JKE and others);
- Review site information including topography, soils maps, salinity risk maps, ASS risk maps, ASS planning maps, regional geology and hydro-geology in the vicinity of the site;

¹ JKG, (2025). *Report to Coronation Property Co Pty Ltd on Geotechnical Investigation for Proposed Mixed Use Development at 46-52 Nicholson Street & 59-67 Christie street, St Leonards, NSW* (referred to as JKG report)

- A walkover site inspection to identify obvious visual indicators of dryland salinity or potential problem areas;
- Design and implementation of a field sampling and laboratory analysis program;
- Interpretation of the analytical results based on established assessment criteria;
- Preparation of a report presenting the results of the assessment; and
- Assess the need for a site-specific SMP and ASSMP for the proposed development.

Background information on salinity is included in the appendices. The assessment was designed and the report was prepared with reference to regulations/guidelines outlined in the table below. Individual guidelines/documents are also referenced within the text of the report.

Table 1-1: Guidelines

Guidelines/Regulations/Documents
Site Investigations for Urban Salinity (2002) ²
Salinity Code of Practice (2004) ³
Managing Urban Stormwater – Soil and Construction (4 th ed.) (2004) ⁴
Salinity Potential in Western Sydney Map (2002) ⁵
Piling – Design and Installation AS2159-2009 (2009) ⁶
Industry Guide T56: Residential Slabs and Footings in Saline Environments (2018) ⁷
National Acid Sulfate Soils Sampling and Identification Methods Manual (2018) ⁸
National Acid Sulfate Soils Identification and Laboratory Methods Manual (2018) ⁹
Acid Sulfate Soil Manual (1998) ¹⁰

² Department of Land and Water Conservation (DLWC), (2002). *Site Investigations for Urban Salinity*, (referred to as DLWC 2002)

³ Western Sydney Regional Organisation of Councils (WSROC) and Department of Infrastructure, Planning and Natural Resources (DIPNR), (2003 amended 2004). *Western Sydney Salinity Code of Practice* (referred to as Salinity Code of Practice)

⁴ NSW Government/Landcom, (2004). *Managing Urban Stormwater – Soil and Construction*, (4th ed.) (referred to as Blue Book)

⁵ DIPNR, (2002). *1:100,000 Map – Salinity Potential in Western Sydney*, (referred to as Salinity Potential Map)

⁶ Standards Australia, (2009). *Piling – Design and Installation, AS2159-2009* (referred to as AS2159-2009)

⁷ Cement, Concrete and Aggregates Australia (CCAA), (2018). *Industry Guide T56: Residential Slabs and Footings in Saline Environments* (referred to as CCAA 2018)

⁸ Sullivan. L (et al), (2018). *National Acid Sulfate Soils guidance: National acid sulfate soils sampling and identification methods manual*

⁹ Sullivan. L (et al), (2018). *National Acid Sulfate Soils guidance: National acid sulfate soils identification and laboratory methods manual*

¹⁰ Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). *Acid Sulfate Soils Manual* (referred to as ASS Manual 1998)

2 SITE INFORMATION

2.1 Summary of Previous Site Investigations

A summary of previous JKE investigation findings is outlined in the table below:

Table 2-1: Previous information summary

Report	Summary of relevant information
Preliminary (Desktop) Site Investigation, Douglas Partners (DP) 2023.	A desktop PSI (including a site inspection, completed in June 2021) was previously undertaken by Douglas Partners (DP) in 2023, which reviewed relevant information for the site and prepared a preliminary Conceptual Site Model (CSM). The review of historical information noted the site was used for residential purposes until the 1970s, when the current buildings were constructed and the majority utilised for commercial purposes, with a residential building at 59 Christie Street. The desktop PSI report identified Contaminants of Potential Concern (CoPC) and areas of environmental concern (AECs) to include: - Imported fill material associated with levelling and former demolition activities on site. The CoPC associated with this included: heavy metals, total recoverable hydrocarbons (TRHs), monocyclic aromatic hydrocarbons (BTEX), polycyclic aromatic hydrocarbons (PAH), organochlorine pesticides (OCP), polychlorinated biphenyls (PCB), phenols and asbestos; - Potential hazardous material in the existing buildings including asbestos containing material (ACM), synthetic mineral fibres (SMF), lead (in paint), and PCBs; and - Off-site combustible liquid observed at 36 Nicholson Street including TRH, BTEX, PAH, and Volatile Organic Compounds (VOCs). The PSI did not include Per-and polyfluoroalkyl substances (PFAS) as a CoPC associated with dry cleaning businesses although this is an activity associated with potential PFAS contamination. For completeness, PFAS has been included as a CoPC in the updated CSM presented in the DSI. The PSI recommended that an intrusive investigation should be carried out to assess the possible contamination to soils and groundwater (if required).
Hazardous Materials Survey, JBS&G 2013	A Hazmat report was undertaken by JBS&G in 2023, which identified hazardous materials throughout the site in the remaining buildings, including asbestos (friable and non-friable), lead containing dust, lead based paints, Synthetic Mineral Fibres (SMF), PCBs, and others. However, limitations of this report included that some areas were inaccessible and were not inspected, and the scope of sampling was limited.
Detailed Site Investigation (DSI), JKE 2025 ¹¹	The DSI included a review of existing site information, a site inspection, sampling from eight boreholes, and groundwater sampling from three monitoring wells (MW1, MW2, and MW4) as shown on Figure 2. The DP PSI and site walkover identified that the site was occupied by commercial properties, which were developed in the 1970s to replace residential houses with associated yard space. The intrusive investigation undertaken for the DSI encountered fill beneath the pavement in all boreholes and extended to depths of approximately 0.15mBGL to 0.7mBGL. The fill comprised of silty clay, silty sandy clay, silty clayey gravel, and silty sand with inclusions of ironstone, igneous and sandstone gravel, clay nodules, mulch, root fibres and fragments of red brick.

¹¹ JKE, (2025). *Report to The Trustee for St Leonards Property Unit Trust on Detailed Site Investigation (DSI) for Proposed Built-to-Rent Housing at 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW.* (Ref: E37264Brpt-DSI) (referred to as JKE DSI)

Report	Summary of relevant information
	A selection of soil and groundwater samples were analysed for a range of CoPC identified in the CSM. In the fill soil, carcinogenic PAHs exceeded the health-based SAC, and copper, zinc, and TRH F3 exceeded the ecological SAC as shown on Figure 3A. In the groundwater, multiple heavy metal (including copper, mercury, nickel, zinc, and aluminium) exceedances of the health-based and ecological SAC. The groundwater samples also encountered PFOS (a PFAS substance) above the ecological SAC. The SAC exceedances are shown on Figure 3B. The DSI identified a number of data gaps which will required addressing as part of the RAP The DSI concluded that the site can be made suitable for the proposed development by implementing the following recommends: • Preparation of a RAP for the proposed development to address the data gaps identified in the DSI; • Preparation of an asbestos management plan (AMP) for the proposed development; and • Preparation of a validation assessment report for the remediation works undertaken at the site.
Detailed Site Investigation (DSI), JKE 2025 ¹²	The goal of the remediation is to reduce contamination-related risks to human health and the environment, and to render the site suitable for the proposed development from a contamination viewpoint. The aim of the remediation at the site are to mitigate risks from fill soil impacted by contaminants. The objectives of the RAP were to: provide a rationale to support the extent of proposed remediation and the remedial/validation approach; provide a methodology to undertake a pre-remediation DGI; provide a methodology to remediate and validate the site; provide a contingency plan for the remediation works; outline site management procedures to be implemented during remediation work; and provide an unexpected finds protocol (UFP) to be implemented during the development works. The proposed remediation strategies for the contaminated fill includes excavation and off-site disposal of contaminated fill/soil to a suitably licensed landfill. At this stage, remediation of groundwater contamination is limited to treatment of groundwater prior to off-site disposal to the stormwater system during excavation work. The requirement for the long-term management of groundwater will be assessed based on the results of the pre-remediation data gap investigation (DGI) proposed in the RAP. The anticipated sequence of remediation works is outlined in Section 5 of the RAP. Remediation will occur concurrently with the development works and this should be considered by the consent authority so that the conditions in the development approval/consent align with the sequence of works and requirements of the RAP. The RAP stated that the site can be made suitable for the proposed development via remediation and the implementation of the RAP. A site validation report is to be prepared on completion of remediation activities and submitted to the consent authority to demonstrate that the site is suitable for the proposed development following completion of remediation/validation. Capping contamination on-site is not the preferred approach. However, the RAP acknowledges that it may not be possible to remove all fill from the setback areas around the basement. Therefore, the RAP has provided a framework for remediating these areas via a 'cap and contain' approach. This will trigger a need for further reporting and preparation/implementation of a long-term environmental management plan (EMP).

¹² JKE, (2025). *Report to The Trustee for St Leonards Property Unit Trust on Remediation Action Plan for Proposed Built-to-Rent Housing at 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW.* (Ref: E37264Brpt3-RAP) (referred to as JKE RAP)

2.2 Site Identification

Table 2-2: Site Identification

Site Address:	46-52 Nicholson and 59-67 Christie Streets, St Leonards, NSW
Lot & Deposited Plan:	46 Nicholson Street, Lot 11 DP654462 (vacant); 48 Nicholson Street, Lot A DP334878 (vacant); 50 Nicholson Street, SP54127 (Nature Care College, partially vacant); 65 Christie Street and 52 Nicholson Street, Lot 2 DP945933 (vacant); 67 Christie Street, SP18047 (Evoke, Talkin Golf Promotions, partly vacant); 63 Christie Street, Lot 2 DP528060 (Pharm Engage); 59 Christie Street, Lot 1 DP949064 (vacant); 61 Christie Street, Lot B DP334878 (Nature Care College);
Current Land Use:	Commercial and Residential
Proposed Land Use:	Mixed-use development
Local Government Authority (LGA):	Lane Cove Municipal Council
Site Area (Ha) (approx.):	2,300
RL (AHD in m) (approx.):	72-78
Geographical Location (decimal degrees) (approx. north-east corner of site):	Latitude: -33.82448 Longitude: 151.19606
Site Plans:	Appendix A

2.3 Site Location and Regional Setting

The site is located in a predominantly residential and commercial area of St Leonards and is bound by Nicholson Street to the north and east, and Christie Street to the west as shown on Figure 1. The site is located approximately 790m north-east of Berry's Creek which serves Gore Cove Reserve and also links to Balls Head Bay.

2.4 Topography

The regional topography is characterised by a north facing hillside that falls towards the south-west, and the highest elevation across the site is in the east. The DP PSI noted that site levels ranged from approximately 72m Australian Height Datum (AHD) to 78mAHD, sloping towards the south-west.

2.5 Site Inspection

A walkover inspection of the site was undertaken by JKE on 2 May 2025 as part of the DSI. The inspection was limited to accessible areas of the site and was focussed on assessing the site conditions relevant to ASS

and salinity-related factors only. Selected site photographs obtained during the inspection are attached in the appendices.

At the time of the inspection the site was occupied by multiple commercial buildings constructed from metal, brick, glass and concrete, with underground basement levels, situated on a slope towards the south-west. Small landscaped areas were also noted at the front of some properties, including No. 50 Nicholson Street and No. 67 Christie Street (along the entrance to the north), No. 63 Christie Street, and 61 Christie Street. All vegetation inspected appeared to be in good condition with no obvious evidence of phytotoxic stress or die back. Areas of scalding or widespread erosion was not encountered at the site during the inspection.

2.6 Surrounding Land Use

During the site inspection, JKE observed the following land uses in the immediate surrounds:

- North – Intersection of Nicholson Street and Christie Street, high-rise commercial and residential building, Pacific Highway, and commercial areas and residential dwellings;
- South – Mixed commercial and residential land use, comprising cafes, gyms, offices, early learning centres, and residential apartments;
- East – Multi-storey construction site, Pacific Highway, and commercial properties;
- West – Early learning centre, a Mastercard bank, and residential apartments.

3 GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology and Soils

Regional geological information reviewed for the DSI indicated that the site is underlain by Ashfield Shale of the Wianamatta Group, which typically consists of black to dark grey shale and laminite.

The report indicates that the site is located within the Blacktown soil landscape. Blacktown soils are characterised by moderate erodibility with some higher local occurrences, low dispersivity and localised areas of moderate salinity.

3.2 Salinity Hazard Map

The site is not located within an area identified within the salinity hazard map.

3.3 Acid Sulfate Soil Risk and Planning

The site is not located in an ASS risk area according to the risk maps prepared by the Department of Land and Water Conservation.

ASS information presented in the Lotsearch report indicated that the site is not located within an ASS risk area mapped under the council local environmental plan (LEP).

The Atlas of Australian Acid Sulfate Soils identified that the site was located in a Class C area, with an 'extremely low probability' of ASS occurrence (1-5% chance of occurrence with occurrence in small localised areas). A Class B area is located approximately 740m north, with a 'low probability' of ASS occurrence (6-70% chance of occurrence).

3.4 Hydrogeology

Hydrogeological information presented in the Lotsearch report (attached in the appendices) indicated that the regional aquifer on-site and in the areas immediately surrounding the site includes porous, extensive aquifers of low to moderate productivity. There was a total of two registered bores within the report buffer of 1,000m, and are located up-gradient of the site. In summary:

- The nearest registered bore was located approximately 570m to the north from the site. This was utilised for water supply purposes;
- The second bore was registered for water supply purposes and located approximately 880m to the north-west of the site; and
- The drillers log information from the closest registered bores typically identified fill and/or clay and sandy clay to depths of approximately 3.10-5.10mBGL, underlain by sandstone bedrock. Standing water levels (SWLs) in the bores ranged from 335mBGL to 648mBGL.

The information reviewed for the assessment indicates that the subsurface conditions at the site are likely to consist of relatively low permeability (residual) soils overlying shallow bedrock. The potential for viable groundwater abstraction and use of groundwater under these conditions is considered to be low. There is a

reticulated water supply in the area and consumption of groundwater is not expected to occur. Use of groundwater is not proposed as part of the development.

Considering the local topography and surrounding land features, JKE anticipate groundwater to flow towards the south-west.

3.5 Receiving Water Bodies and Surface Water Run-off

Surface water bodies were not identified in the immediate vicinity of the site. The closest surface water body is Berry's Creek located approximately 790m to the south-west of the site. This water body is not considered as a potential receptor due to its distance from the site. However, groundwater discharge into the stormwater during temporary construction dewatering has the potential to enter into the creek.

4 SAMPLING AND ANALYSIS PLAN

4.1 Soil Salinity Sampling

The soil sampling plan and methodology adopted for this investigation is outlined in the table below:

Table 4-1: Soil Sampling Plan and Methodology

Aspect	Input
Sampling Density	The assessment included soil sampling from three boreholes BH1, BH2 and BH4 drilled for the JKG geotechnical investigation as shown on Figure 2. Due to site access constraints, some of the sampling locations were placed close to the site boundaries. This density is equivalent to approximately 2-4 sampling points per hectare (the area of the site is approximately 0.23 hectares) and meets the requirements recommended in the DLWC 2002 document for 'moderately intensive construction'. The density was considered adequate to identify large areas of salinity impacted soils at the site. Soil sampling was confined to a maximum depth of approximately 4.6mBGL. This was considered adequate as the site is not located in a dryland salinity risk area.
Set-out and Sampling Methods	Fieldwork for the assessment was undertaken between 11 January and 6 May 2025. Sampling locations were set out using a Differential GPS (DGPS) unit with an accuracy of approximately 50mm. Locations were cleared for underground services prior to drilling. The sample locations were drilled using a truck mounted hydraulically operated drill rig equipped with spiral flight augers. Soil samples were obtained from a Standard Penetration Test (SPT) sampler or directly from the auger when conditions did not allow use of the SPT sampler. Soil samples were collected from the fill and natural profiles encountered during the investigation based on distinct change in lithology or field observations. All samples were recorded on the borehole logs attached in the appendices.
Sample Collection	Samples were placed in plastic bags and sealed using twist ties. Sampling personnel used disposable nitrile gloves during sampling activities. The samples were labelled with the job number, sampling location, sampling depth and date. On completion of the fieldwork, the samples were delivered in the insulated sample container to a NATA registered laboratory for analysis under standard COC procedures. Field sampling protocols adopted for this assessment are summarised in the appendices.

4.2 Groundwater Sampling

A summary of the sampling/screening methodology is presented in the following table:

Table 4-2: Groundwater Sampling Plan and Methodology

Aspect	Input
Sampling Plan	Groundwater monitoring wells were installed in boreholes BH1 (MW1), BH2 (MW2) and BH4 (MW4) drilled for the JKG geotechnical investigation. The well locations are shown on Figure 2 attached in the appendices. The wells were positioned to establish baseline groundwater conditions at the site. Considering the topography and the location of the nearest down-gradient water body, MW1 and MW4 were considered to be in the up-gradient area of the site and would be expected to provide an indication of groundwater flowing onto (beneath) the site from the north. MW2 was considered

Aspect	Input
	to be in the down-gradient area of the site and would be expected to provide an indication of groundwater flowing across (beneath) the site and beyond the down-gradient site boundary.
Monitoring Well Installation Procedure	The monitoring well construction details are documented on the appropriate borehole logs attached in the appendices. The monitoring wells were installed to depths of approximately 18.3mBGL to 24.4mBGL below ground level. The wells were generally constructed as follows: • 50mm diameter Class 18 PVC (machine slotted screen) was installed in the lower section of the well to intersect groundwater; • 50mm diameter Class 18 PVC casing was installed in the upper section of the well (screw fixed); • A 2mm sand filter pack was used around the screen section for groundwater infiltration; • A hydrated bentonite seal/plug was used on top of the sand pack to seal the well; and • A gatic cover was installed at the surface with a concrete plug to limit the inflow of surface water. The monitoring well installation, including the screen lengths, were considered suitable for assessment of general groundwater quality with regards to Table 5 in Schedule B2 of NEPM 2013.
Monitoring Well Development	The monitoring wells were developed on 2 May 2025 using a submersible electrical pump/foot valve pump. Due to the hydrogeological conditions, groundwater inflow into the wells was relatively low, therefore the wells were pumped until they were effectively dry. The field monitoring records and calibration data are attached in the appendices.
Groundwater Sampling	The monitoring wells were allowed to recharge after development. Groundwater samples were obtained on 25 June 2025. Prior to sampling, the monitoring wells were checked for the presence of Light Non-Aqueous Phase Liquids (LNAPLs) using an inter-phase probe electronic dip meter. The monitoring well head space was checked for VOCs using a calibrated PID unit. The samples were obtained using a micro-purge low flow sampler/disposable plastic bailer. During sampling, the following parameters were monitored using calibrated field instruments: • Standing water level (SWL) using an electronic dip meter; and • pH, temperature, electrical conductivity (EC), dissolved oxygen (DO) and redox potential (Eh) using a YSI Multi-probe water quality meter. Steady state conditions were considered to have been achieved when the difference in the pH measurements was less than 0.2 units, the difference in conductivity was less than 10%, and when the SWL was not in drawdown. Groundwater samples were obtained directly from the single use PVC tubing and placed in the sample containers. Duplicate samples were obtained by alternate filling of sample containers. This technique was adopted to minimise disturbance of the samples and loss of volatile contaminants associated with mixing of liquids in secondary containers, etc. Groundwater removed from the wells during development and sampling was transported to JKE in jerry cans and stored in holding drums prior to collection by a licensed waste water contractor for off-site disposal. The field monitoring record and calibration data are attached in the appendices.
Decontaminant and Sample Preservation	During development, the pump was flushed between monitoring wells with potable water (single-use tubing was used for each well). The pump tubing was discarded after each sampling event and replaced therefore no decontamination procedure was considered necessary.

Aspect	Input
	Rinsate samples were obtained during the decontamination process as part of the field QA/QC. The samples were preserved with reference to the analytical requirements and placed in an insulated container with ice or ice bricks. On completion of the fieldwork, the samples were temporarily stored in a fridge at the JKE office, before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard COC procedures.

4.3 Laboratory Analysis

Soil and groundwater samples were Analysed by Envirolab Services (NATA Accreditation Number – 2901). Reference should be made to the laboratory reports attached in the appendices for further information regarding the laboratory methods used. JKE note that the laboratory reports also include contamination results which are summarised in the DSI report.

Selected soil samples for dryland salinity assessment were analysed for the following:

- EC, pH, resistivity;
- Texture and ECe;
- Sulphate and Chloride; and
- Cation Exchange Capacity (CEC).

Groundwater samples were analysed for EC, pH, sulphate and chloride.

5 SITE ASSESSMENT CRITERIA (SAC)

5.1 Soil Salinity and Plant Growth

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

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

Table 5-1: Plant Response to Soil Salinity

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

Note:

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

5.2 Soil pH and Plant Growth

Soil pH is a measure of the acidity or alkalinity of the soils and values have been assessed as an indicator of soil fertility with respect to plant growth. The optimal pH for plant growth is between 5.5 and 7. Beyond this range, effective revegetation of exposed soil following disturbance is increasingly difficult and the potential for erosion is considered to increase.

Highly alkaline soils are commonly associated with saline and sodic soil conditions and can limit the ability of plants to take up water and nutrients. Highly acidic soils exhibit aluminium toxicity toward plants and can limit the ability of plants to take up other essential nutrients including molybdenum.

Interpretation of soil pH with respect to plant growth is undertaken using the ratings published in Bruce and Rayment (1982)¹³ presented below:

Table 5-2: Plant Response to Soil pH

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

¹³ Bruce, R.C. and Rayment, G.E., (1982). *Analytical Methods and Interpretations used by the Agricultural Chemistry Branch for Soil and Land Use Surveys*, (referred to as Bruce and Rayment 1982)

5.3 Cation Exchange Capacity (CEC) in Soil

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

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

Metson (1961)¹⁴ developed a set of ratings for effective CEC and the most abundant cations. These are summarised below (values are in meq/100g):

Table 5-3: CEC Rating

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

5.3.1 Ratio of Exchangeable Calcium to Magnesium

To maintain soil structure there should be a ratio of around 4:1 to 6:1 calcium to magnesium for a balanced soil (Eckert 1987)¹⁵. At ratios of less than 4:1 calcium is considered to be deficient, whilst at ratios of greater than 6:1 are considered to be magnesium deficient.

5.4 Exchangeable Sodium Percentage or Sodicity (ESP%)

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

Normally the sodium content is expressed as a percentage of the CEC as other cations counteract the negative effects of sodium (known as ESP% and termed sodicity). The effect of the exchangeable sodium (exchangeable sodium percentage, ESP) varies with other soil factors such as the type of clay, the relative quantity of magnesium and the quantity of organic matter. However, Charman & Murphy (2000)¹⁶ indicate that a soil is generally considered sodic if the ESP exceeds 6% and extremely sodic if the ESP exceeds 15%.

¹⁴ Metson, A.J., (1961). *Methods of Chemical Analysis for Soil Survey Samples* (referred to as Metson 1961)

¹⁵ Eckert, D.J., (1987) *Soil Test Interpretation: Basic Cation Saturation Ratios and Sufficiency Levels* (referred to as Eckert 1987)

¹⁶ Charman, P.E.V and Murphy, B.W (eds), (2000). *Soils: Their Management and Properties*, (referred to as Charman and Murphy 2000)

5.5 Groundwater Salinity

EC values in groundwater are dependent on numerous factors and can vary with changes in temperature and pH conditions. Suttar (1990¹⁷) has classed water into different types based on EC values as outlined in the table below.

Table 5-4: EC Ranges in Water

Water Type	EC (µS/cm)
Deionised Water	0.5 – 3
Pure Rainwater	<15
Freshwater Rivers	0 – 800
Marginal River Water	800 – 1600
Brackish Water	1600 – 4800
Saline Water	>4800
Seawater	51,500
Industrial Waters	100 – 10,000

5.6 Recommendations for Concrete Slabs and Footings in Saline Soils

In the absence of endorsed recommendations for buildings in saline environments, reference is made to the CCAA 2018. The guide provides recommendations on the minimum concrete grade/strength required for slabs and footings in saline soils. Reference should be made to the CCAA 2018 publication for further information:

Table 5-5: Minimum Concrete Grade for Slabs and Footings in Saline Soils

ECe (dS/m)	Salinity Class	Concrete Grade ¹
<2	Non-saline	N20
2-4	Slightly saline	N20
4-8	Moderately saline	N25
8-16	Very saline	N32
>16	Highly saline	≥N40

Note:

1 - Concrete Grade for Salinity Class has been adopted from CCAA 2018

5.7 Recommendations for Durability with Reference to AS2159-2009

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

¹⁷ Suttar, S., (1990). *Ribbons of Blue Handbook*, Scitech, Victoria (referred to as Suttar 1990)

Table 5-6: Exposure Classification for Concrete Piles

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

Notes:

1 - High permeability soils (e.g. sands and gravels) which are in groundwater

2 – Low permeability soils (e.g. silts and clays) or all soils above groundwater

Table 5-7: Exposure Classification for Steel Piles

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

Notes:

1 - High permeability soils (e.g. sands and gravels) which are in groundwater

2 – Low permeability soils (e.g. silts and clays) or all soils above groundwater

6 RESULTS

6.1 Subsurface Conditions

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

Table 6-1: Summary of Subsurface Conditions

Profile	Description
Pavement	Concrete pavement was encountered at the surface at BH1, BH2, BH3, BH7, and BH8, at varying thicknesses from approximately 0.11m to 0.15m.
Fill	Fill was encountered at the surface or beneath the pavement in all boreholes and extended to depths of approximately 0.15m to 0.7mBGL. BH5, BH7 and BH8 were terminated in the fill at a maximum depth of approximately 0.7mBGL. The fill typically comprised silty clay, silty sandy clay, silty clayey gravel, and silty sand with inclusions of ironstone, igneous and sandstone gravel, clay nodules, mulch, root fibres and fragments of red brick. No odours or staining were recorded in the fill soils during fieldwork.
Natural Soil	Natural silty clay residual soils were encountered beneath the fill in selected boreholes and extended to depths of approximately 1.9m to 3.4mBGL. No odours or staining were recorded in the natural soils during fieldwork.
Bedrock	Siltstone and/or sandstone bedrock was encountered beneath the natural soils in BH1, BH2 and BH4, from depths of approximately 1.9m to 4.5mBGL.
Groundwater	Groundwater seepage was not encountered in the boreholes during auger drilling. The SWL recoded in the monitoring wells is summarised below.

6.2 Salinity Results

The laboratory results are compared to the relevant SAC in the attached report tables. Interpretation of the results against the SAC is provided in the following table.

Table 6-2: Interpretation of Laboratory Results

Parameter	Notes
Soil Salinity and Plant Growth	The EC results ranged from 42 μ S/cm to 200 μ S/cm. The ECe results were all <2dS/m. All of the samples were classed as non-saline.
Soil Resistivity	The soil resistivity results ranged from 5000 ohm.cm to 23,810 ohm.cm. The results were used to assess potential aggression to steel foundations as outlined below.
Soil pH and Plant Growth	The soil pH results ranged from 4.4 to 8.2 and are classed as extremely acidic to moderately alkaline. The majority of the surficial soils were generally within the strongly to very strongly alkaline for plant growth. The acidic conditions generally increased with depth. The proposed excavations will expose acidic soils, and may require treatment with lime or gypsum in order to make the soils suitable for plant growth.

Parameter	Notes
CEC in Soil	The CEC values ranged from 1.2meq/100g to 23meq/100g in the very low to high range. The majority of the samples were within the low to moderate range which is typical of the soil formation encountered at the site and are generally indicative of the low levels of organic matter within the soils.
Ratio of Calcium to Magnesium	The results indicate that the soils have more calcium than magnesium. The CEC of the soil is generally low to moderate. Lime and gypsum can be used to stabilise the soil which will improve soil structure for both engineering and fertility purposes.
ESP%	The ESP% values of the samples ranged from 0.4% to 8.3%. The only one sample of the ESP results were above the 6% threshold and were classed as Sodic.
Groundwater Salinity	The laboratory results ranged from 1300 $\mu\text{S}/\text{cm}$ to 2100 $\mu\text{S}/\text{cm}$ indicate that the groundwater is generally saline and within the 'brackish' water type.
Concrete Slabs and Footings in Saline Soils (CCAA 2018)	The proposed earthworks are anticipated to expose soils generally classed as non-saline. The results should be assessed by the project design team as applicable for the proposed development. Reference should also be made to AS2159-2009 for minimum concrete strengths and reinforcement cover for concrete piles/foundations.
Soil Conditions for Exposure Classification (AS2159-2009)	The boreholes drilled for the investigation have indicated that the subsurface conditions at the site generally comprise of low permeability soils (i.e. silts and clays). Based on this, the exposure classification outlined under 'Soil Conditions B' has been adopted for the assessment.
Exposure Classification for Concrete Piles/Foundations (AS2159-2009)	The soil pH and sulphate results indicate that the soils are generally mildly aggressive to moderately aggressive towards buried concrete. The results indicate that soils are moderately aggressive towards buried concrete. The groundwater pH, sulphate and chloride results indicate that the groundwater is mildly aggressive towards buried concrete. The results should be assessed by the project design team as applicable for the proposed development.
Exposure Classification for Steel Piles/Foundations (AS2159-2009)	The soil resistivity, pH and chloride results indicate that the soils are non- aggressive towards buried steel. The groundwater pH and chloride results indicate that the groundwater is non-aggressive towards buried steel. The results should be assessed by the project design team as applicable for the proposed development.

7 CONCLUSIONS

7.1 ASS Conditions

A review of the above results indicates that, there is a very low potential for ASS materials to be disturbed during the proposed development works. This conclusion is based on the following:

- The ASS risk mapping indicates that the site is located within an area of no known occurrence of ASS;
- The borehole logs for the investigation indicate the site is underlain by fill soils and/or residual soils over siltstone and/or sandstone bedrock. ASS materials are not usually associated with residual soil profiles;
- No visible or olfactory indications of ASS were encountered during the investigation;
- The regional geological information indicates that the site is underlain by Ashfield Shale of the Wianamatta Group; and
- The site is located at approximately 72-78m AHD, with excavations to up to approximately 57-63mBGL. ASS materials are not usually associated with soil horizons above 5-15m AHD.

Based on the results, further intrusive investigation and/or an ASSMP is not considered necessary for the proposed development.

7.2 Salinity Conditions

The investigation identified the following salinity conditions:

- The soils are classed as extremely acidic to moderately alkaline;
- The soils tested are all classes as non-saline;
- The soils are generally sodic;
- The soils are moderately aggressive towards buried concrete;
- The soils are non-aggressive towards buried steel;
- The groundwater is classed as saline;
- The groundwater is mildly aggressive towards buried concrete; and
- The groundwater is non-aggressive towards buried steel.

Based on the results, JKE is of the opinion that a SMP is not required for the proposed development. The design team should take into consideration the aggressive soil and groundwater conditions towards concrete foundation during the design of the proposed structures.

8 LIMITATIONS

The report limitations are outlined below:

- Salinity is a natural phenomenon and can change over time based on site conditions and climatic variations. Changes to existing drainage patterns can also impact the salinity at the site. The results outlined in this report are a snapshot of conditions present at the time of the investigation and is bound to change over time;
- JKE accepts no responsibility for any unidentified salinity issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
- JKE accepts no responsibility for non-compliance of salinity management recommends outlined in this report;
- This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the JKE proposal; and terms of contract between JKE and the client (as applicable);
- The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
- Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes;
- The investigation and preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
- Where information has been provided by third parties, JKE has not undertaken any verification process, except where specifically stated in the report;
- JKE has not undertaken any assessment of off-site areas that may be potential salinity sources or may have been impacted by adverse salinity conditions, except where specifically stated in the report;
- JKE accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
- JKE have not and will not make any determination regarding finances associated with the site;
- Additional investigation work may be required in the event of changes to the proposed development or land use. JKE should be contacted immediately in such circumstances;
- Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a salinity viewpoint, and vice versa;
- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose;
- Copyright in this report is the property of JKE. JKE has used a degree of care, skill and diligence normally exercised by consulting professionals in similar circumstances and locality. No other warranty expressed or implied is made or intended. Subject to payment of all fees due for the investigation, the client alone shall have a licence to use this report;



-
- If the client, or any person, provides a copy of this report to any third party, such third party must not rely on this report except with the express written consent of JKE; and
 - Any third party who seeks to rely on this report without the express written consent of JKE does so entirely at their own risk and to the fullest extent permitted by law, JKE accepts no liability whatsoever, in respect of any loss or damage suffered by any such third party.

Important Information About This Report

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

The Report is based on a Unique Set of Project Specific Factors

This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

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

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

Changes in Subsurface Conditions

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

This Report is based on Professional Interpretations of Factual Data

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

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

Assessment Limitations

The assessment is designed to identify major salinity risks at the site. Implementing the management recommends can minimise the risks. No assessment can identify all risks as salinity is a natural phenomenon which can change over time. Even a rigorous professional assessment may not detect all potential salinity impacts on a site. Salinity may be present in areas that were not surveyed or sampled, or may accumulate in areas which showed no signs of salinity when sampled.

Misinterpretation of Site Assessments by Design Professionals

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

Logs Should not be Separated from the Assessment Report

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

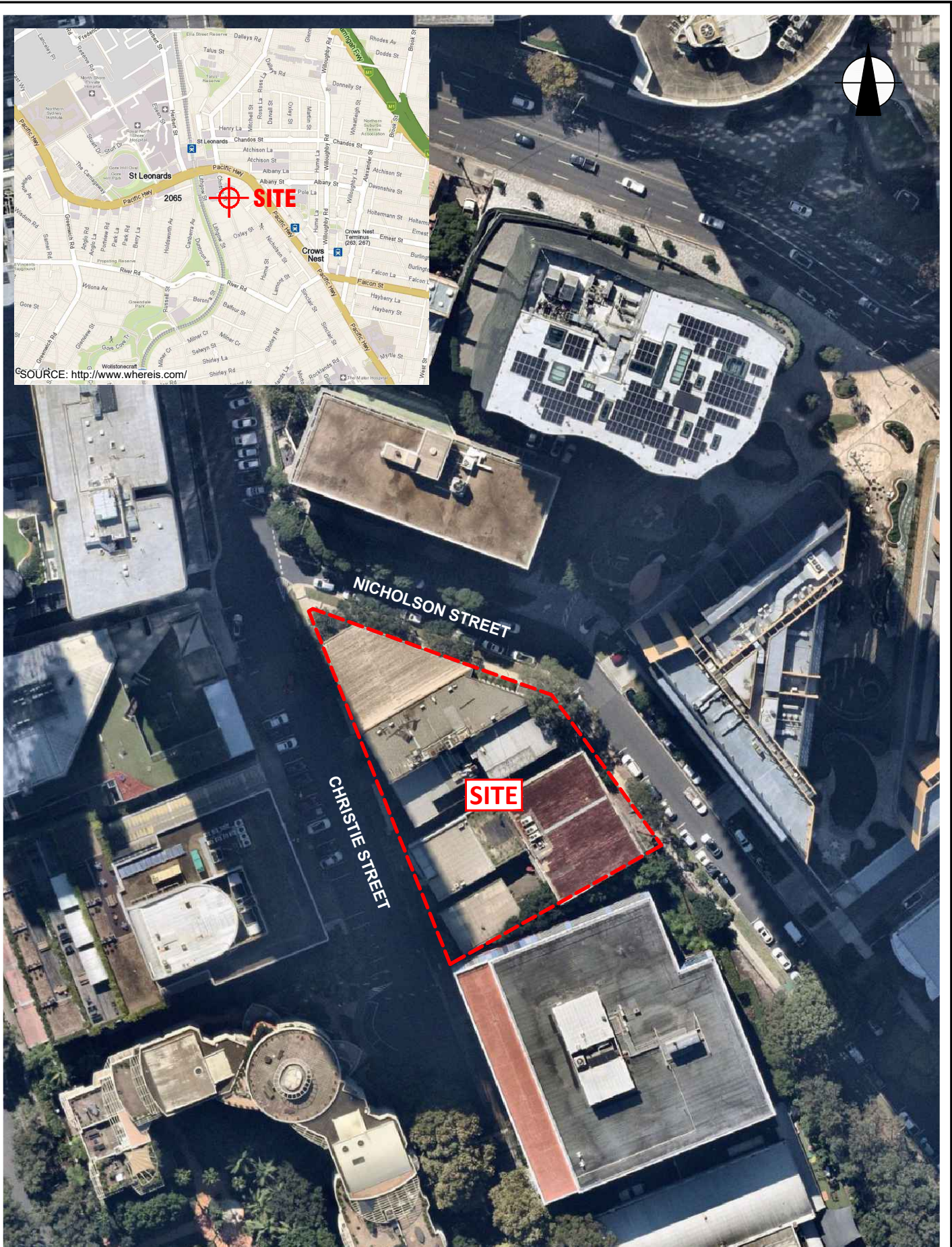
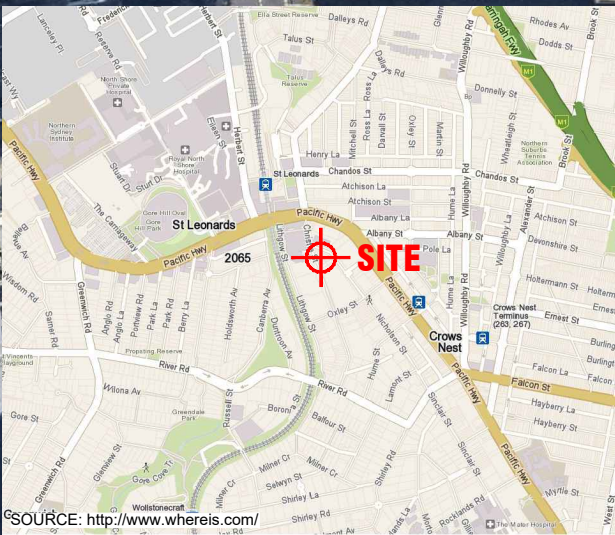
To reduce the likelihood of borehole and test pit log misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information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

Read Responsibility Clauses Closely

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



Appendix A: Report Figures



AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

Title:

SITE LOCATION PLAN

Location:

46-50 NICHOLSON STREET AND
59-67 CHRISTIE STREET, ST LEONARDS, NSW

Project No:

E37264B

Figure No:

1

This plan should be read in conjunction with the Environmental report.

JKEnvironments



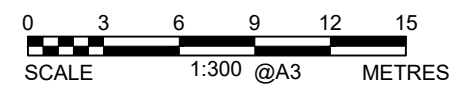
PLOT DATE: 31/07/2025 9:55:11 AM DWG FILE: K:\SC EIS JOBS\37000\SE\37264B ST LEONARDS\CAD\E37264B.DWG



LEGEND

- APPROXIMATE SITE BOUNDARY
- BH(Fill Depth) BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m)
- + BH/MW(Fill Depth) BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION, NUMBER AND DEPTH OF FILL (m)

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM



This plan should be read in conjunction with the Environmental report.

Title:

SAMPLE LOCATION PLAN

Location: 46-50 NICHOLSON STREET AND
59-67 CHRISTIE STREET, ST LEONARDS, NSW

Project No: E37264B

Figure No: 2

JKEnvironments





Appendix B: Selected Site Photographs

Project Ref: E37264B

Site Address: 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW

Selected Site Photos Dated: 22 January and 30 April 2025



Photograph 1: Overview of the site from the intersection of Nicholson Street and Christie Street to the north-west.



Photograph 2: Overview of 50 Nicholson Street along the eastern boundary, and the laneway towards Christie Street.



Photograph 3: Overview of the laneway between Nicholson Street and Christie Street from the west, and the undercroft parking.



Photograph 4: The undercroft parking area along the lane between Nicholson Street and Christie Street.



Photograph 5: Overview of 46-48 Nicholson Street from the south-east.



Photograph 6: Lower basement level of 46-48 Nicholson Street (along the south-eastern boundary of the site)



Photograph 7: Overview of 59 Christie Street and rear access.



Photograph 8: Rear courtyard of 59 Christie Street.



Photograph 9: Overview of 63, 65, and 67 Christie Street along the western boundary.



Appendix C: Laboratory Results Summary Tables

ABBREVIATIONS AND EXPLANATIONS FOR SALINITY TABLES

Abbreviations used in the Tables:

Ca	Calcium
CEC	Cation Exchange Capacity
DO	Dissolved Oxygen
EC	Electrical Conductivity
ECe	Extract Electrical Conductivity
Eh	Redox Potential
ESP	Exchangeable Sodium Percentage (Each Na/CEC)
K	Potassium
Mg	Magnesium
Na	Sodium
SWL	Standing Water Level

Units used in the Tables

°C	Degrees Celsius
dS/m	deciSiemens per metre
m	meters
meq/100g	milliequivalents per 100 grams
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
mV	millivolts
ohm.cm	ohm centimetre
µS/cm	microSiemens per centimetre

Notes on Specific Tables

SUMMARY OF SOIL LABORATORY RESULTS - EC and ECe

- The salinity Class has been adopted from 'Site Investigations for Urban Salinity' DLWC 2002.
- The chart function assumes an ECe value of 1.9 for values that are less than the practical quantitation limit.

SUMMARY OF RESISTIVITY CALCULATION ON SOIL EC RESULTS

- The resistivity values have been calculated on the laboratory EC values.
- The classification has been derived from the Australian Standard 2159-2009 Piling Design and Installation (Table 6.5.2 [A] & [C])
- Table 6.5.2 [A] of Australian Standard 2159-2009 recommends using a Moderate Exposure Classification for Steel Piles in Fresh Water - Soft Running Water

SUMMARY OF SOIL LABORATORY RESULTS - pH

- The pH Classification has been derived from the Australian Standard 2159-2009 Piling Design and Installation (Tables 6.4.2 [C] & 6.5.2 [C])
- Table 6.5.2 [A] of Australian Standard 2159-2009 recommends using a Moderate Exposure Classification for Steel Piles in Fresh Water - Soft Running Water

SUMMARY OF SOIL LABORATORY RESULTS - SULFATE & CHLORIDES

- The classification has been derived from the Australian Standard 2159-2009 Piling Design and Installation (Table 6.5.2 [A] & [C])
- The chart function assumes an concentration of 0.5mg/kg for values that are less than the practical quantitation limit.

SUMMARY OF SOIL LABORATORY RESULTS - CEC & ESP

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

SUMMARY OF GROUNDWATER LABORATORY RESULTS

- The classification has been derived from the Australian Standard 2159-2009 Piling Design and Installation (Table 6.5.2 [A] & [C]) .
- Table 6.4.2 [A] recommends using a Mild Exposure Classification for Concrete Piles in Fresh Water - Treat as in Soil Condition 'A'.
- Table 6.5.2 [A] recommends using a Moderate Exposure Classification for Steel Piles in Fresh Water - Soft Running Water.

TABLE A
SUMMARY OF SOIL LABORATORY RESULTS - EC and ECe

Borehole Number	Sample Depth (m)	Sample Description	EC ($\mu\text{S}/\text{cm}$)	ECe (dS/m)	Salinity Class
BH1	0.15-0.3	Silty Clay	140	<2	NON SALINE
BH1	0.5-0.9	Silty Clay	110	<2	NON SALINE
BH1	0.5-0.9	LAB DUPLICATE	110	<2	NON SALINE
BH1	1.8-2.0	Silty Clay	55	<2	NON SALINE
BH1	2.5-2.7	Siltstone	77	<2	NON SALINE
BH2	0.15-0.3	F: Silty Clay	140	<2	NON SALINE
BH2	0.8-1	Silty Clay	110	<2	NON SALINE
BH2	1.4-1.5	Silty Clay	77	<2	NON SALINE
BH2	1.7-1.9	Silty Clay	75	<2	NON SALINE
BH4	0-0.1	F: Silty Sandy Clay	200	<2	NON SALINE
BH4	0.7-1	Silty Clay	67	<2	NON SALINE
BH4	1.8-2	Silty Clay	42	<2	NON SALINE
BH4	4.5-4.6	XW Sandstone	42	<2	NON SALINE
Total Number of Samples			13	13	-
Minimum Value			42	<PQL	-
Maximum Value			200	<PQL	-

ECe Values (dS/m)

Salinity Class

<2	NON SALINE
2 to 4	SLIGHTLY SALINE
4 to 8	MODERATELY SALINE
8 to 16	VERY SALINE
>16	HIGHLY SALINE

TABLE B
SUMMARY OF RESISTIVITY CALCULATION ON SOIL EC RESULTS

Borehole Number	Sample Depth (m)	Sample Description	EC ($\mu\text{S}/\text{cm}$)	Resistivity (ohm.cm)	Classification Condition B
BH1	0.15-0.3	Silty Clay	140	7,143	Non Aggressive
BH1	0.5-0.9	Silty Clay	110	9,091	Non Aggressive
BH1	0.5-0.9	LAB DUPLICATE	110	9,091	Non Aggressive
BH1	1.8-2.0	Silty Clay	55	18,182	Non Aggressive
BH1	2.5-2.7	Siltstone	77	12,987	Non Aggressive
BH2	0.15-0.3	F: Silty Clay	140	7,143	Non Aggressive
BH2	0.8-1	Silty Clay	110	9,091	Non Aggressive
BH2	1.4-1.5	Silty Clay	77	12,987	Non Aggressive
BH2	1.7-1.9	Silty Clay	75	13,333	Non Aggressive
BH4	0-0.1	F: Silty Sandy Clay	200	5,000	Non Aggressive
BH4	0.7-1	Silty Clay	67	14,925	Non Aggressive
BH4	1.8-2	Silty Clay	42	23,810	Non Aggressive
BH4	4.5-4.6	XW Sandstone	42	23,810	Non Aggressive
Total Number of Samples			13	13	-
Minimum Value			42	5,000	-
Maximum Value			200	23,810	-

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

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

TABLE C SUMMARY OF SOIL LABORATORY RESULTS - pH					
Borehole Number	Sample Depth (m)	Sample Description	pH	Classification for Concrete Piles Condition B	Classification for Steel Piles Condition B
BH1	0.15-0.3	Silty Clay	5.7	Non-Aggressive	Non-Aggressive
BH1	0.5-0.9	Silty Clay	4.5	Moderately Aggressive	Non-Aggressive
BH1	0.5-0.9	LAB DUPLICATE	4.4	Moderately Aggressive	Non-Aggressive
BH1	1.8-2.0	Silty Clay	4.6	Mildly Aggressive	Non-Aggressive
BH1	2.5-2.7	Siltstone	4.7	Mildly Aggressive	Non-Aggressive
BH2	0.15-0.3	F: Silty Clay	6.8	Non-Aggressive	Non-Aggressive
BH2	0.8-1	Silty Clay	4.7	Mildly Aggressive	Non-Aggressive
BH2	1.4-1.5	Silty Clay	4.6	Mildly Aggressive	Non-Aggressive
BH2	1.7-1.9	Silty Clay	4.5	Moderately Aggressive	Non-Aggressive
BH4	0-0.1	F: Silty Sandy Clay	8.2	Non-Aggressive	Non-Aggressive
BH4	0.7-1	Silty Clay	5.8	Non-Aggressive	Non-Aggressive
BH4	0.7-1	LAB DUPLICATE	5.6	Non-Aggressive	Non-Aggressive
BH4	1.8-2	Silty Clay	6.9	Non-Aggressive	Non-Aggressive
BH4	4.5-4.6	XW Sandstone	5.6	Non-Aggressive	Non-Aggressive
Total Number of Samples			14	-	-
Minimum Value			4.4	-	-
Maximum Value			8.2	-	-
Classification is based on Soil condition 'B' - low permeability soils (e.g. silts & clays) or all soils above groundwater.					
Classification for Concrete Piles		pH Value		Classification for Steel Piles	
>5.5	Non-Aggressive	>5	Non-Aggressive		
4.5 - 5.5	Non-Aggressive	4.0 - 5.0	Non-Aggressive		
4 - 4.5	Mildly Aggressive	3.0 - 4.0	Mildly Aggressive		
<4	Moderately Aggressive	<3	Moderately Aggressive		

TABLE D SUMMARY OF SOIL LABORATORY RESULTS - SULPHATE & CHLORIDES						
Borehole Number	Sample Depth (m)	Sample Description	Chloride (mg/kg)	Sulphate (mg/kg)	Classification for Concrete Piles	Classification for Steel Piles
					Sulfate - Condition B	Chloride - Condition B
BH1	0.15-0.3	Silty Clay	72	170	Non-Aggressive	Non-Aggressive
BH1	0.5-0.9	Silty Clay	100	77	Non-Aggressive	Non-Aggressive
BH1	0.5-0.9	LAB DUPLICATE	98	71	Non-Aggressive	Non-Aggressive
BH1	1.8-2.0	Silty Clay	21	61	Non-Aggressive	Non-Aggressive
BH1	2.5-2.7	Siltstone	10	120	Non-Aggressive	Non-Aggressive
BH2	0.15-0.3	F: Silty Clay	<10	36	Non-Aggressive	Non-Aggressive
BH2	0.8-1	Silty Clay	20	100	Non-Aggressive	Non-Aggressive
BH2	1.4-1.5	Silty Clay	10	71	Non-Aggressive	Non-Aggressive
BH2	1.7-1.9	Silty Clay	10	81	Non-Aggressive	Non-Aggressive
BH4	0-0.1	F: Silty Sandy Clay	93	46	Non-Aggressive	Non-Aggressive
BH4	0.7-1	Silty Clay	24	48	Non-Aggressive	Non-Aggressive
BH4	0.7-1	LAB DUPLICATE	20	41	Non-Aggressive	Non-Aggressive
BH4	1.8-2	Silty Clay	<10	56	Non-Aggressive	Non-Aggressive
BH4	4.5-4.6	XW Sandstone	<10	58	Non-Aggressive	Non-Aggressive
Total Number of Samples			14	14	-	-
Minimum Value			<PQL	36	-	-
Maximum Value			100	170	-	-
Classification is based on Soil condition 'B' - low permeability soils (e.g. silts & clays) or all soils above groundwater.						
Sulfate Values		Classification for Concrete Piles	Chloride Values		Classification for Steel Piles	
<5,000		Non-Aggressive	<5,000		Non-Aggressive	
5,000 - 10,000		Mildly Aggressive	5,000 - 20,000		Non-Aggressive	
10,000 - 20,000		Moderately Aggressive	20,000 - 50,000		Mildly Aggressive	
>20,000		Severely Aggressive	>50,000		Moderately Aggressive	

TABLE E
SUMMARY OF SOIL LABORATORY RESULTS - CEC & ESP

Borehole Number	Sample Depth (m)	Sample Description	Exchangeable Ca	Exchangeable K	Exchangeable Mg (meq/100g)	Exchangeable Na	CEC	ESP %	Ca:Mg
BH1	0.15-0.3	Silty Clay	4.5	0.2	0.8	0.2	5.8	3.4%	5.63:1
BH1	1.8-2.0	Silty Clay	0.6	0.2	0.5	<0.1	1.2	8.3%	1.2:1
BH2	0.15-0.3	F: Silty Clay	20	0.9	1.2	0.1	23	0.4%	16.67:1
BH2	0.15-0.3	LAB DUPLICATE	21	0.9	1.2	0.1	23	0.4%	17.5:1
BH4	0-0.1	F: Silty Sandy Clay	16	0.2	0.8	<0.1	17	0.6%	20.0:1
Total Number of Samples			5	5	5	5	5	5	5
Minimum Value			0.60	0.20	0.50	<PQL	1.2	0.4%	1.2 :1
Maximum Value			21.00	0.90	1.20	0.20	23.0	8.3%	20.0 :1
ESP Value < 5% 5% to 15% > 15% Sodicity Rating Non-Sodic Sodic Highly Sodic									

TABLE G
SUMMARY OF GROUNDWATER LABORATORY RESULTS

Sample Reference	Field Measurements						Laboratory Results				Classification for Concrete Piles Soil Condition B	Classification for Steel Piles Soil Condition B
	SWL (m)	pH	EC (μS/cm)	Temp (°C)	Eh (mV)	DO (mg/L)	pH	EC (μS/cm)	Sulfate (mg/L)	Chloride (mg/L)		
MW1	12.7	5.4	1,715	18.2	107.6	0.52	6.0	2,100	60	400	Non-Aggressive	Non-Aggressive
MW2	14.5	5.1	990	14.3	106.4	2.23	5.5	1,300	55	250	Mildly Aggressive	Non-Aggressive
MW4	14.4	6.8	1,019	15.4	72.7	17.32	6.7	1,300	35	280	Non-Aggressive	Non-Aggressive
Total Number of Samples	7	7	7	7	7	7	7	7	7	7	-	-
Minimum Value	12.7	5.1	990	14.3	72.7	0.52	5.5	1,300	35	250	-	-
Maximum Value	14.5	6.8	1,715	18.2	107.6	17.32	6.7	2,100	60	400	-	-
Exposure Classification for Concrete Piles Classification is based on Soil condition 'B' - low permeability soils (e.g. silts and clays) or all soils above groundwater.							pH	Sulfate (mg/L)	Chloride (mg/L)	Classification B		
							> 5.5	<1,000	<6,000	Non-Aggressive		
							4.5 - 5.5	1,000 - 3,000	6,000 - 12,000	Mildly Aggressive		
							4.0 - 4.5	3,000 - 10,000	12,000 - 30,000	Moderately Aggressive		
							< 4	>10,000	>30,000	Severely Aggressive		
Exposure Classification for Steel Piles Classification is also based on Soil condition 'B' - low permeability soils (e.g. silts and clays) or all soils above groundwater.							pH	Chloride (mg/L)	Classification B			
							> 5	<1,000	Non-Aggressive			
							4.0 - 5.0	1,000 - 10,000	Non-Aggressive			
							3.0 - 4.0	10,000 - 20,000	Mildly Aggressive			
							<3	>20,000	Moderately Aggressive			



Appendix D: Background on Salinity



Background on Salinity

A. General Information on Salinity

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

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

B. Salinity and Urban Development

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

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

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

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

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

of the existing vegetation, further reducing the hydrological load on the groundwater system and resulting in further groundwater table rises.

C. Potential Salinity Impacts on Urban Development

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

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

D. Soils and Groundwater Planning Strategy in Western Sydney

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

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

1. A water management strategy should be prepared to address the following:
 - Reduction of potable water usage onsite;
 - Development of best practice measures for stormwater reuse for open space irrigation;
 - Reduction of potable water demand;
 - Reduction of adverse impacts on local groundwater regimes;
 - Reduction of change in local flow regimes; and
 - Preparation of water maintenance and a monitoring management system.
2. A salinity management plan should be prepared that includes a groundwater management strategy related to:
 - Adoption of small landscaped areas to reduce irrigation requirements;
 - Use of native and other low water requirement plants;
 - Use of mulch cover (not in drainage lines);
 - Use of low flow watering facilities for landscaped areas;
 - Implementation of a tree planting program, especially in high recharge areas, of native, deep rooted, large growing species to assist retention of the groundwater at existing levels;



-
- Retention of existing native tree cover where possible; and
 - Not permitting infiltration pits or tanks to disperse surface water.
3. An assessment of soil and rock conditions at the site, including erosion, expansive and dispersive soil conditions, and plant growth potential should be undertaken.
 4. Use of the Blue Book (2004) as a guide to prepare soil and water management plans. The approved plan and subsequent works are to be supervised by appropriately qualified experienced personnel.



Appendix E: Information on Acid Sulfate Soils

A. Background

Acid Sulfate Soil (ASS) is formed from iron rich alluvial sediments and sulfate (found in seawater) in the presence of sulfate reducing bacteria and plentiful organic matter. These conditions are generally found in mangroves, salt marsh vegetation or tidal areas and at the bottom of coastal rivers and lakes. ASS materials are distinguished from other soil or sediment materials (referred to as 'soil materials' throughout the National Acid Sulfate Soils Guidance) by having properties and behaviour that have either:

- 1) Been affected considerably by the oxidation of Reduced Inorganic Sulfur (RIS), or
- 2) The capacity to be affected considerably by the oxidation of their RIS constituents.

Acid sulfate soil materials include potential acid sulfate soils (PASS or sulfidic soil materials) and actual acid sulfate soils (AASS or sulfuric soil materials). These are often found in the same profile, with AASS overlying PASS. PASS and AASS are defined further below:

- PASS are soil materials which contain RIS such as pyrite. The field pH of these soils in their undisturbed state is usually more than pH 4 and is commonly neutral to alkaline (pH 7–9). These soil materials are invariably saturated with water in their natural state. Their texture may be peat, clay, loam, silt or sand and is often dark grey in colour and soft in consistence, but these materials may also exhibit colours that are dark brown, or medium to pale grey to white; and
- AASS are soil materials which contained RIS such as pyrite that have undergone oxidation. This oxidation results in low pH (that is pH less than 4) and often a yellow (jarosite) and/or orange to red mottling (ferric iron oxides) in the soil profile. Actual ASS contains Actual Acidity, and commonly also contains RIS (the source of Potential Sulfuric Acidity) as well as Retained Acidity.

B. The ASS Planning Maps

The ASS planning maps provide an indication of the relative potential for disturbance of ASS to occur at locations within the council area. These maps do not provide an indication of the actual occurrence of ASS at a site or the likely severity of the conditions.

The maps are divided into five classes dependent upon the type of activities/works that if undertaken, may represent an environmental risk through the development of acidic conditions associated with ASS:

Table 1: Risk Classes

Risk Class	Description
Class 1	All works.
Class 2	All works below existing ground level and works by which the water table is likely to be lowered.
Class 3	Works at depths beyond 1m below existing ground level or works by which the water table is likely to be lowered beyond 1m below existing ground level.
Class 4	Works at depths beyond 2m below existing ground level or works by which the water table is likely to be lowered beyond 2m below existing ground level.
Class 5	Works within 500m of adjacent Class 1, 2, 3, 4 land which are likely to lower the water table below 1m AHD on the adjacent land.

C. The ASS Risk Maps

The ASS risk maps provide an indication of the probability of occurrence of ASS materials at a particular location based on interpretation from geological and soil landscape maps. The maps provide classes based on high probability, low probability, no known occurrence and areas of disturbed terrain (site specific assessment necessary) and the likely depth at which ASS materials are likely to be encountered.

D. Interpretation of ASS Field Tests

Tables A1 and A2 below provide some guidance on the interpretation of pH_F and pH_{FOX} test results, as detailed in the *National Acid Sulfate Soil Guidance: National acid sulfate soils sampling and identification methods manual* (2018):

Table A1: Interpretation of some pH_F test ranges

pH value	Result	Comments
$pH_F \leq 4$, jarosite not observed in the soil layer/horizon	May indicate an AASS indicating previous oxidation of RIS or may indicate naturally occurring, non ASS soils.	Generally not conclusive as naturally occurring, non ASS soils, such as many organic soils (for example peats) and heavily leached soils, often also return $pH_F \leq 4$.
$pH_F \leq 4$, jarosite observed in the soil layer/horizon	The soil material is an AASS.	Jarosite and other iron precipitate minerals in ASS such as schwertmannite require a $pH < 4$ to form and indicate prior oxidation of RIS.
$pH_F > 7$	Expected in waterlogged, unoxidised, or poorly drained soils.	Marine muds commonly have a $pH > 7$ which reflects a seawater ($pH\ 8.2$) influence. Oxidation of samples with H_2O_2 can help indicate if the soil materials contain RIS.

Source: Adapted from DER (2015a).

Table A2: Interpretation of pH_{FOX} test results

pH value and reaction	Result	Comments
Strong reaction of soil with H_2O_2 (that is X or V)	Useful indicator of the presence of RIS but cannot be used alone	Organic rich substrates such as peat and coffee rock, and soil constituents like manganese oxides, can also cause a reaction. Care must be exercised in interpreting these results. Laboratory analyses are required to confirm if appreciable RIS is present.
pH_{FOX} value at least one unit below field pH_F and strong reaction with H_2O_2 (that is X or V)	May indicate PASS	The difference between pH_F and pH_{FOX} is termed the ΔpH . Generally the larger the ΔpH the more indicative of PASS. The lower the final pH_{FOX} the better the likelihood of an appreciable RIS content. For example, a change from pH_F of 8 to pH_{FOX} of 7 (that is a ΔpH of 1) would not indicate PASS, however, a unit change from pH_F of 3.5 to pH_{FOX} of 2.5 would be indicative of PASS. Laboratory analyses are required to confirm if appreciable RIS is present.
$pH_{FOX} < 3$, large ΔpH and a strong reaction with H_2O_2 (that is X or V)	Strongly indicates PASS	The lower the pH_{FOX} below 3, the greater the likelihood that appreciable RIS is present. A combination of all three parameters – pH_{FOX} , ΔpH and reaction strength – gives the



pH value and reaction	Result	Comments
		best indication of PASS. Laboratory analyses are required to confirm that appreciable RIS is present.
A pH _{FOX} 3–4 and Low, Medium or Strong reaction with H ₂ O ₂	Inconclusive	RIS may be present; however, organic matter may also be responsible for the decrease in pH. Laboratory analyses are required to confirm the presence of RIS.
pH _{FOX} 4–5	Inconclusive	RIS may be present in small quantities, or poorly reactive under rapid oxidation, or the sample may contain shell/ carbonate which neutralises some or all acid produced on oxidation. Equally, the pH _{FOX} value may be due to the production of organic acids with no RIS present. Laboratory analyses are required to confirm if appreciable RIS is present.
pH _{FOX} > 5, small or no ΔpH, but Low, Medium or Strong reaction with H ₂ O ₂	Inconclusive	For neutral to alkaline pH with shell or white concretions, the fizz test with 1 M HCl can be used to identify the presence of carbonates. Laboratory analyses are required to confirm if appreciable RIS is present and further testing is required to confirm that effective self-neutralising materials are present.

Source: Adapted from DER (2015a).



Appendix F: Lotsearch Environmental Risk and Planning Report



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 19 Dec 2024 10:23:40

Reference: LS070190 EP

**Address: 46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW
2065**

Disclaimer:

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

Dataset Listing

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

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	03/12/2024	03/12/2024	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	21/05/2024	21/05/2024	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority NSW	21/11/2024	08/11/2024	Monthly	1000m	0	0	2
Contaminated Land Records of Notice	Environment Protection Authority NSW	21/11/2024	21/11/2024	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority NSW	21/11/2024	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority NSW	30/10/2024	30/10/2024	Monthly	1000m	0	0	4
National Waste Management Facilities Database	Geoscience Australia	29/04/2024	29/11/2022	Annually	1000m	0	0	3
National Liquid Fuel Facilities	Geoscience Australia	16/10/2024	07/09/2020	Annually	1000m	0	0	2
EPA PFAS Investigation Program	Environment Protection Authority NSW	18/11/2024	14/06/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Australian Department of Defence	02/12/2024	28/10/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Australian Department of Defence	02/12/2024	28/10/2024	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	02/12/2024	02/12/2024	Monthly	2000m	0	0	0
Defence Controlled Areas	Australian Department of Defence	22/10/2024	22/10/2024	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Australian Department of Defence	18/11/2024	02/09/2022	Quarterly	2000m	0	0	1
National Unexploded Ordnance (UXO)	Australian Department of Defence	22/10/2024	22/10/2024	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority NSW	28/11/2024	15/12/2022	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority NSW	26/11/2024	26/11/2024	Monthly	1000m	0	0	9
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority NSW	26/11/2024	26/11/2024	Monthly	1000m	0	0	4
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority NSW	26/11/2024	26/11/2024	Monthly	1000m	0	0	9
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	100m	26	580	580
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	100m	-	64	64
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	250m	0	27	182
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	250m	-	20	34
Points of Interest	NSW Department of Customer Service - Spatial Services	19/11/2024	19/11/2024	Quarterly	1000m	0	1	94
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/11/2024	19/11/2024	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/11/2024	19/11/2024	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	21/11/2024	21/11/2024	Quarterly	1000m	0	0	7
State Forest	Forestry Corporation of NSW	18/12/2024	11/11/2024	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Geoscience Australia	17/04/2024	19/08/2019	Annually	1000m	1	1	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2024	NSW Department of Climate Change, Energy, the Environment and Water	11/11/2024	28/06/2024	Quarterly	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	28/05/2024	20/06/2023	Annually	2000m	0	0	27
NSW Seamless Geology Single Layer: Rock Units	NSW Department of Primary Industries and Regional Development	17/05/2024	01/05/2024	Annually	1000m	1	1	2
NSW Seamless Geology Single Layer: Geological Boundaries and Faults	NSW Department of Primary Industries and Regional Development	17/05/2024	01/05/2024	Annually	1000m	0	0	0
NSW Seamless Geology Single Layer: Trendlines	NSW Department of Primary Industries and Regional Development	17/05/2024	01/05/2024	Annually	1000m	0	0	0
NSW Seamless Geology Single Layer: Fold Axes	NSW Department of Primary Industries and Regional Development	17/05/2024	01/05/2024	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Department of Regional NSW	26/04/2024	14/03/2024	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	12/01/2024	17/02/2011	Annually	1000m	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Climate Change, Energy, the Environment and Water	18/12/2024	27/07/2020	Annually	1000m	1	1	6
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Housing and Infrastructure	20/11/2024	18/10/2024	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	12/01/2024	21/02/2013	Annually	1000m	1	1	2
Dryland Salinity - National Assessment	Australian Bureau of Agricultural and Resource Economics and Sciences	03/06/2024	24/05/2024	Annually	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service	21/11/2024	21/11/2024	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Regional NSW	21/11/2024	21/11/2024	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Regional NSW	21/11/2024	21/11/2024	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Regional NSW	21/11/2024	21/11/2024	Monthly	1000m	7	7	7
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Housing and Infrastructure	20/11/2024	08/09/2023	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Housing and Infrastructure	20/11/2024	08/11/2024	Monthly	1000m	1	5	163
Commonwealth Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	23/10/2024	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	23/10/2024	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	25/11/2024	06/09/2024	Quarterly	1000m	0	0	4
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Housing and Infrastructure	20/11/2024	08/11/2024	Monthly	1000m	0	0	137
Bush Fire Prone Land	NSW Rural Fire Service	21/11/2024	19/07/2024	Monthly	1000m	0	0	2
NSW Native Vegetation Type Map	NSW Department of Climate Change, Energy, the Environment and Water	27/11/2024	08/11/2024	Quarterly	1000m	1	1	9
Ramsar Wetlands of Australia	Australian Department of Climate Change, Energy, the Environment and Water	16/05/2024	11/04/2024	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	0	0
NSW BioNet Species Sightings	NSW Department of Climate Change, Energy, the Environment and Water	10/09/2024	10/09/2024	Monthly	10000m	-	-	-

Site Diagram

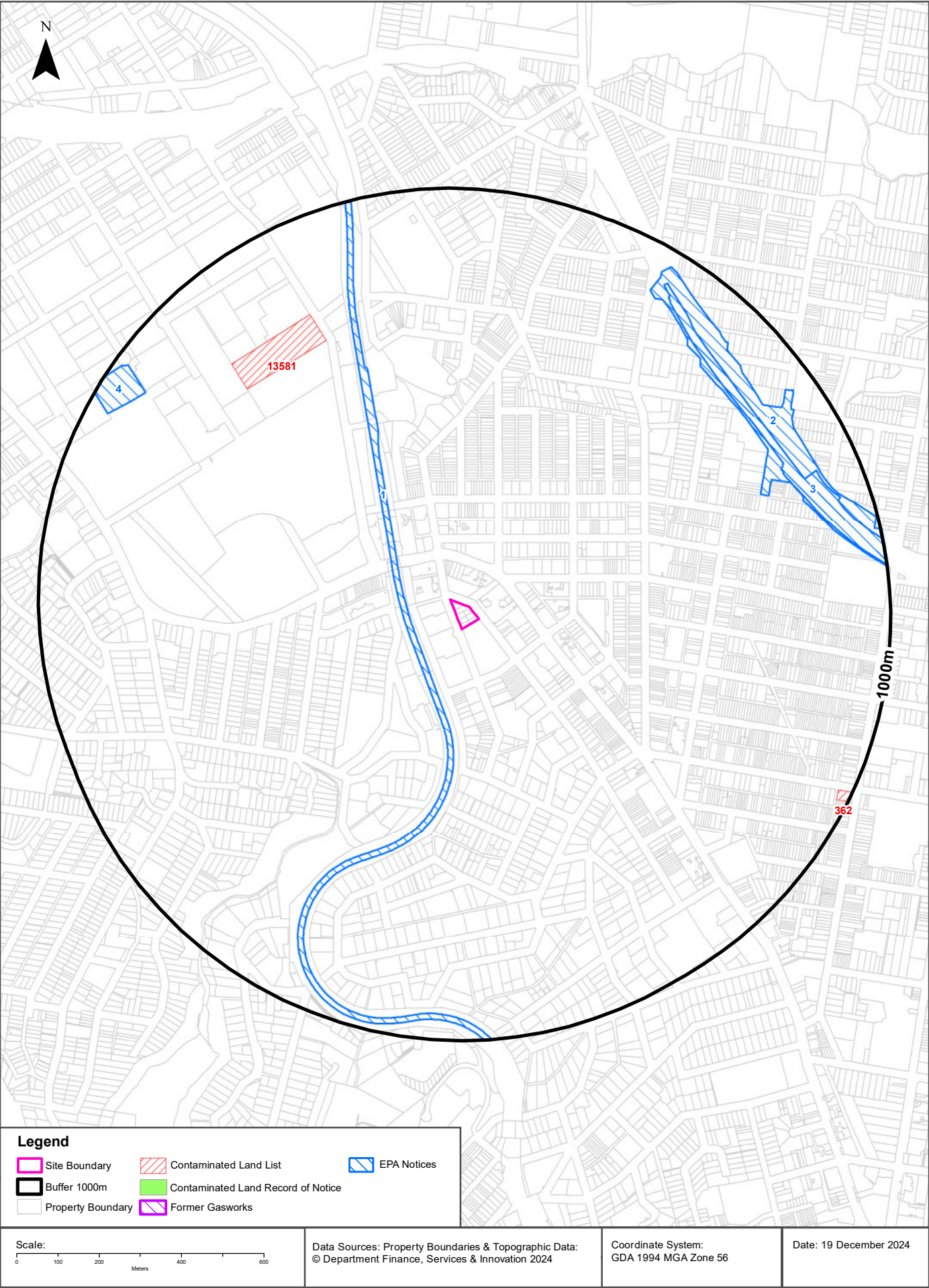
46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Legend Site Boundary Internal Parcel Boundaries	Total Area: 2301m ² Total Perimeter: 211m	
	Scale: 01020 Meters	
	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024	
	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 December 2024

Contaminated Land

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Contaminated Land

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
13581	Telstra Data Centre	4A Herbert STREET	ST LEONARDS	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	695m	North West
362	Caltex Service Station	111-121 Falcon Street	Crows Nest	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	964m	South East

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Contaminated Land

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the dataset buffer:

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

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

Contaminated Land

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

EPA Notices

Penalty Notices, s.91 & s.92 Clean up Notices and s.96 Prevention Notices within the dataset buffer:

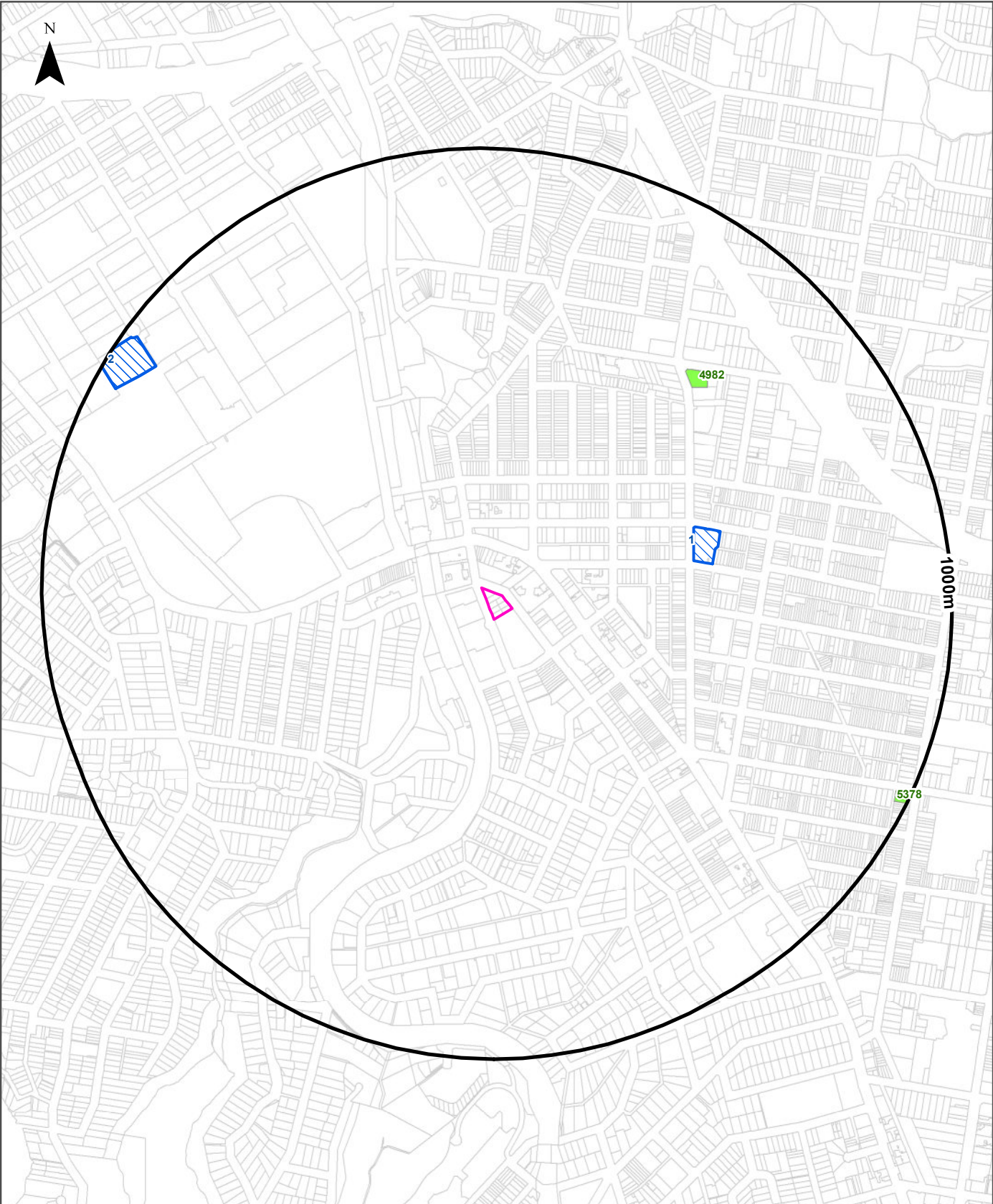
Map ID	Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
1	3173530755	Penalty Notice	SYDNEY TRAINS	SYDNEY TRAINS, HAYMARKET, NSW 1238	Issued	10/11/2021	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	31/05/2021	Network of Features	108m	South West
2	3173541672	Penalty Notice	CPB CONTRACTORS PTY LIMITED	WARRRINGAH FREEWAY FROM NORTH OF THE SYDNEY HARBOUR BRIDGE TO WILLOUGHBY ROAD NAREMBURN, NORTH SYDNEY, NSW 2060	Issued	15/10/2024	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - first offence - Corporation	20/06/2024	Premise Match	747m	North East
3	3173540453	Penalty Notice	JOHN HOLLAND PTY LTD	WARRINGAH FREEWAY UPGRADE EARLY WORKS, SYDNEY, NSW 2000	Issued	08/06/2023	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	09/02/2023	Premise Match	815m	North East
4	3504356	s.91 Clean Up Notice	CLEANAWAY PTY LTD	LANCELEY PLACE, ARTARMON, NSW 2064	Issued	22/12/2022				Premise Match	896m	North West

NSW EPA Notice Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Legend			
 Site Boundary	 Waste Management Facilities		
 Buffer 1000m	 National Liquid Fuel Facilities		
 Property Boundary			
Scale:  0 100 200 400 600 Meters		Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024	Coordinate System: GDA 1994 MGA Zone 56
		Date: 19 December 2024	

Waste Management & Liquid Fuel Facilities

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

National Waste Management Facilities Database

Sites on the National Waste Management Facilities Database within the dataset buffer:

Map ID	Owner	Name	Address	Management Type	Facility Type	Status	Loc Conf	Dist	Dir
1	COLES	COLES SUPERMARKET	101 WILLOUGHBY ROAD, CROWS NEST	DROP-OFF	SOFT PLASTICS DROP-OFF FACILITY	OPERATIONAL	Premise Match	427m	East
2	SUEZ AUSTRALIA PTY LTD	SUEZ ARTARMON TRANSFER STATION	12 LANCELEY PLACE, ARTARMON	RECYCLING	ORGANICS RECYCLING FACILITY	OPERATIONAL	Premise Match	896m	North West
	SUEZ AUSTRALIA PTY LTD	SUEZ ARTARMON TRANSFER STATION	12 LANCELEY PLACE, ARTARMON	DROP-OFF	TRANSFER STATION	OPERATIONAL	Premise Match	896m	North West

Source: Waste Management Facilities Database
Creative Commons 4.0 © Commonwealth of Australia (Geoscience Australia) 2022

National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
4982	BP	BP NAREMBURN	169 WILLOUGHBY ROAD	NAREMBURN	PETROL STATION	Operational		25/07/2011	Premise Match	639m	North East
5378	AMPOL	AMPOL WOOLWORTHS CROWS NEST	111-121 FALCON STREET	CROWS NEST	PETROL STATION	OPERATIONAL			Premise Match	964m	South East

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 4.0 © Commonwealth of Australia

PFAS Investigation & Management Programs

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

EPA PFAS Investigation Program

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

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

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

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

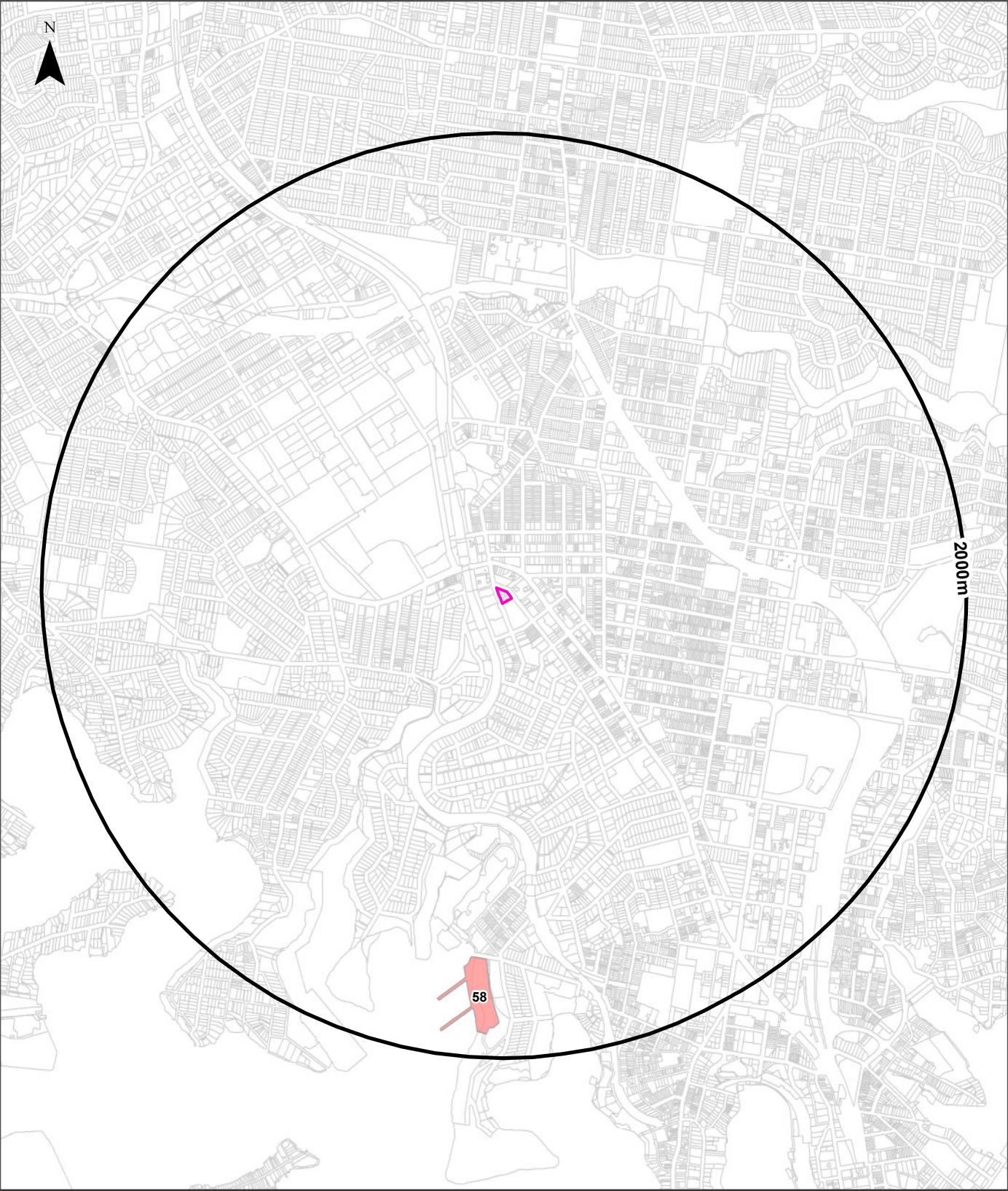
Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia



Legend

Site Boundary

Buffer 2000m

Property Boundaries

DCA

Defence Controlled Area

Defence 3 Year RCIP

Known Contamination

No Known Contamination

UXO

Substantial Potential

Slight Potential

Remote Potential

Sea Dumping of Depth Charges

Information

Other

Other Sea Dumping Sites

Scale:

0 200 400 800 1,200 Meters

Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2024

Coordinate System:
GDA 1994 MGA Zone 56

Date: 19 December 2024

Lotsearch Pty Ltd ABN 89 600 168 018

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Defence Sites and Unexploded Ordnance

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Defence Controlled Areas (DCA)

Defence Controlled Areas provided by the Department of Defence within the dataset buffer:

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

Defence Controlled Areas, Data Custodian: Department of Defence, Australian Government

Defence 3 Year Regional Contamination Investigation Program (RCIP)

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

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
58	HMAS Waterhen	Waverton, New South Wales	YES	Premise Match	1558m	South

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

National Unexploded Ordnance (UXO)

Sites which have been assessed by the Department of Defence for the potential presence of unexploded ordnance within the dataset buffer:

Site ID	Location Name	Category	Area Description	Additional Information	Commonwealth	Loc Conf	Dist	Dir
N/A	No records in buffer							

National Unexploded Ordnance (UXO), Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

EPA Other Sites with Contamination Issues

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

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

Sites within the dataset buffer:

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

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

Current EPA Licensed Activities

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



EPA Activities

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Licensed Activities under the POEO Act 1997

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

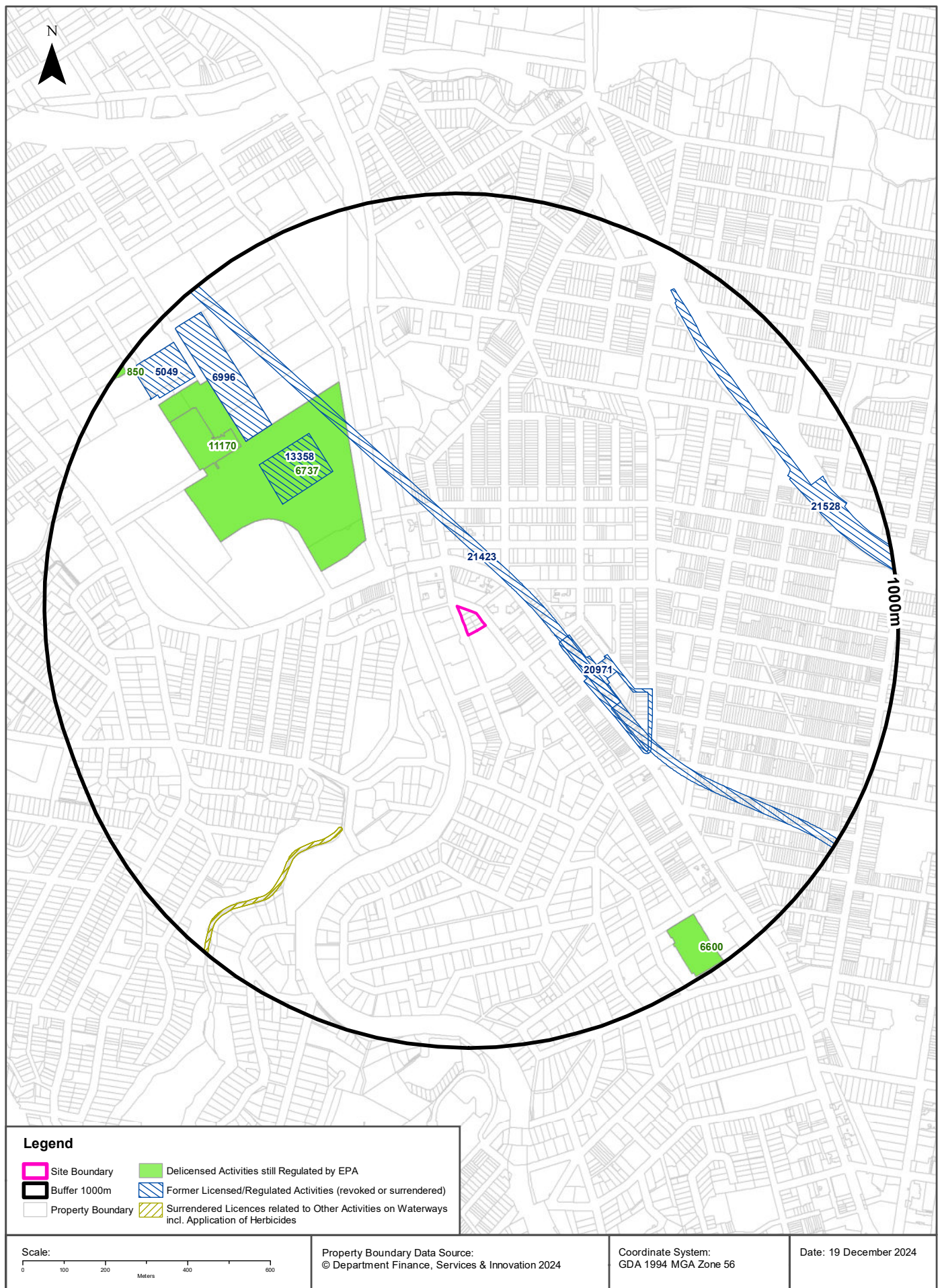
EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
21247	Metro Trains Sydney Pty Ltd		SYDNEY METRO, ROUSE HILL, NSW 2155		Railway systems activities	Network of Features	104m	North East
12208	SYDNEY TRAINS		SYDNEY TRAINS, HAYMARKET, NSW 1238		Railway systems activities	Network of Features	108m	South West
21619	CPB CONTRACTORS PTY LIMITED		WARRRINGAH FREEWAY FROM NORTH OF THE SYDNEY HARBOUR BRIDGE TO WILLOUGHBY ROAD NAREMBURN, NORTH SYDNEY, NSW 2060		Road construction (>=50,000T & road to be constructed <10km)	Premise Match	747m	North East
4922	CLEANAWAY PTY LTD	ARTARMON RESOURCE RECOVERY CENTRE	LANCELEY PLACE	ARTARMON	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Premise Match	896m	North West
4922	CLEANAWAY PTY LTD	ARTARMON RESOURCE RECOVERY CENTRE	LANCELEY PLACE	ARTARMON	Non-thermal treatment of general waste	Premise Match	896m	North West
4922	CLEANAWAY PTY LTD	ARTARMON RESOURCE RECOVERY CENTRE	LANCELEY PLACE	ARTARMON	Waste storage - other types of waste	Premise Match	896m	North West
4922	CLEANAWAY PTY LTD	ARTARMON RESOURCE RECOVERY CENTRE	LANCELEY PLACE	ARTARMON	Recovery of general waste	Premise Match	896m	North West
4922	CLEANAWAY PTY LTD	ARTARMON RESOURCE RECOVERY CENTRE	LANCELEY PLACE	ARTARMON	Waste storage - waste tyres	Premise Match	896m	North West
4922	CLEANAWAY PTY LTD	ARTARMON RESOURCE RECOVERY CENTRE	LANCELEY PLACE	ARTARMON	Composting	Premise Match	896m	North West

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



EPA Activities

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Delicensed Activities still regulated by the EPA

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

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
6737	NORTHERN SYDNEY AND CENTRAL COAST AREA HEALTH SERVICE	ROYAL NORTH SHORE HOSPITAL	PACIFIC HIGHWAY	ST LEONARDS	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	273m	North West
11170	RAMSAY HEALTH CARE AUSTRALIA PTY LIMITED	NORTH SHORE PRIVATE HOSPITAL	3 Westbourne Street	ST LEONARDS	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	652m	North West
6600	ST VINCENTS & MATER HEALTH SYDNEY LIMITED	THE MATER HOSPITAL	25 - 35 ROCKLANDS ROAD	NORTH SYDNEY	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	859m	South East
850	HEIDELBERG MATERIALS AUSTRALIA PTY LTD	HANSON CONSTRUCTION MATERIALS PTY LTD	6 LANCELEY PLACE	ARTARMON	Concrete works	Premise Match	979m	North West

Delicensed Activities Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

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

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

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
21423	CPB CONTRACTORS PTY LIMITED	BETWEEN CHATSWOOD DIVE SITE AND SYDENHAM DIVE SITE, SYDNEY, NSW 2000,	Surrendered	31/07/2020	Railway infrastructure construction (<50,000T)	Network of Features	104m	North East
20971	JOHN HOLLAND PTY LTD	Sydney Metro City & Southwest Tunnels and Excavation Works, locations between Chatswood railway station and Sydenham railway station, SYDNEY, NSW 2000, SYDNEY, NSW	Surrendered	28/09/2017	Concrete works, Railway systems activities	Network of Features	183m	South East
13358	VENTIA UTILITY SERVICES PTY LIMITED	Royal North Shore Hospital - Acute Services Building, Royal North Shore Hospital, Reserve Road, ST LEONARDS, NSW 2065, ST LEONARDS	Surrendered	20/04/2011	Generation of electrical power from gas	Premise Match	443m	North West
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	558m	South West

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	558m	South West
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	558m	South West
6996	MOCKRIDGE BULMER PTY LTD	2/12 FREDERICK STREET, ST LEONARDS, NSW 2065	Surrendered	26/06/2000	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	628m	North West
21528	JOHN HOLLAND PTY LTD	WARRINGAH FREEWAY UPGRADE EARLY WORKS, SYDNEY, NSW 2000,	Surrendered	24/05/2021	Road construction (<50,000T)	Premise Match	815m	North East
5049	ROCK & DIRT PTY LTD	11 LANCELEY PLACE, ARTARMON, NSW 2064	Surrendered	10/08/2000	Waste Storage, Transfer, Separating or Processing; Crushing, grinding or separating	Premise Match	844m	North West

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

Historical Business Directories

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Historical Business Directories

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1986, 1982, 1978, 1975, 1970, 1965, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	Adhesive Mfrs &/or Imps &/or Dists	A.V. Syntec, 67 Christie St., St. Leonards 2065	33398	1991	Premise Match	0m	On-site
	Electric Components Mfrs &/or Imps &/or Dists	Fisher, K. D. Pty Ltd, 67 Christie St, St Leonards 2065	41972	1991	Premise Match	0m	On-site
	CHEMICAL MFRS. &/OR IMPS.&/OR DISTS. (C3855)	BF Goodrich Chemical Ltd., 67 Christie St., St. Leonards. 2065.	14362	1982	Premise Match	0m	On-site
	PHOTOGRAPHERS-GENERAL.	J. F. Studio, 67 Christie St., St. Leonards. 2065	56634	1978	Premise Match	0m	On-site
	CHEMICAL MANUFACTURERS &/OR DISTRIBUTORS (C268)	Roussel Pharmaceuticals (Pty.) Ltd., 67 Christie St., St Leonards	279481	1970	Premise Match	0m	On-site
	CHEMISTS-MANUFACTURING &/OR WHOLESALE	Roussel Pharmaceuticals (Pty.) Ltd., 67 Christie St., St Leonards	279939	1970	Premise Match	0m	On-site
2	Photographic Developing Printing &/or Colouring Services	Quantum Images, 61 Christie St., St Leonards 2065	57438	1991	Premise Match	0m	On-site
3	Computer Bureau & Time Sharing Services	Security Computer Services Pty. Ltd., 52 Nicholson St., St Leonards 2065	39897	1991	Premise Match	0m	On-site
	DATA PROCESSING SERVICE BUREAUX &/OR TIME SHARING SERVICES. (D1100)	Security Computer Services Pty. Ltd., 52 Nicholson St., St.Leonards. 2065.	19158	1982	Premise Match	0m	On-site
	ENGINEERS-CONSULTING.	Harvey. H. Brown & Associates, 50 Nicholson St., St. Leonards. 2065.	27842	1975	Premise Match	0m	On-site
	ADDING & CALCULATING MACHINE MFRS. &/OR IMPS. &/OR DISTS.	Singer Friden Div., 52 Nicholson St., St. Leonards. 2065	780	1975	Premise Match	0m	On-site
	DATA PROCESSING EQUIPMENT MFRS. &/OR DISTS. . &/OR HIRERS.	Singer Friden Div., 52 Nicholson St., St. Leonards. 2065	19834	1975	Premise Match	0m	On-site
	OFFICE EQUIPMENT MFRS. &/OR DISTS.	Singer Friden Div., 52 Nicholson St., St. Leonards. 2065	64424	1975	Premise Match	0m	On-site
4	SALES-COUNSELLORS &PROMOTERS. (S0295)	Incentivation Pty. Ltd., Incentivation House, 46 Nicholson St., St.Leonards. 2065.	72877	1982	Premise Match	0m	On-site
	ENGINEERS - CONSULTING. (E6600)	Lincolne Scott Aust. Pty. Ltd., 46 Nicholson St., St. Leonards. 2065.	27032	1982	Premise Match	0m	On-site
	CHEMICAL MFRS. &/OR DISTS. &/OR IMPS	Ciba Pharmaceuticals, 46 Nicholson St, St Leonards. 2065	14478	1975	Premise Match	0m	On-site
	CHEMISTS MFRG. &/OR W/SALERS.	Ciba Pharmaceuticals, 46 Nicholson St, St. Leonards. 2065	14778	1975	Premise Match	0m	On-site
5	ELECTRIC MEDICAL EQUIPMENT MFRS.&/OR DISTS.(E190)	A. G. A. Products Australia Pty. Ltd., 63 Christie St., St Leonards	294003	1970	Premise Match	0m	On-site
	ENGINEERS-ELECTRONIC (E575)	A. G. A. Products Australia Pty. Ltd., 63 Christie St., St Leonards	298331	1970	Premise Match	0m	On-site
	ELECTRONICS-INDUSTRIAL CONTROL EQUIPMENT MFRS.	A. G. A. Products Australia Pty. Ltd., 63 Christie St., St. Leonards	296465	1970	Premise Match	0m	On-site
	INSTRUMENTS-SURVEYING, GEODETIC/GEOPHYSICAL-DIST.	A.G.A. Products Australia Pty. Ltd., 63 Christie St., St. Leonards	319783	1970	Premise Match	0m	On-site
	MEDICAL EQUIPMENT MFRS. (M212)	A.G.A. Products Australia Pty. Ltd., 63 Christie St., St. Leonards	325986	1970	Premise Match	0m	On-site

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
5	SCIENTIFIC APPARATUS MFRS. &/OR DISTRIBUTORS (S155)	A.G.A. Products Australia Pty. Ltd., 63 Christie St., St. Leonards	359765	1970	Premise Match	0m	On-site
	WELDING EQUIPMENT & SUPPLIES MFRS. &/OR DIST.	A.G.A. Products Australia Pty. Ltd., 63 Christie St, St Leonards	374083	1970	Premise Match	0m	On-site
	X-RAY & ELECTRO MEDICAL APPARATUS MFRS. &/OR DIST.	A.G.A. Products Australia Pty. Ltd., 63 Christie St., St Leonards	375562	1970	Premise Match	0m	On-site
	ELECTRONIC EQUIPMENT MFRS. &/OR DISTRIBUTORS (E355)	Aga Products Australia Pty. Ltd., 63 Christie St., St. Leonards	296313	1970	Premise Match	0m	On-site
6	Electrical Contractors - Licensed	Macquarie Light Electrical Co. Ltd., 55 Christie St., ST. LEONARDS	78824	1965	Premise Match	0m	South East
7	Coal Mining Contractors Open Cut	Elders Mining Pty. Ltd., 2nd Fl., 486 Pacific H'way., St Leonards 2065	39667	1991	Premise Match	20m	East
	Mining Companies	Elders Resources NZFP Limited, 486 Pacific H'way., St Leonards. 2065	51829	1991	Premise Match	20m	East
	Real Estate Developers	Leighton Properties Pty. Ltd., 472 Pacific H'way St Leonards 2065	60814	1991	Premise Match	20m	East
	PROPERTY DEVELOPERS.	Leighton Properties Pty. Ltd., 472 Pacific H'way., St. Leonards. 2065.	77371	1986	Premise Match	20m	East
	COMPUTER ACCESSORIES &/OR SUPPLIES.	Parity Computer Ltd., 472 Pacific H'way., St. Leonards. 2068	19231	1986	Premise Match	20m	East
	COMPUTER EQUIPMENT MAINTENANCE & SERVICE.	Parity Computer Ltd., 472 Pacific H'way., St. Leonards. 2068	19370	1986	Premise Match	20m	East
	COMPUTER SALES &/OR SERVICE.	Parity Computer Ltd., 472 Pacific H'way., St. Leonards. 2068	19597	1986	Premise Match	20m	East
	COMPUTER-SOFTWARE.	Parity Computer Ltd., 472 Pacific H'way., St. Leonards. 2068	19667	1986	Premise Match	20m	East
	DATA PROCESSING SYSTEMS &/OR EQUIPMENT.	Parity Computer Ltd., 472 Pacific H'way., St. Leonards. 2068	21475	1986	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Orbit Service Station (Ampol), 472 Pacific H'way., St. Leonards. 2065.	57323	1982	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Ampol Service Station, 472 Pacific H'way, St. Leonards. 2065	49299	1978	Premise Match	20m	East
	PLUMBERS, GASFITTERS &/OR DRAINLAYERS.	Foster, R. Pty. Ltd., 486 Pacific H'way., St. Leonards. 2065	68432	1975	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS.	Yellow Cabs of Australia Pty. Ltd., 472 Pacific H'way., St. Leonards. 2065	59809	1975	Premise Match	20m	East
	MOTOR CAR RADIO SPECS. (M544)	Car Radio & TV Co. Pty. Ltd., 486 Pacific Hghwy., St Leonards	335694	1970	Premise Match	20m	East
	RADIO &/OR TELEVISION SALES & SERVICEMEN (R090)	Car Radio & TV Co. Pty. Ltd., 486 Pacific Highway., St. Leonards	354212	1970	Premise Match	20m	East
	MOTOR GARAGES & ENGINEERS(M6S6)	Yellow Cabs of Aust. Pty. Ltd., 482 Pacific Highway., CROW'S NEST	338924	1970	Premise Match	20m	East
	Acid Manufacturers	Albright & Wilson (Aust.) Pty. Ltd., 486 Pacific Highway., St. Leonards	44392	1965	Premise Match	20m	East
	Chemical Manufacturers &/or Distributors	Albright & Wilson (Aust.) Pty. Ltd., 486 Pacific Highway., St. Leonards	64085	1965	Premise Match	20m	East
	CHEMICAL MANUFACTURERS &/OR DISTRIBUTORS	Albright & Wilson (Aust.) Pty. Ltd., 486 Pacific Highway., St. Leonards	286522	1961	Premise Match	20m	East
	ACID MANUFACTURERS	Albright & Wilson, 486 Pacific Highway., St. Leonards	266006	1961	Premise Match	20m	East
	MOTOR GARAGES & ENGINEERS	Orbit Service Station, 482-484 Pacific Hghwy., St Leonards	347828	1961	Premise Match	20m	East
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Orbit Service Station, 482-484 Pacific Hghwy., St Leonards	350926	1961	Premise Match	20m	East
	BUILDERS' SUPPLIERS	Kents Pty. Ltd., 472 Pacific Highway., Crows Nest	11813	1950	Premise Match	20m	East
	SECONDHAND DEALERS	Kents Pty. Ltd., 472 Pacific Highway., Crows Nest	101211	1950	Premise Match	20m	East
	DRY CLEANERS, PRESSERS & DYERS	Tasman Dry Cleaners. 494 Pacific Highway., St. Leonards	35765	1950	Premise Match	20m	East
	HARDWARE DEALERS &/OR IRONMONGERS	White, C., 486 Pacific Hghwy., St. Leonards	61477	1950	Premise Match	20m	East

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8	Facsimile Equipment &/or Supplies Mfrs &/or Imps &/or Dists	NEC Australia Pty Ltd Advanced Communications Division, 99 Nicholson St., St Leonards 2065	45198	1991	Premise Match	20m	North
	Radio Communication Systems Mfrs &/or Dists	NEC Australia Pty. Ltd, Telecommunications Division 99 Nicholson St., St. Leonards. 2065	60061	1991	Premise Match	20m	North
	Communication Systems Mfrs &/or Imps &/or Dists	NEC Australia Pty. Ltd. Business Communication Systems Group, 99 Nicholson St., St Leonards 2065	39769	1991	Premise Match	20m	North
	Computer Equipment Maintenance & Service	NEC Information Systems Australia Pty Ltd, 99 Nicholson St, St Leonards 2065	39997	1991	Premise Match	20m	North
	Mining Companies	Red Dome, 99 Nicholson St., St Leonards. 2065	51854	1991	Premise Match	20m	North
	ENGINEERS – MINING.	Elders Mining Pty. Ltd., 99 Nicholson St., St Leonards. 2065	30775	1986	Premise Match	20m	North
	COAL MINING CONTRACTORS-OPEN CUT.	Elders Mining Pty. Ltd., 99 Nicholson St., St. Leonards. 2065	19040	1986	Premise Match	20m	North
	MINING COMPANIES	Elders Resources Ltd. 99 Nicholson Street, St. Leonards. 2065	59531	1986	Premise Match	20m	North
	MINING COMPANIES	Elders Resources Ltd., 99 Nicholson St., St. Leonards. 2065	59553	1986	Premise Match	20m	North
	MINING COMPANIES	Hebden Mining Co., 99 Nicholson St., St Leonards. 2065	59558	1986	Premise Match	20m	North
	TELEPHONE SUPPLIES.	MEC Australia Pty. Ltd. Business Communication Systems Group, 99 Nicholson St., St. Leonards. 2065.	92585	1986	Premise Match	20m	North
	COMMUNICATION SYSTEMS MFRS. &/OR IMPS. &/OR DIST.	NEC Australia Pty Ltd Business Communication Systems Group, 99 Nicholson St., St. Leonards. 2065	19198	1986	Premise Match	20m	North
	FACSIMILE EQUIPMENT MFRS. &/OR IMPS. &/OR DIST.	NEC Australia Pty. Ltd. Advanced Communications Division, 99 Nicholson St, St. Leonards. 2065	31857	1986	Premise Match	20m	North
	PAGING SYSTEMS.	NEC Australia Pty. Ltd. Advanced Communications Division, 99 Nicholson St., St. Leonards. 2065	71450	1986	Premise Match	20m	North
	TELEPHONE EXCHANGE & ASSOCIATED EQUIPMENT MANUFACTURERS.	NEC Australia Pty. Ltd. Business Communication Systems Group, 99 Nicholson St., St. Leonards. 2065.	92556	1986	Premise Match	20m	North
	TELEPHONE MFRS. &/OR DIST.	NEC Australia Pty. Ltd. Business Communication Systems Group, 99 Nicholson St., St. Leonards. 2065.	92563	1986	Premise Match	20m	North
	TELECOMMUNICATIONS EQUIPMENT &/OR SYSTEM MFRS. &/OR IMPS. &/OR DIST.	NEC Australia Pty. Ltd. Telecommunications Division, 99 Nicholson St., St. Leonards. 2065.	92513	1986	Premise Match	20m	North
	RADIO - COMMUNICATION - SYSTEMS.	NEC Australia Pty. Ltd. Telecommunications Division, 99 Nicholson. St., St Leonards. 2065.	78657	1986	Premise Match	20m	North
	COMPUTER MFRS. &/OR IMPS. &/OR DIST.	NEC Information Systems Australia Pty Ltd., 99 Nicholson St., Leonards. 2065	19488	1986	Premise Match	20m	North
	COMPUTER EQUIPMENT &/OR BUREAU & TIME SHARING SERVICES.	NEC Information Systems Australia Pty. Ltd., 99 Nicholson St., Leonards. 2065	19435	1986	Premise Match	20m	North
	COMPUTER EQUIPMENT MAINTENANCE & SERVICE.	NEC Information Systems Australia Pty. Ltd., 99 Nicholson St., Leonards. 2065	19367	1986	Premise Match	20m	North
	COMPUTER-SOFTWARE.	NEC Information Systems Australia Pty. Ltd., 99 Nicholson St., Leonards. 2065	19664	1986	Premise Match	20m	North
	COAL MINING CONTRACTORS - OPEN CUT. (C5850)	Davis Mining (The Hornibrook Group), 99 Nicholson St., St Leonards. 2065.	17357	1982	Premise Match	20m	North
	EARTH MOVING &/OR ROADMAKING CONTRACTORS.(E0360)	Davis Contractors (The Hornibrook Group), 99 Nicholson St., St Leonards. 2065.	24442	1982	Premise Match	20m	North
	ENGINEERS - MINING. (E7560)	Davis Mining (The Hornibrook Group), 99 Nicholson St, St. Leonards. 2065.	28789	1982	Premise Match	20m	North

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8	MINING COMPANIES	Hebden Mining Joint Venture, C/- Wood Hall Ltd., 99 Nicholson St., St Leonards. 2065.	52658	1982	Premise Match	20m	North
	BUILDERS &/OR BUILDING CONTRACTORS. (B6920)	Hornibrook Group, The, (Building Division), 99 Nicholson St., St. Leonards. 2065.	9292	1982	Premise Match	20m	North
	ENGINEERS - MARINE. (E7500)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St Leonards. 2065.	28745	1982	Premise Match	20m	North
	ENGINEERS - CIVIL. (E6420)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St. Leonards. 2065.	26826	1982	Premise Match	20m	North
	ENGINEERS - STRUCTURAL. (E8340)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St. Leonards. 2065.	29333	1982	Premise Match	20m	North
	ENGINEERS-CONSTRUCTIONAL(E6570)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St. Leonards. 2065.	26919	1982	Premise Match	20m	North
	ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL. (E7140)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St. Leonards. 2065.	28090	1982	Premise Match	20m	North
	STEEL BRIDGE MFRS. (S5925)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St. Leonards. 2065.	76784	1982	Premise Match	20m	North
	STEEL ERECTORS. (S6075)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St. Leonards. 2065.	76799	1982	Premise Match	20m	North
	STEEL FABRICATORS. (S6105)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St. Leonards. 2065.	76925	1982	Premise Match	20m	North
	WELDERS - ELECTRIC &/OR OXY.(W3160)	Hornibrook Group, The, Southern Division, 99 Nicholson St, St. Leonards. 2065.	84161	1982	Premise Match	20m	North
	CRANES-GIRDER MFRS. (C8730)	Hornibrook Group, The, Southern Division, 99 Nicholson St., St Leonards. 2065.	18388	1982	Premise Match	20m	North
	ENGINEERS - INDUSTRIAL (E7320)	Hornibrook Group, The, Southern Division, 99 Nicholson St., St Leonards. 2065.	28655	1982	Premise Match	20m	North
	PIPE &/OR PIPE FITTINGS MFRS.&/OR DIST. (P4846)	Hornibrook Group, The, Southern Division, 99 Nicholson St., St Leonards. 2065.	64303	1982	Premise Match	20m	North
	BOILERMAKERS. (B4080)	Hornibrook Group, The, Southern Division, 99 Nicholson St., St. Leonards. 2065.	7472	1982	Premise Match	20m	North
	STEEL GRIT BLASTERS. (S6285)	Hornibrook Group, The, Southern Division, 99 Nicholson St., St. Leonards. 2065.	77055	1982	Premise Match	20m	North
9	ROAD-MAKING CONTRACTORS	Castlereagh Metal & Gravel Pty. Ltd., 53 Lithgow St., St. Leonards	246501	1961	Premise Match	20m	South West
	ROAD MAKING CONTRACTORS	Castlereagh Metal and Gravel Pty. Ltd., 53 Lithgow St., St. Leonards	99576	1950	Premise Match	20m	South West
	BRIDGE BUILDERS & CONTRACTORS	McDonald Constructions Pty. Ltd., 53 Lithgow St., St. Leonards	11342	1950	Premise Match	20m	South West
	CONCRETE CONTRACTORS-CONSTRUCTIONAL	McDonald Constructions Pty. Ltd., 53 Lithgow St., St. Leonards	28306	1950	Premise Match	20m	South West
	EARTH MOVING CONTRACTORS	McDonald Constructions Pty. Ltd., 53 Lithgow St., St. Leonards	36148	1950	Premise Match	20m	South West
	ENGINEERS-CIVIL	McDonald Constructions Pty. Ltd., 53 Lithgow St., St. Leonards	39880	1950	Premise Match	20m	South West
	ROAD MAKING CONTRACTORS	McDonald Constructions Pty. Ltd., 53 Lithgow St., St. Leonards	99583	1950	Premise Match	20m	South West
	SEWERAGE CONSTRUCTION CONTRACTORS	McDonald Constructions Pty. Ltd., 53 Lithgow St., St. Leonards	101399	1950	Premise Match	20m	South West
	EARTH MOVING CONTRACTORS	McDonald Constructions, 53 Lithgow St., St. Leonards	36149	1950	Premise Match	20m	South West
	ROAD MAKING CONTRACTORS	Mcdonald Constructions, 53 Lithgow St., St. Leonards	99584	1950	Premise Match	20m	South West

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10	Engineers Civil	Costain Aust Ltd, 75 Lithgow St St Leonards 2065	43354	1991	Premise Match	25m	North West
	Telecommunication Equipment &/or System Mfrs &/or Imps &/or Dists	Ericsson L.M Pty Ltd, 84 Christie St St Leonards 2065	63922	1991	Premise Match	25m	North West
	Communication Systems Mfrs &/or Imps &/or Dists	Ericsson, L. M. Pty. Ltd., 84 Christie St., St Leonards 2065	39754	1991	Premise Match	25m	North West
	ENGINEERS – MINING.	Costain Pearson Bridge (A Division of Costain Australia Ltd), 75 Lithgow St., St Leonards. 2065	30770	1986	Premise Match	25m	North West
	ENGINEERS – CIVIL	Costain Pearson Bridge (A Division of Costain Australia Ltd.), 75 Lithgow St., St. Leonards. 2065	28629	1986	Premise Match	25m	North West
	COMPUTER EQUIPMENT &/OR BUREAU & TIME SHARING SERVICES.	Ericsson, L M. Pty. Ltd., 84 Christie St., St Leonards 2065	19414	1986	Premise Match	25m	North West
	DATA PROCESSING EQUIPMENT MFRS. &/OR DISTS. &/ OR HIRERS.	Ericsson, L M. Pty. Ltd., 84 Christie St., St Leonards. 2065	21303	1986	Premise Match	25m	North West
	DATA PROCESSING EQUIPMENT MFRS. &/OR DISTS. &/ OR HIRERS.	Ericsson, L M. Pty. Ltd., 84 Christie St., St Leonards. 2065	21302	1986	Premise Match	25m	North West
	DATA PROCESSING SYSTEMS &/OR EQUIPMENT.	Ericsson, L M. Pty. Ltd., 84 Christie St., St Leonards. 2065	21448	1986	Premise Match	25m	North West
	COMMUNICATION SYSTEMS MFRS. &/OR IMPS. &/OR DISTS.	Ericsson, L M. Pty. Ltd., 84 Christie St., St. Leonards 2065	19188	1986	Premise Match	25m	North West
	TELECOMMUNICATIONS EQUIPMENT &/OR SYSTEM MFRS. &/OR IMPS. &/OR DISTS.	Ericsson, L. M. Pty. Ltd., 84 Christie St., St. Leonards. 2065.	92500	1986	Premise Match	25m	North West
	CHEMISTS- PHARMACEUTICAL.	Pharmacy Guild of Aust., 79 Lithgow St., St. Leonards. 2065	14706	1986	Premise Match	25m	North West
	AGRICULTURAL CHEMICALS MFRS. &/OR IMPS. &/OR DISTS.(A2430)	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards, 2065.	1579	1982	Premise Match	25m	North West
	CHEMICAL MFRS. &/OR IMPS.&/OR DISTS. (C3855)	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065.	14404	1982	Premise Match	25m	North West
	INSECTICIDE MFRS. &/OR DISTS.(I2400)	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065.	42023	1982	Premise Match	25m	North West
	ENGINEERS-AIR CONDITIONING.(E6030)	Flakt Australia Ltd., 84 Christie St., St. Leonards. 2065.	26704	1982	Premise Match	25m	North West
	POLLUTION CONTROL EQUIPMENT MFRS. &/OR DISTS. (P7090)	Flakt Australia Ltd., 84 Christie St., St. Leonards. 2065.	65554	1982	Premise Match	25m	North West
	ENGINEERS - CIVIL. (E6420)	Pearson Bridge Pty. Ltd., 75 Lithgow St., St. Leonards. 2065.	26845	1982	Premise Match	25m	North West
	ENGINEERS - MINING. (E7560)	Pearson Bridge Pty. Ltd., 75 Lithgow St., St. Leonards. 2065.	28813	1982	Premise Match	25m	North West
	CHEMISTS - PHARMACEUTICAL.(C4110)	Pharmacy Guild of Aust., 79 Lithgow St., St. Leonards. 2065.	15515	1982	Premise Match	25m	North West
	TELEPHONE ANSWERING SERVICES.	Answer Australia Pty. Ltd., 84 Christie St., St. Leonards. 2065	69888	1978	Premise Match	25m	North West
	ENGINEERS-CONSULTING.	Broughton, David T. & Associates, 84 Christie St., St. Leonards. 2065	24019	1978	Premise Match	25m	North West
	AGRICULTURAL CHEMICALS MFRS. &/OR DISTS.	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065	1581	1978	Premise Match	25m	North West
	CHEMICAL MFRS. &/OR DISTS. &/OR IMPS.	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065	12539	1978	Premise Match	25m	North West
	CHEMISTS-CONSULTING &/OR INDUSTRIAL RESEARCH.	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065	12706	1978	Premise Match	25m	North West
	INSECTICIDE MFRS. &/OR DISTS.	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065	37361	1978	Premise Match	25m	North West
	LAND DEVELOPERS.	Hallwood Developments Pty. Ltd., 88 Christie St., St. Leonards. 2065	39633	1978	Premise Match	25m	North West
	BUILDERS &/OR BUILDING CONTRACTORS.	Hansen Projects Pty. Ltd., 88 Christie St., St. Leonards. 2065	7735	1978	Premise Match	25m	North West

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10	ENGINEERS-CIVIL	Hughes, Trueman, Ludlow Pty. Ltd., 84 Christie St., St. Leonards. 2065	23858	1978	Premise Match	25m	North West
	ENGINEERS-CIVIL	Pearson Bridge Pty. Ltd., 75 Lithgow St., St. Leonards. 2065	23879	1978	Premise Match	25m	North West
	CHEMISTS-PHARMACEUTICAL.	Pharmacy Guild of Aust., 79 Lithgow St., St. Leonards. 2065	13682	1978	Premise Match	25m	North West
	ENGINEERS-CONSULTING.	Steensen & Farming, 84 Christie St., St. Leonards. 2065	24158	1978	Premise Match	25m	North West
	TELEPHONE ANSWERING SERVICES.	Answer Australia Pty. Ltd., 84 Christie St., St. Leonards. 2065	82379	1975	Premise Match	25m	North West
	ENGINEERS-CONSULTING.	Broughton, P. T. & Associates, 84 Christie St., St. Leonards. 2065.	27778	1975	Premise Match	25m	North West
	CHEMISTS-CONSULTING &/OR INDUSTRIAL RESEARCH.	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards 2065	14707	1975	Premise Match	25m	North West
	AGRICULTURAL CHEMICALS MFRS. &/OR DIST.	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065	1311	1975	Premise Match	25m	North West
	CHEMICAL MFRS. &/OR DIST. &/OR IMPS	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065	14489	1975	Premise Match	25m	North West
	INSECTICIDE MFRS. &/OR DIST.	Cyanamid Australia Pty. Ltd., 88 Christie St., St. Leonards. 2065	44237	1975	Premise Match	25m	North West
	ENGINEERS-CIVIL	Hughes, C. G., Trueman & Ludlow Pty. Ltd., 84 Christie St., St. Leonards. 2065	27605	1975	Premise Match	25m	North West
	ENGINEERS-CONSULTING.	Hughes, C. G., Trueman & Ludlow Pty. Ltd., 84 Christie St., St. Leonards. 2065.	27847	1975	Premise Match	25m	North West
	ENGINEERS-CONSULTING.	Steensen & Farming. 84 Christie St., St. Leonards. 2065	27923	1975	Premise Match	25m	North West
	INSECTICIDE MFRS. (I340)	Cyanamid D. H. A. Pty. Ltd., 88 Christie St., St. Leonards	319284	1970	Premise Match	25m	North West
	AGRICULTURAL CHEMICAL MFRS. &/OR DIST.	Cyanamid, D.H.A Pty. Ltd., 88 Christie St., St. Leonards	260445	1970	Premise Match	25m	North West
	CAKE SHOPS & PASTRYCOOKS	Cranney, E. M., 88 Christie St., St. Leonards	16590	1950	Premise Match	25m	North West
11	DATA PROCESSING SERVICE BUREAU &/OR TIME SHARING SERVICES.	Computer Sciences of Australia Pty. Ltd., 460 Pacific H'way., St. Leonards 2065	21384	1986	Premise Match	38m	East
	COMPUTER BUREAU & TIME SHARING SERVICES.	Computer Sciences of Australia Pty. Ltd., 460 Pacific H'way., St. Leonards. 2065	19243	1986	Premise Match	38m	East
	COMPUTER EQUIPMENT &/OR BUREAU & TIME SHARING SERVICES.	Computer Sciences of Australia Pty. Ltd., 460 Pacific H'way., St. Leonards. 2065	19399	1986	Premise Match	38m	East
	COMPUTER-SOFTWARE.	Computer Sciences of Australia Pty. Ltd., 460 Pacific H'way., St. Leonards. 2065	19646	1986	Premise Match	38m	East
	DATA PROCESSING SERVICE BUREAU &/OR TIME SHARING SERVICES. (D1100)	Computer Sciences of Australia Pty. Ltd., 460 Pacific H'way., St. Leonards. 2065.	19120	1982	Premise Match	38m	East
	DATA PROCESSING SERVICE BUREAU &/OR TIME SHARING SERVICES	Computer Sciences of Australia Pty. Ltd., 460 Pacific H'way., St. Leonards. 2065	17221	1978	Premise Match	38m	East
	DATA PROCESSING SERVICE BUREAU &/OR TIME SHARING SERVICES	Computer Sciences Of Australia Pty. Ltd. Head Office 460 Pacific Highway, St. Leonards. 2065	17209	1978	Premise Match	38m	East
	DATA PROCESSING SERVICE BUREAU &/OR TIME SHARING SERVICES.	Computer Sciences Of Australia Pty Ltd. 460 Pacific hwy., St. Leonards. 2065	19846	1975	Premise Match	38m	East
	DATA PROCESSING EQUIPMENT MFRS &/OR DIST.&/OR HIRERS.	Computer Sciences Of Australia Pty Ltd., 460 Pacific HWY., St. Leonards. 2065	19796	1975	Premise Match	38m	East
	DATA PROCESSING EQUIPMENT MFRS. &/OR DIST. . &/OR HIRERS.	Computer Sciences of Australia Pty. Ltd., 460 Pacific H'way, St. Leonards. 2065	19812	1975	Premise Match	38m	East
	DATA PROCESSING SERVICE BUREAU &/OR TIME SHARING SERVICES.	Computer Sciences of Australia Pty. Ltd., 460 Pacific H'way, St. Leonards. 2065	19860	1975	Premise Match	38m	East

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11	MOTOR GARAGE EQUIPMENT/TOOL MFRS./DISTRIBUTORS	Motor Parts Manufacturing Co. Pty. Ltd., 460 Pacific Highway., Crow's Nest	346437	1961	Premise Match	38m	East
12	Printing Consultants	National Printing Ind. Training Committee Ltd Printing House 77 Lithgow St St Leonards 2065	59471	1991	Premise Match	39m	North West
	PRINTING CONSULTANTS.	National Printing Industry Training Committee Ltd., Printing House. 77 Lithgow St., St. Leonards. 2065	77252	1986	Premise Match	39m	North West
	CHEMISTS - PHARMACEUTICAL.(C4110)	Chem-Mart, 77 Lithgow St., St. Leonards. 2065.	14879	1982	Premise Match	39m	North West
	CHEMISTS-PHARMACEUTICAL.	Chem-Mart, 77 Lithgow St., St. Leonards. 2065	13062	1978	Premise Match	39m	North West
	DATA PROCESSING EQUIPMENT MFRS. &/OR DIST. . &/OR HIRERS.	Datronics Systems Pty. Ltd., 77 Lithgow St., St. Leonards. 2065	19816	1975	Premise Match	39m	North West
13	REFRACTORY MATERIALS MFRS. &/OR SUPPLIERS.	Newbold General Refractories Ltd., 82 Christie St., St. Leonards. 2065	73268	1975	Premise Match	39m	North West
	FIRE BRICK MFRS. &/OR DIST.	Newbold General Refractories Ltd., 82 Christie St., St. Leonards. 2065.	32093	1975	Premise Match	39m	North West
14	Hospital Equipment &/or Supplies Mfrs &/or Imps &/or Dists	Guyatt & Co, 504 Pacific H'way., St. Leonards. 2065	48614	1991	Premise Match	54m	North
	Computer Sales &/or Services	Infosol Pty. Ltd., 504 Pacific H'way., St Leonards 2065	40217	1991	Premise Match	54m	North
	Printers Instant	Posh Printing St. Leonards, Shop 7/504 Pacific H'way., St. Leonards. 2065	58960	1991	Premise Match	54m	North
	HOSPITAL EQUIPMENT &/OR SUPPLIES MFRS. &/OR IMPS. &/OR DIST.	Guyatt & Co., 504 Pacific H'way., St. Leonards. 2065	46283	1986	Premise Match	54m	North
	SURGICAL APPLIANCE MFRS. &/OR DIST.	Guyatt & Co., 504 Pacific H'way., St. Leonards. 2065	89769	1986	Premise Match	54m	North
	SURGICAL BELT &/OR STOCKING SPECIALISTS.	Guyatt & Co., 504 Pacific H'way., St. Leonards. 2065	89785	1986	Premise Match	54m	North
	FURNITURE IMPORTERS.	House of Teak Furniture, 504 Pacific H'way., St Leonards 2065	37637	1986	Premise Match	54m	North
	COMPUTER-SOFTWARE.	Infosol Pty Ltd., 504 Pacific H'way., St Leonards. 2065	19661	1986	Premise Match	54m	North
	COMPUTER ACCESSORIES &/OR SUPPLIES.	Infosol Pty. Ltd., 504 Pacific H'way., St Leonards. 2065	19223	1986	Premise Match	54m	North
	COMPUTER EQUIPMENT &/OR BUREAU & TIME SHARING SERVICES.	Infosol Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	19423	1986	Premise Match	54m	North
	COMPUTER SALES &/OR SERVICE.	Infosol Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	19572	1986	Premise Match	54m	North
	COMPUTER MFRS. &/OR IMPS. &/OR DIST.	Infosol Pty. Ltd 504 Pacific H'way. St. Leonards. 2065	19479	1986	Premise Match	54m	North
	CORROSION PREVENTION & CONTROL MATERIAL MFRS. &/OR DIST.	Nitto-Denko (Australia) Pty. Ltd., 1st Fl, 504 Pacific H'way., St. Leonards. 2065	20450	1986	Premise Match	54m	North
	ADHESIVES-TAPE MFRS. &/OR DIST.	Nitto-Denko (Australia) Pty. Ltd., 1st Fl. 504 Pacific H'way., St. Leonards 2065	1383	1986	Premise Match	54m	North
	TAPE - ADHESIVE - MFRS. &/OR IMPS. &/OR DIST.	Nitto-Denko (Australia) Pty. Ltd., 1st Fl. 504 Pacific H'way., St. Leonards. 2065	92085	1986	Premise Match	54m	North
	ENGINEERS – FURNACES &/OR COMBUSTION.	Peabody Holmes Ltd., 1st Fl. 504 Pacific H'way., St. Leonards. 2065	29652	1986	Premise Match	54m	North
	ENGINEERS-CHEMICAL.	Peabody Holmes Ltd., 1st Fl. 504 Pacific H'way., St. Leonards. 2065	28601	1986	Premise Match	54m	North
	GAS BURNERS-INDUSTRIAL-MFRS. &/OR DIST.	Peabody Holmes Ltd., 1st Fl. 504 Pacific H'way., St. Leonards. 2065	38458	1986	Premise Match	54m	North
	OIL BURNER MFRS. &/OR IMPS. &/OR DIST.	Peabody Holmes Ltd., 1st Fl. 504 Pacific H'way., St. Leonards. 2065	70512	1986	Premise Match	54m	North
	ENGINEERS-COMBUSTION.	Peabody Holmes Ltd., 504 Pacific Highway, St. Leonards. 2065	28699	1986	Premise Match	54m	North

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
14	ENGINEERS-COMBUSTION.	Peabody Holmes Ltd., 504 Pacific H'way., St. Leonards. 2065	28711	1986	Premise Match	54m	North
	PRINTERS INK MFRS. &/OR IMPS.	Posh Printing St. Leonards 504 Pacific H'way.,	75977	1986	Premise Match	54m	North
	PODIATRISTS.	Schofield, G. A., 504 Pacific H'way., St. Leonards. 2065.	75415	1986	Premise Match	54m	North
	STATIONERS - MANUFACTURING.	W. C. Penfold & Co. Pty. Ltd.St. Leonards, 504 Pacific H'way.	88265	1986	Premise Match	54m	North
	CARPET &/OR FLOOR COVERING RETAILERS &/OR SPECIALISTS.(C1830)	Allansons Carpets, 508 Pacific H'way., St. Leonards. 2065.	13377	1982	Premise Match	54m	North
	ART REPRODUCTION SPECIALISTS. (A7080)	Artflow Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065.	3402	1982	Premise Match	54m	North
	ARTISTS - COMMERCIAL &INDUSTRIAL. (A7385)	Artflow Studios Pty, Ltd., 1st Fl. 504 Pacific H'way., St. Leonards. 2065.	3420	1982	Premise Match	54m	North
	PLAN PRINTERS. (P5200)	Black Plan Printing, 6th Fl. 504 Pacific H'way., St. Leonards. 2065.	64370	1982	Premise Match	54m	North
	DRAUGHTSMEN(D6650)	Commercial Design Consolidated Pty. Ltd, 1st Fl. 504 Pacific H'way., St. Leonards, 2065.	22227	1982	Premise Match	54m	North
	ENGINEERS - DESIGNING. (E6690)	Commercial Design Consolidated Pty. Ltd., 1st Fl. 504 Pacific H'way., St. Leonards. 2065.	27151	1982	Premise Match	54m	North
	ARTISTS - COMMERCIAL &INDUSTRIAL. (A7385)	Graphicas, 6th Fl. 504 Pacific H'way., St. Leonards, 2065.	3443	1982	Premise Match	54m	North
	HOSPITAL SUPPLIES &EQUIPMENT MFRS. &/OR DIST.(H6110)	Guyatt & Co., 504 Pacific H'way., St. Leonards. 2065.	40371	1982	Premise Match	54m	North
	SURGICAL APPLIANCE MFRS.&/OR DIST. (S7890)	Guyatt & Co., 504 Pacific H'way., St. Leonards. 2065.	77621	1982	Premise Match	54m	North
	SURGICAL APPLIANCE MFRS.&/OR DIST. (S7890)	Guyatt & Co., 504 Pacific H'way., St. Leonards. 2065.	77622	1982	Premise Match	54m	North
	SURGICAL BELTS, STOCKING, SPECIALISTS. (S7920)	Guyatt & Co., 504 Pacific H'way., St. Leonards. 2065.	77643	1982	Premise Match	54m	North
	FURNITURE IMPORTERS. (F7730)	House of Teak Furniture, 504 Pacific H'way., St. Leonards. 2065.	35164	1982	Premise Match	54m	North
	BUILDERS SUPPLIERS. (B7060)	James, J. & Company Pty. Ltd. (Administration Office), 2nd Fl. 504 Pacific H'way., St. Leonards. 2065.	9808	1982	Premise Match	54m	North
	COURIER SERVICES, (C8615)	Mercury Messengers Pty. Ltd., 6th Fl., 504 Pacific H'way., St.Leonards. 2065.	18336	1982	Premise Match	54m	North
	CHEMISTS-CONSULTING. (C4035)	Newton, Jack (Technology) Pty. Ltd., 504 Pacific H'way., St Leonards. 2065.	14569	1982	Premise Match	54m	North
	TAPE-ADHESIVE-MFRS. &/OR IMPS. &/OR DIST. (T0745)	Nitto Electric Industrial Co. Ltd, 1st Fl. 504 Pacific H'way., St.Leonards. 2065	79094	1982	Premise Match	54m	North
	CORROSION PREVENTION &CONTROL MATERIAL MFRS. 8./OR DIST. (C8290)	Nitto Electric Industrial Co. Ltd., 1st Fl. 504 Pacific H'way., St.Leonards. 2065.	18155	1982	Premise Match	54m	North
	ENGINEERS-FURNACES &/OR COMBUSTION. (E7080)	Peabody Holmas Ltd., 504 Pacific H'way., St Leonards. 2065.	27754	1982	Premise Match	54m	North
	ENGINEERS-CHEMICAL (E6360)	Peabody Holmes Ltd., 504 Pacific H'way., St Leonards. 2065.	26778	1982	Premise Match	54m	North
	GAS BURNERS - INDUSTRIAL-MFRS. &/OR DIST. (G1010)	Peabody Holmes Ltd., 504 Pacific H'way., St. Leonards. 2065.	35828	1982	Premise Match	54m	North
	OIL BURNER MFRS. &/OR SUPPLIERS. (O1150)	Peabody Holmes Ltd., 504 Pacific H'way., St. Leonards. 2065.	61551	1982	Premise Match	54m	North
	DATA PROCESSING EQUIPMENT MFRS. &/OR DIST. &/OR HIRERS.(D1050)	Raytheon International Data Systems, (Service Division), 6th Fl. 504 Pacific H'way., St. Leonards. 2065.	19080	1982	Premise Match	54m	North
	GLASS MANUFACTURERS. (G4150)	Solaglas Architectural Division, 6th Fl. 504 Pacific H'way., St. Leonards. 2065.	36774	1982	Premise Match	54m	North
	ENGINEERS - CONSULTING. (E6600)	Space Structures Specialists Pty. Ltd., 2nd Fl. 504 Pacific H'way., St Leonards. 2065.	27086	1982	Premise Match	54m	North
	ENGINEERS - DESIGNING. (E6690)	Space Structures Specialists Pty. Ltd., 2nd Fl. 504 Pacific H'way., St. Leonards. 2065.	27191	1982	Premise Match	54m	North

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
14	KITCHEN UNIT MANUFACTURERS.(K0500)	Style Kitchens Pty. Ltd., 2nd Fl. 504 Pacific H'way., St. Leonards. 2065.	44258	1982	Premise Match	54m	North
	TELEVISION PROGRAMME DIST.(T2035)	Telepix Pty. Ltd., 7th Fl. 504 Pacific H'way., St. Leonards. 2065.	79445	1982	Premise Match	54m	North
	BAKERS - BREAD. (B0440)	Tip Top Bakeries Holding Pty. Ltd., 2nd Fl. 504 Pacific H'way., St. Leonards. 2065.	4629	1982	Premise Match	54m	North
	BAKERS - BREAD. (B0440)	Tip Top Bakeries Holdings Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065.	4630	1982	Premise Match	54m	North
	CLOTHING - TIES & SCARF MFRS.(C5702)	Webster, John Holdings Pty. Ltd., 2nd Fl. 504 Pacific H'way., St. Leonards. 2065.	17159	1982	Premise Match	54m	North
	MINING MACHINERY &/OR EQUIPMENT IMPS. &/OR DIST.(M3960)	Westfalia Mining Equipment Pty. Ltd., 6th Fl. 504 Pacific H'way., St. Leonards. 2065.	52787	1982	Premise Match	54m	North
	FOOD PROCESSORS &/OR PACKERS. (F4925)	Weston, George Foods Ltd., 8th Fl. 504 Pacific H'way., St. Leonards. 2065.	32034	1982	Premise Match	54m	North
	DUPLICATING &/OR TYPING SPECIALISTS.	Adhoc Office Services Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	21042	1978	Premise Match	54m	North
	CARPET &/OR FLOOR COVERING RETAILERS &/OR SPECIALISTS.	Allanson Carpets. 508 Pacific H'way, St. Leonards. 2065	11529	1978	Premise Match	54m	North
	CLOTHING - SPORTSWEAR MFRS. &/OR W/SALERS.	Belle Ladies Wear Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	15347	1978	Premise Match	54m	North
	CLOTHING - FROCKS & SUITS MFRS. &/OR W/SALERS.	Belle Ladies Wear Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	14660	1978	Premise Match	54m	North
	CLOTHING-UNIFORMS & SMOCKS MFRS. &/OR W/SALERS.	Belle Ladies Wear Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	15517	1978	Premise Match	54m	North
	COOL ROOM BUILDERS	Burton-Turner Cool Rooms Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	16297	1978	Premise Match	54m	North
	MANUFACTURERS AGENTS.	Coleman, R.S. Pty. Ltd., 504 Pacific H'Way, St. Leonards. 2065	41212	1978	Premise Match	54m	North
	DRAUGHTSMEN.	Commercial Design Consolidated Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	19696	1978	Premise Match	54m	North
	ENGINEERS-DESIGNING.	Commercial Design Consolidated Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	24208	1978	Premise Match	54m	North
	ANTI-CORROSION COMPOUNDS MFRS.	Denso (Aust.) Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	2617	1978	Premise Match	54m	North
	WEATHER SEAL MFRS.	Denso (Aust.) Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	74057	1978	Premise Match	54m	North
	ENGINEERS-CONSULTING.	Erdos, A., 504 Pacific Hwy, St. Leonards. 2065	24054	1978	Premise Match	54m	North
	SURGICAL APPLIANCE MFRS. &/OR DIST.	Guyatt & Co., 504 Pacific Highway, St. Leonards. 2065	68768	1978	Premise Match	54m	North
	SURGICAL BELTS, STOCKING, SPECIALISTS.	Guyatt & Co., 504 Pacific Highway, St. Leonards. 2065	68786	1978	Premise Match	54m	North
	SURGICAL INSTRUMENTS MFRS. &/OR SPECIALISTS.	Guyatt & Co., 504 Pacific Highway, St. Leonards. 2065	68817	1978	Premise Match	54m	North
	HOSPITAL SUPPLIES & EQUIPMENT MFRS. &/OR DIST.	Guyatt & Co., 504 Pacific H'way, St. Leonards. 2065	35788	1978	Premise Match	54m	North
	INVALID CHAIR & OR CRUTCH HIRERS.	Guyatt & Co., 504 Pacific H'way. St. Leonards. 2065	38419	1978	Premise Match	54m	North
	INVALID CHAIR MFRS.	Guyatt & Co., 504 Pacific H'way. St. Leonards. 2065	38423	1978	Premise Match	54m	North
	IMPORTERS.	Manning, Max, 504 Pacific H'way, St. Leonards. 2065	37010	1978	Premise Match	54m	North
	ENGINEERS-MINING.	Multitech Industries Pty. Ltd., 504 Pacific H'way, St. Leonards 2065	25874	1978	Premise Match	54m	North
	ENGINEERS-ELECTRICAL.	Multitech Industries Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	24389	1978	Premise Match	54m	North
	ENGINEERS-STEAM.	Multitech Industries Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	26348	1978	Premise Match	54m	North
	DUPLICATING &/OR TYPING SPECIALISTS.	North Sydney Secretarial Service, 504 Pacific H'way, St. Leonards. 2065	21098	1978	Premise Match	54m	North

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14	SCHOOLS &/ORCOLLEGES-COMMERCIAL.	North Sydney Secretarial Services, 504 Pacific Hway., St. Leonards. 2065	64894	1978	Premise Match	54m	North
	OIL BURNER MFRS.&/OR SUPPLIERS.	Peabody Holmes Ltd, 504 Pacific H'way, St Leonards 2065	54760	1978	Premise Match	54m	North
	ENGINEERS-CHEMICAL.	Peabody Holmes Ltd, 504 Pacific H'way., St Leonards. 2065	23807	1978	Premise Match	54m	North
	ENGINEERS-FURNACES &/OR COMBUSTION.	Peabody Holmes Ltd. Aiderson Building, 504 Pacific H'way, St. Leonards 2065	24787	1978	Premise Match	54m	North
	GAS BURNERS-INDUSTRIAL - MFRS. &/OR DIST.	Peabody Holmes Ltd., 504 Pacific H'way., St Leonards. 2065	32461	1978	Premise Match	54m	North
	ENGINEERS-FURNACES &/OR COMBUSTION.	Peabody Holmes Ltd., 504 Pacific H'way., St. Leonards. 2065	24801	1978	Premise Match	54m	North
	GLASS MANUFACTURERS.	Safevue Architectural Division, 504 Pacific H'way., St. Leonards. 2065	33063	1978	Premise Match	54m	North
	ENGINEERS-DESIGNING.	Space Structures Specialists Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	24242	1978	Premise Match	54m	North
	FURNITURE-KITCHEN UNITS &/OR CABINETS MFRS. &/OR W/SALERS.	Style Kitchens Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	31919	1978	Premise Match	54m	North
	BAKERS-BREAD.	Tip Top Bakeries Holdings Pty. Ltd., 504 Pacific Hway., St. Leonards. 2065	4264	1978	Premise Match	54m	North
	ENGINEERS-CHEMICAL.	Uhde, Friedrich GMBH., 504 Pacific H'way, St. Leonards. 2065	23811	1978	Premise Match	54m	North
	MINING MACHINERY &/OR EQUIPMENT IMPS. &/OR DIST. &/ORMFRS.	Westfalia Mining Equipment Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	46495	1978	Premise Match	54m	North
	AUDIO VISUAL AIDS.	3M Australia Pty Ltd. 504 Pacific Highway, St. Leonards, 2065	3595	1975	Premise Match	54m	North
	ADHESIVES-TAPE MFRS. &/OR DIST.	3M Australia Pty Ltd. 504 Pacific H'way., St. Leonards 2065	883	1975	Premise Match	54m	North
	TAPES-PRESSURE SENSITIVE.	3M Australia Pty Ltd., 504 Pacific Hghwy., St. Leonards. 2065	82197	1975	Premise Match	54m	North
	COPYING MACHINES MFRS. &/OR DIST.	3M Australia Pty Ltd., 504 Pacific Highway, St. Leonards. 2065	18946	1975	Premise Match	54m	North
	MICROFILM SERVICES.	3M Australia Pty Ltd., 504 Pacific H'way., St.Leonards. 2065	53148	1975	Premise Match	54m	North
	WINDOW TINTING.	3M Australia Pty Ltd., 504 Pacific Hwy., St.Leonards. 2065	87381	1975	Premise Match	54m	North
	EDUCATIONAL VISUAL AIDS.	3M Australia Pty. Ltd. 504 Pacific Highway, St. Leonards, 2065	25033	1975	Premise Match	54m	North
	PACKAGING TAPES &/OR SUPPLIES.	3M Australia Pty. Ltd., 504 Pacific Hghwy., St. Leonards. 2065	65206	1975	Premise Match	54m	North
	ABRASIVE MFRS.	3M Australia Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	41	1975	Premise Match	54m	North
	ADDRESSING MACHINES MFRS. &/OR DIST.	3M Australia Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	811	1975	Premise Match	54m	North
	ADHESIVES MFRS. &/OR DIST.	3M Australia Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	881	1975	Premise Match	54m	North
	CELLULOSE ADHESIVE TAPE MFRS. &/OR IMPS. &/OR DIST.	3M Australia Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	14154	1975	Premise Match	54m	North
	CHEMICAL MFRS. &/OR DIST. &/OR IMPS	3M Australia Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	14671	1975	Premise Match	54m	North
	COPYING MACHINES MFRS. &/OR DIST.	3M Australia Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	18957	1975	Premise Match	54m	North
	ELECTRICAL TAPES.	3M Australia Pty. Ltd., 504 Pacific H'way. St. Leonards. 2065	26709	1975	Premise Match	54m	North
	ELECTRICAL INSULATION &/OR INSULATORS MFRS. &/OR IMPS. &/OR DIST.	3M Australia Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	26106	1975	Premise Match	54m	North
	MEDICAL SUPPLIES.	3M Australia Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	51973	1975	Premise Match	54m	North
	MICROFILM SERVICES.	3M Australia Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	53157	1975	Premise Match	54m	North
	MUSIC SYSTEMS-BACKGROUND.	3M Australia Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	63112	1975	Premise Match	54m	North

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14	PRINTERS SUPPLIES.	3M Australia Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	70327	1975	Premise Match	54m	North
	RIBBON MFRS. &/OR DIST.	3M Australia Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	74217	1975	Premise Match	54m	North
	SIGN MFRS.	3M Australia Pty. Ltd., 504 Pacific H'Way., St. Leonards. 2065	77586	1975	Premise Match	54m	North
	TAPE-ADHESIVE-MFRS. &/OR IMPS. &/OR DIST.	3M Australia Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	82177	1975	Premise Match	54m	North
	MAGNETIC RECORDING TAPES.	3M Australia Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065.	48331	1975	Premise Match	54m	North
	CARPET &/OR FLOOR COVERING RETAILERS &/OR SPECIALISTS.	Allanson Carpets, 508 Pacific H'way, St. Leonards 2065	13458	1975	Premise Match	54m	North
	CLOTHING-SPORTSWEAR LADIES MFRS.&/OR W/SALERS	Belle Ladies Wear Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	17729	1975	Premise Match	54m	North
	CLOTHING - FROCKS & SUITS MFRS. &/OR W/SALERS.	Belle Ladies Wear Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	16908	1975	Premise Match	54m	North
	CLOTHING-UNIFORMS & SMOCKS MFRS.&/OR W/SALERS	Belle Ladies Wear Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	17970	1975	Premise Match	54m	North
	MANUFACTURERS AGENTS.	Coleman, R. S. Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065.	48666	1975	Premise Match	54m	North
	DRAUGHTSMEN.	Commercial Design & Manufacturing Service Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	22689	1975	Premise Match	54m	North
	ENGINEERS-DESIGNING	Commercial Design & Manufacturing Service Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	27995	1975	Premise Match	54m	North
	MINING COMPANIES	Cyprus Mines Corp., 504 Pacific Hwy., St. Leonards. 2065	54166	1975	Premise Match	54m	North
	WEATHER SEAL MFRS.	Denso (Aust.) Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	86707	1975	Premise Match	54m	North
	ENGINEERS-CONSULTING.	Erdos, A., 504 Pacific Hwy, St. Leonards. 2065.	27816	1975	Premise Match	54m	North
	EXPORTERS.	Fowler D & J (Aust) Ltd., 508 Pacific H'way, St Leonards. 2065	31015	1975	Premise Match	54m	North
	DRAUGHTSMEN.	Frankie, K. Draughting Service, 504 Pacific H'way., St. Leonards. 2065	22694	1975	Premise Match	54m	North
	FILM DIST. &/OR EXCHANGES.	Fremantle International (Aust.) Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	31659	1975	Premise Match	54m	North
	TELEVISION PROGRAMME PRODUCERS.	Fremantle International Productions Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	82456	1975	Premise Match	54m	North
	DRAUGHTSMEN.	Goldie Contract Draughting, 504 Pacific H'way, St. Leonards. 2065	22698	1975	Premise Match	54m	North
	ENGINEERS-CIVIL	Kant Engineering & Construction Pty. Ltd., 504 Pacific H'way, St. Leonards 2065	27610	1975	Premise Match	54m	North
	BUILDERS &/OR BUILDING CONTRACTORS.	Kant Engineering & Construction Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	8540	1975	Premise Match	54m	North
	ENGINEERS-CONSTRUCTIONAL	Kant Engineering & Construction Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	27726	1975	Premise Match	54m	North
	RUBBER GOODS MFRS-INDUSTRIAL	Leggett, Rubber Industries Ltd., 504 Pacific H'way., St. Leonards.	74831	1975	Premise Match	54m	North
	RUBBER GOODS MFRS. &/OR DIST.	Leggett. Rubber Industries Ltd., 504 Pacific H'way., St. Leonards. 2065	74805	1975	Premise Match	54m	North
	DRAUGHTSMEN.	Louws, J. Contract Draughting, 504 Pacific H'way, St. Leonards. 2065	22704	1975	Premise Match	54m	North
	IMPORTERS.	Manning.Mat., 504 Pacific H'way., St. Leonards. 2065	43811	1975	Premise Match	54m	North
	AUTOMATIC CONTROL EQUIPMENT IMPS. &/OR DIST.	Measures Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	3643	1975	Premise Match	54m	North

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14	INSTRUMENTS – INDUSTRIAL MFRS. &/OR DISTS	Measurex Pty Ltd., 504 Pacific H'way, St. Leonards. 2065	44414	1975	Premise Match	54m	North
	ENGINEERS-MINING.	Multitech Industries Pty. Ltd., 504 Pacific H'way, St. Leonards.	29874	1975	Premise Match	54m	North
	ENGINEERS-ELECTRICAL	Multitech Industries Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065.	28217	1975	Premise Match	54m	North
	ENGINEERS-STEAM.	Multitech Industries Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065.	30418	1975	Premise Match	54m	North
	DUPLICATING &/OR TYPING SPECIALISTS.	North Sydney Secretarial Service, 504 Pacific H'way, St. Leonards,	24564	1975	Premise Match	54m	North
	SCHOOLS &/OR COLLEGES-COMMERCIAL	North Sydney Secretarial Services., 504 Pacific H'way., St. Leonards. 2065	75907	1975	Premise Match	54m	North
	RECORD MFRS. &/OR IMPS. &/OR DISTS.	Scala Record Import Co. Pty. Ltd., 504 Pacific H'way., St. Leonards. 2065	73199	1975	Premise Match	54m	North
	ENGINEERS-DESIGNING	Space Structures Specialists Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065.	28034	1975	Premise Match	54m	North
	PHOTOGRAPHERS-COMMERCIAL	Studio 504., 504 Pacific H'way., St. Leonards. 2065	66702	1975	Premise Match	54m	North
	FURNITURE-KITCHEN UNITS &/OR CABINET MFRS. &/OR W/SALERS	Style Kitchens Pty. Ltd., 504 Pacific H'way, St., Leonards. 2065	37069	1975	Premise Match	54m	North
	HOLDING COMPANIES.	Tip Top Bakeries Holdings Pty. Ltd., 504 Pacific H'way., St Leonards. 2065	42264	1975	Premise Match	54m	North
	CELLULOSE PAPER IMPS. &/OR W/SALERS.	Transparent Paper Australia Pty. Ltd. 504-520 Pacific Hghwy. St. Leonards 2065	14190	1975	Premise Match	54m	North
	CELLULOSE PAPER IMPS. &/OR W/SALERS.	Transparent Paper Australia Pty. Ltd., 504 Pacific H'way, St. Leonards. 2065	14197	1975	Premise Match	54m	North
	PACKING & PACKAGING MATERIALS MFRS. &/OR SUPPLIERS.	Transparent Paper Australia Pty. Ltd., 504 Pacific H'way., St Leonards. 2065	65271	1975	Premise Match	54m	North
	ENGINEERS-CHEMICAL	Uhde, Friedrich. (G.M.B.H.), 504 Pacific H'way, St. Leonards. 2065.	27547	1975	Premise Match	54m	North
	HOLDING COMPANIES.	Weston.George Foods Ltd., 504 Pacific H'way., St. Leonards. 2065	42268	1975	Premise Match	54m	North
	ENGINEERS-CONSULTING.	Yeates J. N. & Associates, 504 Pacific H'way, St. Leonards. 2065.	27966	1975	Premise Match	54m	North
	CELLULOSE ADHESIVE TAPE IMPS. &/OR DISTS. (C195)	3M Minnesota Mining & Mfrg (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards	278858	1970	Premise Match	54m	North
	TEXTILE MFRS.' SUPPLIERS	3M Minnesota Mining & Mfrg. (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards	368348	1970	Premise Match	54m	North
	PAPER-SENSITISED-MFRS. (P149)	3M Minnesota Mining & Mfrg. (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards	347222	1970	Premise Match	54m	North
	SIGN MANUFACTURERS (S317)	3M Minnesota Mining & Mfrg. (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards	361500	1970	Premise Match	54m	North
	ENGINEERS-CONSULTING (E550)	Ad Hoc Pty. Ltd., 504 Pacific Highway., St Leonards	297680	1970	Premise Match	54m	North
	AIR CONDITIONING UNIT &/OR MACHINERY MFRS.	Amelco Engineers Pty. Ltd., 504 Pacific Hghwy., St., Leonards	260784	1970	Premise Match	54m	North
	ENGINEERS-AIR CONDITIONING (E490)	Amelco Engineers Pty. Ltd., 508 Pacific Highway., St Leonards	297330	1970	Premise Match	54m	North
	BUILDERS & CONTRACTORS (B800)	Austin-Anderson (Aust.) Pty. Ltd., 504 Pacific Hghwy., St. Leonards	269930	1970	Premise Match	54m	North
	ENGINEERS-DESIGNING (E560)	Austin-Anderson (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards.	297927	1970	Premise Match	54m	North
	ENGINEERS-CONSTRUCTIONAL	Austin-Anderson (Aust.) Pty. Ltd., 504-520 Pacific Highway., St Leonards, 2065.	296903	1970	Premise Match	54m	North
	DATA-PROCESSING BUREAUX (D071)	Australian Data Processing Ltd., 508 Pacific Highway., St. Leonards	287047	1970	Premise Match	54m	North
	MOTOR CAR WASH INSTALLATIONS(M562)	Auto-Magic Car Wash., 504 Pacific Highway., St. Leonards.	335748	1970	Premise Match	54m	North
	BLUE PRINTERS (B442)	Blue Printing & Copying Service., 504 Pacific Hghwy., St. Leonards	267370	1970	Premise Match	54m	North

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
14	PLAN PRINTERS (P528)	Blue Printing & Copying Service., 504 Pacific Highway., St Leonards	349181	1970	Premise Match	54m	North
	COPYING SPECIALISTS (C673)	Blueprinting & Copying Service., 504 Pacific Highway., St. Leonards	285855	1970	Premise Match	54m	North
	CHEMICAL IMPORTERS &/OR DISTRIBUTORS (C265)	Boehringer Ingelheim Pty. Ltd., 504 Pacific Highway, St Leonards	279187	1970	Premise Match	54m	North
	CHEMICAL MANUFACTURERS &/OR DISTRIBUTORS (C268)	Boehringer Ingelheim Pty. Ltd., 504 Pacific Highway., St Leonards	279321	1970	Premise Match	54m	North
	MANUFACTURERS' AGENTS (M112)	Coleman, R. S. Pty. Ltd., 504 Pacific Highway., St. Leonards	324768	1970	Premise Match	54m	North
	MINING COMPANIES	Cyprus Mines Corp., 504 Pacific Highway., St Leonards. 2065	331689	1970	Premise Match	54m	North
	PLASTIC MFRS. &/OR MOULDERS(P580)	Delohery, J. Sales., 504 Pacific Highway., St. Leonards	349844	1970	Premise Match	54m	North
	PLASTIC GOODS IMPORTERS & DISTRIBUTORS (P560)	Delohery, J. Sales., 508 Pacific Highway., St. Leonards	349585	1970	Premise Match	54m	North
	PLASTIC GOODS MFRS. (P564)	Delohery, J. Sales., 508 Pacific Highway., St. Leonards	349663	1970	Premise Match	54m	North
	PLASTIC LAMINATED PRODUCTS MANUFACTURERS (P576)	Delohery, J. Sales., 508 Pacific Highway., St. Leonards	349771	1970	Premise Match	54m	North
	PAINT-INDUSTRIAL PROTECTIVE COATINGS (P030)	Dimet Coatings Pty. Ltd., 504 Pacific Hghwy., St. Leonards	346807	1970	Premise Match	54m	North
	PAINT-INDUSTRIAL PROTECTIVE COATINGS (P030)	DIMET COATINGS PTY. LTD., 504 PACIFIC HGHWY., ST. LEONARDS, 2065	346806	1970	Premise Match	54m	North
	CORROSION PREVENTION & CONTROL SPECIALISTS (C684)	Dimet Coatings Pty. Ltd., 504 Pacific Highway., St. Leonards	285908	1970	Premise Match	54m	North
	PAINT-MARINE-MFRS. &/OR DISTRIBUTORS (P049)	Dimet Coatings Pty. Ltd., 504 Pacific Highway., St. Leonards	346860	1970	Premise Match	54m	North
	PAINT-ANTI -CORROSIVE-MFRS.	DIMET COATINGS PTY. LTD., SUITE 404., ALDERSON BUILDINGS., 504 PACIFIC Hghwy., St. LEONARDS 2065	346481	1970	Premise Match	54m	North
	RUSTPROOFING MATERIALS (R570)	Dimet Corrosion Prevention Pty. Ltd., 504 Pacific Highway, St. Leonards	358306	1970	Premise Match	54m	North
	ZINC-RICH COATINGS MFRS./DISTS.	DIMET CORROSION PTY LTD, 504 PACIFIC HIGHWAY., ST LEONARDS, 2065	375646	1970	Premise Match	54m	North
	ENGINEERS-CONSULTING (E550)	Erdos, A., 504 Pacific Highway., St Leonards	297747	1970	Premise Match	54m	North
	FILM DIST./FILM EXCHANGES (F130)	Fremantle International (Aust.) Pty. Ltd., 504-520 Pacific Hghwy., St. Leonards	302592	1970	Premise Match	54m	North
	TELEVISION PROGRAMME PRODUCERS (T154)	Fremantle International Productions Pty. Ltd., 504 Pacific Highway., St Leonards	367683	1970	Premise Match	54m	North
	BUILDERS & CONTRACTORS (B800)	Henley Constructions Pty. Ltd., 504 Pacific Hghwy., St Leonards	270163	1970	Premise Match	54m	North
	DATA-PROCESSING BUREAUX (D071)	Imac Information Management & Control Pty. Ltd., 504 Pacific Highway., St. Leonards	287069	1970	Premise Match	54m	North
	TELEVISION PROGRAMME PRODUCERS (T154)	Jetfilm Productions, 504 Pacific Highway., St Leonards	367686	1970	Premise Match	54m	North
	FILM PRODUCERS (F155)	Jetfilm Productions., 504 Pacific Hghwy., St. Leonards	302691	1970	Premise Match	54m	North
	ENGINEERS-CONSTRUCTIONAL	Kant Engineering & Construction Pty. Ltd., 504 Pacific Highway, St Leonards	296939	1970	Premise Match	54m	North
	BUILDERS & CONTRACTORS (B800)	Kant Engineering & Construction Pty. Ltd., 504-520 Pacific Hghwy., St. Leonards	270212	1970	Premise Match	54m	North
	ENGINEERS-CIVIL (E530)	Kant Engineering & Construction Pty. Ltd., 504-520 Pacific Highway., St Leonards	297572	1970	Premise Match	54m	North
	RUBBER GOODS MANUFACTURERS &/OR DISTRIBUTORS	Leggett Rubber Industries Ltd., 504 Pacific Highway, St. Leonards	358093	1970	Premise Match	54m	North

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
14	RUBBER GOODS MFRS.-INDUSTRIAL(R485)	Leggett Rubber Industries Ltd., 504 Pacific Highway., St. Leonards	358062	1970	Premise Match	54m	North
	ENGINEERS-CONSULTING (E550)	Mackerras & Frame., 504 Pacific Highway., St Leonards, 2065	297799	1970	Premise Match	54m	North
	PLASTIC EXTRUDERS (P554)	Mahlco Plastic Industries Pty. Ltd., 504 Pacific Hghwy., St Leonards	349495	1970	Premise Match	54m	North
	PLASTIC HOSE MFRS. (P572)	Mahlco Plastic Industries Pty. Ltd., 504 Pacific Highway., St Leonards	349762	1970	Premise Match	54m	North
	COSMETIC CONTAINER MFRS. (C689)	Mahlco Plastic Industries Pty. Ltd., 504 Pacific Highway., St. Leonards	285971	1970	Premise Match	54m	North
	PLASTIC CONTAINER MFRS. &/OR DISTRIBUTORS (P549)	Mahlco Plastic Industries Pty. Ltd., 504 Pacific Highway., St. Leonards	349376	1970	Premise Match	54m	North
	PLASTIC DIE/MOULD MFRS. (P552)	Mahlco Plastic Industries Pty. Ltd., 504 Pacific Highway., St. Leonards	349441	1970	Premise Match	54m	North
	PLASTIC GOODS MFRS. (P564)	Mahlco Plastic Industries Pty. Ltd., 504 Pacific Highway., St. Leonards	349698	1970	Premise Match	54m	North
	IMPORTERS (I200)	Mallory Batteries (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards	318528	1970	Premise Match	54m	North
	BATTERY-DRY CELL-MFRS. (B195)	Mallory Batteries (Australasia) Pty. Ltd., 504-520 Pacific Highway., St Leonards, 2065	265411	1970	Premise Match	54m	North
	IMPORTERS (I200)	Manning, M., 504 Pacific Highway., St. Leonards	318534	1970	Premise Match	54m	North
	ENGINEERS-CONSULTING (E550)	McDonald Engineering Design., 504 Pacific Highway., St Leonards	297808	1970	Premise Match	54m	North
	ENGINEERS-DESIGNING (E560)	McDonald Engineering Design., 504 Pacific Highway., St Leonards	297966	1970	Premise Match	54m	North
	ENGINEERS-ELECTRICAL (E570)	McDonald Engineering Design., 504 Pacific Highway., St Leonards	298226	1970	Premise Match	54m	North
	ADHESIVE MFRS &/OR DIST (A120)	Minnesota Mining & Manufacturing (Aust) Pty. Ltd., 504 Pacific Hghwy., St Leonards	259742	1970	Premise Match	54m	North
	TYPEWRITER RIBBON MFRS. (T745)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd, 504 Pacific Highway, St Leonards.	371555	1970	Premise Match	54m	North
	ELECTRICAL INSULATION & INSULATORS MFRS. &/OR IMP. &/OR DISTRIBUTORS (E310)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Hghwy., St Leonards.	295472	1970	Premise Match	54m	North
	MAGNETIC RECORDING TAPE (SPECIAL)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Hghwy., St. Leonards.	324397	1970	Premise Match	54m	North
	MUSIC SYSTEMS-BACKGROUND(M778)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Hghwy., St. Leonards.	342913	1970	Premise Match	54m	North
	PRINTERS' SUPPLIES (P836)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Hghwy., St. Leonards.	351813	1970	Premise Match	54m	North
	ABRASIVE MANUFACTURERS (A025)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards	258428	1970	Premise Match	54m	North
	CHEMICAL MANUFACTURERS &/OR DISTRIBUTORS (C268)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards	279442	1970	Premise Match	54m	North
	MICROFILM SERVICES (M334)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards.	330253	1970	Premise Match	54m	North
	TAPE-TYING-MFRS./W'SALERS	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards.	367213	1970	Premise Match	54m	North
	VINYL' FILMS (SPECIAL)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards.	372797	1970	Premise Match	54m	North
	COPYING MACHINES-MFRS. &/OR DIST. (C672)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards	285843	1970	Premise Match	54m	North
	ELECTRICAL TAPES (SPEC.)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards.	296269	1970	Premise Match	54m	North

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14	MEDICAL SUPPLIES (M220)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards.	328657	1970	Premise Match	54m	North
	OFFICE CLEANERS' SUPPLIES (SPECIAL)	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards.	344633	1970	Premise Match	54m	North
	ADHESIVE TAPE MFRS. & DIST.	Minnesota Mining & Manufacturing (Aust.) Pty. Ltd., Alderson Bldg., 504-520 Pacific Hghwy., St Leonards	259771	1970	Premise Match	54m	North
	ELECTRICAL SUPPLIES/APPLIANCES MANUFACTURERS (E320)	Minnesota Mining & Manufacturing Pty. Ltd., 504 Pacific Hghwy., St. Leonards	296152	1970	Premise Match	54m	North
	PACKING MATERIALS (P010)	Minnesota Mining & Manufacturing Pty. Ltd., 504 Pacific Hghwy., St. Leonards	345914	1970	Premise Match	54m	North
	ABRASIVE DISTRIBUTORS &/OR MERCHANTS (A020)	Minnesota Mining & Manufacturing Pty. Ltd., 504 Pacific Highway., St Leonards	258389	1970	Premise Match	54m	North
	ENGINEERS-ELECTRICAL (E570)	Multitech Industries Pty. Ltd., 504 Pacific Highway., St Leonards	298240	1970	Premise Match	54m	North
	ENGINEERS-GENERAL &/OR MFRG.&/OR MECHANICAL (E615)	Multitech Industries Pty. Ltd., 504 Pacific Highway., St Leonards	299406	1970	Premise Match	54m	North
	ENGINEERS-MINING (E685)	Multitech Industries Pty. Ltd., 504 Pacific Hwly., St Leonards	300264	1970	Premise Match	54m	North
	ENGINEERS-STEAM (E760)	Multitech Industries Pty. Ltd., 504 Pacific Hwly., St Leonards	300995	1970	Premise Match	54m	North
	FILM PRODUCERS (F155)	Nelson, R. Productions Pty. Ltd., 504 Pacific Hghwy., St. Leonards	302698	1970	Premise Match	54m	North
	TELEVISION PROGRAMME PRODUCERS (T154)	Nelson, R. Productions Pty. Ltd., 504 Pacific Highway., St Leonards	367693	1970	Premise Match	54m	North
	PRINTERS-LITHOGRAPHIC (OFFSET)(P810)	North Sydney Secretarial Service., 504 Pacific Hghwy., St. Leonards	352649	1970	Premise Match	54m	North
	COPYING SPECIALISTS (C673)	North Sydney Secretarial Service., 504 Pacific Highway., St. Leonards	285868	1970	Premise Match	54m	North
	DUPLICATING &/OR TYPING SPEC.	North Sydney Secretarial Service., 504-520 Pacific Highway., St Leonards	292753	1970	Premise Match	54m	North
	SCHOOLS/COLLEGES-COMMERCIAL(S137)	North Sydney Secretarial Services, 504 Pacific Highway., St. Leonards	359547	1970	Premise Match	54m	North
	CHEMICAL IMPORTERS &/OR DISTRIBUTORS (C265)	Orobis Australia Pty. Ltd., 504 Pacific Highway., St Leonards	279264	1970	Premise Match	54m	North
	RECORD MANUFACTURERS &/OR IMPORTERS (R215)	Scala Record Import Co. Pty. Ltd., 504 Pacific Highway, St Leonards	356313	1970	Premise Match	54m	North
	BOILER PLANT IMPS. &/OR DIST.(B495)	Senior Economisers (Aust.) Pty. Ltd., 504 Pacific Hghwy, St Leonards	267847	1970	Premise Match	54m	North
	ENGINEERS-GENERAL &/OR MFRG.&/OR MECHANICAL (E615)	Senior Economisers (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards	299605	1970	Premise Match	54m	North
	HEAT EXCHANGER MANUFACTURERS &/OR DISTRIBUTORS	Senior Economisers (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards	316137	1970	Premise Match	54m	North
	STEEL TUBING MFRS./DISTRIBUTORS(S727)	Senior Economisers (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards	365722	1970	Premise Match	54m	North
	IMPORTERS (I200)	Senior Economisers (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards	318724	1970	Premise Match	54m	North
	MANUFACTURERS' AGENTS (M112)	Senior Economisers (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards	325282	1970	Premise Match	54m	North
	ENGINEERS-FURNACE/COMBUSTION (E605)	Senior Economisers (Aust.) Pty. Ltd., 504-520 Pacific Highway., St Leonards	298797	1970	Premise Match	54m	North
	ENGINEERS-STEAM (E760)	Senior Economisers (Aust.) Pty. Ltd., 504-520 Pacific Highway., St Leonards	301003	1970	Premise Match	54m	North
	ENGINEERS-CONSULTING (E550)	Sinclair & Knight., 504 Pacific Highway., St Leonards	297855	1970	Premise Match	54m	North
	OVEN MFRS. -INDUSTRIAL (O 340)	Spooner Machinery (Aust.) Pty. Ltd., 504 Pacific Hghwy., St. Leonards, 2065	345625	1970	Premise Match	54m	North

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
14	ENGINEERS-BAKERY (E500)	Spooner Machinery (Aust.) Pty. Ltd., 504 Pacific Highway., St Leonards, 2065	297455	1970	Premise Match	54m	North
	BISCUIT MFRS.' MACHINERY (B360)	Spooner Machinery (Aust.) Pty. Ltd., 504 Pacific Highway., St. Leonards, 2065	267031	1970	Premise Match	54m	North
	PHOTOGRAPHERS-COMMERCIAL(P272)	Studio 504., 504 Pacific Highway., St. Leonards	347966	1970	Premise Match	54m	North
	HOLDING COMPANIES (H470)	Tip Top Bakeries Holdings Pty. Ltd., 504 Pacific Highway., St. Leonards	316469	1970	Premise Match	54m	North
	PACKAGING/PACKING SPEC. (P 004)	Transparent Paper Aust. Pty. Ltd., 504 Pacific Hghwy., St. Leonards	345827	1970	Premise Match	54m	North
	PACKING MATERIALS (P010)	Transparent Paper Australia Pty. Ltd., 504 Pacific Hghwy., St. Leonards.	345919	1970	Premise Match	54m	North
	CELLULOSE PAPER IMPS. &/OR WHOLESALERS (C207)	Transparent Paper Australia Pty. Ltd., 504 Pacific Highway., St.Leonards	278937	1970	Premise Match	54m	North
	ENGINEERS-CHEMICAL (E520)	Uhde, F., 504 Pacific Highway., St Leonards	297504	1970	Premise Match	54m	North
	BUILDERS & CONTRACTORS (B800)	V.H.Y. Pty. Ltd., 508 Pacific Hghwy., St. Leonards	270429	1970	Premise Match	54m	North
	HOLDING COMPANIES (H470)	Weston, G. Foods Ltd., 504 Pacific Highway., St. Leonards	316473	1970	Premise Match	54m	North
	ENGINEERS-CONSULTING (E550)	Yeates, J. N. & Associates., 504-520 Pacific Highway., St Leonards	297903	1970	Premise Match	54m	North
	Engineers - Air Conditioning	Amelco Engineers Pty. Ltd., 508 Pacific Hghwy., St Leonards	80653	1965	Premise Match	54m	North
	Film & Projector Hirers	Audio Visual Equipment & Services Pty. Ltd., 508 Pacific Hghwy., St. Leonards	86099	1965	Premise Match	54m	North
	Film Equipment Importers &/or Distributors	Audio Visual Equipment & Services Pty. Ltd., 508 Pacific Hghwy., St. Leonards	86033	1965	Premise Match	54m	North
	Film Producers	Audio Visual Equipment & Services Pty. Ltd., 508 Pacific Hghwy., St. Leonards	86069	1965	Premise Match	54m	North
	Film Projector Mfrs./Dist.	Audio Visual Equipment & Services Pty. Ltd., 508 Pacific Hghwy., St. Leonards	86110	1965	Premise Match	54m	North
	Audio Visual Equipment	Audio Visual Equipment & Services Pty. Ltd., Anderson Bldg., 504-520 Pacific Highway. St. Leonards	48579	1965	Premise Match	54m	North
	Builders & Contractors - (M.M.B.A.)	Cawarra Construction Co. (Aust.), 504 Pacific Highway. St Leonards	54981	1965	Premise Match	54m	North
	Engineers - Air Conditioning	Hendy Industries Pty. Ltd. , 506 Pacific Hghwy., St. Leonards	80694	1965	Premise Match	54m	North
	Engineers - Hot Water, Heating/Ventilating	Hendy, Ian Industries Pty. Ltd., 506 Pacific Hghwy., St. Leonards	83172	1965	Premise Match	54m	North
	Engineers - Civil	Kant Engineering & Construction Pty. Ltd., 504-520 Pacific Hghwy., St. Leonardo	80856	1965	Premise Match	54m	North
	Builders & Contractors	Kant Engineering & Construction Pty. Ltd., 504-520 Pacific Highway St. Leonards	55402	1965	Premise Match	54m	North
	Photographers - Commercial	Kerrigan, D., 504-520 Pacific Hghwy., St. Leonards	132332	1965	Premise Match	54m	North
	Rubber Goods Manufacturers &/or Dist.	Leggett Rubber Industries Ltd., 506-510 Pacific Hghwy., St. Leonards	141368	1965	Premise Match	54m	North
	Rubber Goods Mfrs. - Industrial	Leggett Rubber Industries Ltd., 506-510 Pacific Hghwy., St. Leonards	141404	1965	Premise Match	54m	North
	Chemists - Biological	Lilly Industries, 504-520 Pacific Highway., St. Leonards	64375	1965	Premise Match	54m	North
	Chemists - Manufacturing &/or Wholesale	Lilly Industries, 504-520 Pacific Highway., St. Leonards	64560	1965	Premise Match	54m	North
	Battery - Dry Cell - Mfrs.	Mallory Batteries (A/Asia) Pty. Ltd., 504-520 Pacific Highway., St. Leonards	50096	1965	Premise Match	54m	North
	Schools/Colleges - Commercial	Manhattan Courses (Aust.) Pty.Ltd., 504 Pacific Hghwy., St. Leonards	142736	1965	Premise Match	54m	North

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14	Manchester Specialists/Retailers	North Shore Trading Co. (The), 505-510 Pacific Hghwy., St. Leonards	109147	1965	Premise Match	54m	North
	TEXTILE MERCHANTS	North Shore Trading Co. (The), 508 Pacific Hghwy., St. Leonards	151170	1965	Premise Match	54m	North
	TEXTILES IMPORTERS &/OR WHOLESALERS	North Shore Trading Co. (The), 508-510 Pacific Hghwy., St. Leonards	150916	1965	Premise Match	54m	North
	Duplicating/Typing Specs.	North Sydney Secretarial Service, 504 -520 Pacific Hghwy., St. Leonards	76538	1965	Premise Match	54m	North
	Photographic Supplies	P.M. Photographic Co. Pty. Ltd., 508 Pacific Hghwy., St. Leonards	132772	1965	Premise Match	54m	North
	Well - Drilling Contractors	Ranney Method Water Supplies., 504-520 Pacific Hghwy., St. Leonards	157041	1965	Premise Match	54m	North
	Record Manufacturers &/or Importers	Scala Record Import Co., 504-520 Pacific Hghwy., St. Leonards	139813	1965	Premise Match	54m	North
	Engineers - Steam	Senior Economisers (Aust.) Pty. Ltd., 504-520 Pacific Hghwy., St. Leonards	84214	1965	Premise Match	54m	North
	Engineers - Furnace/Combustion	Senior Economisers (Aust.) Pty. Ltd., 504-520 Pack Hghwy., St. Leonards	82022	1965	Premise Match	54m	North
	Engineers - Consulting	Sinclair, A. B., 508 Pacific Hghwy., St. Leonards	81174	1965	Premise Match	54m	North
	Chemists - Pharmaceutical	St. Leonards Pharmacy, 522 Pacific Highway., St. Leonards	65583	1965	Premise Match	54m	North
	Importers	Stern & Co., 504 Pacific Hghwy., St. Leonards	102972	1965	Premise Match	54m	North
	Record Manufacturers &/or Importers	Universal Record Club., 504 Pacific Hghwy., St. Leonards	139816	1965	Premise Match	54m	North
	Builders & Contractors	V.H.Y. Pty. Ltd., 508 Pacific Highway., St. Leonards	55683	1965	Premise Match	54m	North
	Engineers - Consulting	Yeates, J. N. & Associates., 504-520 Pacific Hghwy., St. Leonards	81212	1965	Premise Match	54m	North
	CHEMICAL MANUFACTURERS &/OR DISTRIBUTORS	Alderson Products Pty. Ltd., 504 Pacific Highway., St. Lnnds	286523	1961	Premise Match	54m	North
	ENGINEERS-CONSULTING	Curtin, Kevin J., 508-510 Pacific Highway., St. Leonards	305063	1961	Premise Match	54m	North
	RUBBER GOODS MANUFACTURERS &/OR DISTRIBUTORS	Leggett Rubber Industries Ltd., 508-510 Pacific Highway., St. Leonards	246930	1961	Premise Match	54m	North
	RUBBER GOODS MFRS.-INDUSTRIAL	Leggett Rubber Industries Ltd., 508-510 Pacific Highway., St. Leonards	246975	1961	Premise Match	54m	North
	MANCHESTER SPECIALISTS/RETAILERS	North Shore Trading Co. (The), 505-510 Pacific Highway., St. Leonards	332915	1961	Premise Match	54m	North
	TEXTILE MERCHANTS	North Shore Trading Co. (The), 508 Pacific Highway., St. Leonards	256623	1961	Premise Match	54m	North
	BLANKET-MFRS., W'SALERS	North Shore Trading Co. (The), 508-510 Pacific Highway., St. Leonards	273251	1961	Premise Match	54m	North
	PHOTOGRAPHIC DEVELOPING, PRINTING/COLOURING SERVICES	P-M Photo Finishing Service, 508 Pacific Highway., St. Leonards	357858	1961	Premise Match	54m	North
	INDUSTRIAL LIGHTING DESIGNERS	Smith Allan W 508-510 Pacific Highway., St. Leonards	327054	1961	Premise Match	54m	North
	ELECTRIC LIGHTING SPECIALISTS-INSTALLERS &/OR DESIGNERS	Smith, W. A., 510 Pacific Highway., St. Leonards	300832	1961	Premise Match	54m	North
	ENGINEERS-CONSULTING	Sproul, M., 508 Pacific Sghwy., St. Leonards	305174	1961	Premise Match	54m	North
	CHEMICAL MANUFACTURERS	Alderson Products Pty. Ltd., 504 Pacific Highway., St. Leonards	20981	1950	Premise Match	54m	North
	CHEMISTS-MANUFACTURING & WHOLESALE	Alderson Products Pty. Ltd., 504 Pacific Highway., St. Leonards	70398	1950	Premise Match	54m	North
	CHEMISTS-INDUSTRIAL	Alderson Products, 504 Pacific Highway., St. Leonards	21234	1950	Premise Match	54m	North
	COSMETIC MANUFACTURERS & WHOLESALE	Alderson Products, 504 Pacific Highway., St. Leonards	29195	1950	Premise Match	54m	North
	COSMETIC MANUFACTURERS' SUPPLIES	Alderson Products, 504 Pacific Highway., St. Leonards	29294	1950	Premise Match	54m	North

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14	EMULSION MANUFACTURERS	Alderson Products, 504 Pacific Highway., St. Leonards	39544	1950	Premise Match	54m	North
	HAIRDRESSERS' SUPPLIES	Alderson Products., 504 Pacific Hghwy., St. Leonards	60214	1950	Premise Match	54m	North
	FURNITURE REMOVALISTS &/OR STORAGE	Bray and Lane., 512 Pacific Hghwy., St. Leonards	53173	1950	Premise Match	54m	North
	TAXI TRUCK OPERATORS	North Shore Taxi Trucks, 512 Pacific Hghwy., St. Leonards	107226	1950	Premise Match	54m	North
	CARRIERS & CARTAGE CONTRACTORS	North Shore Taxi Trucks, 512 Pacific Highway., St. Leonards	19501	1950	Premise Match	54m	North
	SECONDHAND DEALERS	Regent, Thelma, 518 Pacific Highway., St. Leonards	101288	1950	Premise Match	54m	North
15	CARPET & FLOOR COVERING RETAILERS &/OR SPECIALISTS(C135)	Eastern Emporium (The)., 500 Pacific Highway., St Leonards	277734	1970	Premise Match	58m	North East
	CARPET & FLOOR COVERING IMPS. &/OR WHOLESALEERS (C123)	Eastern Emporium (The)., 500 Pacific Highway., St. Leonards	277580	1970	Premise Match	58m	North East
	NAPERY SPECIALISTS (N050)	Eastern Emporium (The)., 500 Pacific Hghwy., St. Leonards	343298	1970	Premise Match	58m	North East
	FURNITURE & FURNISHINGS (F726)	Eastern Emporium (The)., 500 Pacific Highway., St Leonards	308659	1970	Premise Match	58m	North East
	LINEN MFRS., IMPORTERS &/OR WHOLESALEERS	Eastern Emporium (The)., 500 Pacific Highway., St. Leonards	323430	1970	Premise Match	58m	North East
	Footwear Wholesalers &/or Distributors	Eastern Emporium (The), 500 Pacific Hghwy., St. Leonards	89181	1965	Premise Match	58m	North East
	Furniture & Furnishings	Eastern Emporium (The), 500 Pacific Hghwy., St. Leonards	93128	1965	Premise Match	58m	North East
	Linen Mfrs., Importers &/or Wholesalers	Eastern Emporium (The), 500 Pacific Hghwy., St. Leonards	107979	1965	Premise Match	58m	North East
	Napery Specialists	Eastern Emporium (The), 500 Pacific Hghwy., St. Leonards	127944	1965	Premise Match	58m	North East
	Carpet & Floor Covering Imps. &/Wholesalers	Eastern Emporium (The), 500 Pacific Highway., St. Leonards	62338	1965	Premise Match	58m	North East
16	EXPORTERS.	Yip, P. & Son Co., 538 Pacific H'way, St Leonards 2065	31213	1975	Premise Match	64m	North
	IMPORTERS.	Yip.John Wah & Co., 538 Pacific H'way., St. Leonards. 2065	44029	1975	Premise Match	64m	North
	IMPORTERS.	Yip.P. & Son Co., 538 Pacific H'way., St. Leonards. 2065	44030	1975	Premise Match	64m	North
	IMPORTERS (I200)	Yip, John Wah & Co., 538 Pacific Highway., St. Leonards	318893	1970	Premise Match	64m	North
	IMPORTERS (I200)	Yip, P. & Son Co., 538 Pacific Highway., St. Leonards	318894	1970	Premise Match	64m	North
	EXPORTERS (E835)	Yip, P.& Son Co., 538 Pacific Hghwy., St. Leonards	301929	1970	Premise Match	64m	North
	WINE/SPIRIT MERCHANTS-RETAIL	Northern Suburbs Liquor Supply, 538 Pacific Highway, St. Leonards	263095	1961	Premise Match	64m	North
17	Film Producers	Cutting House, 65 Nicholson St., St Leonards 2065	45557	1991	Premise Match	65m	East
18	PHOENIX FANS	Murrell, Harrie Pty. Ltd., 540 Pacific H'way, St. Leonards. 2065	27058	1978	Premise Match	67m	North
	Copying Specialists	North Sydney Secretarial Service, 540 Pacific Hghwy., St. Leonards	70594	1965	Premise Match	67m	North
	Printers - Lithographic	North Sydney Secretarial Service., 540 Pacific Hghwy., St. Leonards	136501	1965	Premise Match	67m	North
	DUPLICATING/TYPING SPECS.	North Sydney Secretarial Service, 540 Pacific Highway., St. Leonards	299507	1961	Premise Match	67m	North
19	PUBLISHERS.	World Book (Australia) Pty. Ltd. (Incorporated In A.C.T.), 71 Lithgow St., St Leonards. 2065.	78360	1986	Premise Match	70m	West
20	MOTOR GEAR &/OR TRANSMISSION SPECIALISTS. (M6920)	Automatic Gearbox Service, Rear 548 Pacific H'way., St. Leonards. 2065.	57895	1982	Premise Match	73m	North West
	COURIER SERVICES.	Mercury Messengers, 564 Pacific H'way, St. Leonards. 2065	16596	1978	Premise Match	73m	North West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
20	MESSENGER SERVICES.	Mercury Messengers, 564 Pacific H'way, St. Leonards. 2065	45396	1978	Premise Match	73m	North West
	STEEL IMPORTERS.	Richard Thomas & Baldwins (Aust) Pty. Ltd., 564 Pacific H'way., St Leonards. 2065	68253	1978	Premise Match	73m	North West
	MANCHESTER SPECIALISTS/RETAILERS (M085)	Jaw, P. & Co., 554 Pacific Highway., St. Leonards	324566	1970	Premise Match	73m	North West
	NAPERY SPECIALISTS (N050)	Jaw, P. & Co., 554 Pacific Highway., St. Leonards	343302	1970	Premise Match	73m	North West
	Manchester Specialists/Retailers	Jaw, P. & Co., 554 Pacific Hghwy., St. Leonards	109135	1965	Premise Match	73m	North West
	Napery Specialists	Jaw, P. & Co., 554 Pacific Hghwy., St. Leonards	127946	1965	Premise Match	73m	North West
	Cellulose Bag & Wrapper Mfrs. &/or Suppliers	Maxima Manufacturing Co. Pty. Ltd., Rear 552 Pacific Highway., St. Leonards	63694	1965	Premise Match	73m	North West
	MANCHESTER SPECIALISTS/RETAILERS	Jaw, P., 554 Pacific Highway., St. Leonards	332905	1961	Premise Match	73m	North West
	PAPER BAG SUPPLIERS	Maxima Manufacturing Co. Pty. Ltd., Rear 552 Pacific Highway., St. Leonards	356720	1961	Premise Match	73m	North West
	HARDWARE DEALERS/IRONMONGERS	St. Leonards Hardware, 550 Pacific Highway. ST. LEONARDS	323528	1961	Premise Match	73m	North West
	BUILDERS' SUPPLIERS	Sydney & North Sydney Lime Burners Pty. Ltd., 548 Pacific Highway., St. Leonards	278439	1961	Premise Match	73m	North West
	CAKE SHOPS & PASTRYCOOKS	Boomerang (The), 554 Pacific Highway., St. Leonards	16465	1950	Premise Match	73m	North West
	DRY CLEANERS, PRESSERS & DYERS	Catts and Co. 552 Pacific Highway., St. Leonards	35151	1950	Premise Match	73m	North West
	CARPET CLEANERS & SHAMPOOERS	Catts and Co., 552 Pacific Highway., St. Leonards	18253	1950	Premise Match	73m	North West
	MANCHESTER SPECIALISTS & RETAILERS	Pacific Handcrafts, 554 Pacific Highway., St. Leonards	70340	1950	Premise Match	73m	North West
	ELECTRIC RANGE & STOVE RETAILERS	Sydney and North Sydney Lime Burners Pty. Ltd. (The), 548 Pacific Highway., St. Leonards	37144	1950	Premise Match	73m	North West
	GAS RANGES & STOVES-RETAILERS	Sydney and North Sydney Lime Burners Pty. Ltd. (The), 548 Pacific Hghwy., St. Leonards	54103	1950	Premise Match	73m	North West
	LIME & CEMENT MERCHANTS	Sydney and North Sydney Lime Burners Pty. Ltd. (The), 548 Pacific Highway., St. Leonards	69109	1950	Premise Match	73m	North West
	BUILDERS' SUPPLIERS	Sydney and North Sydney Lime Burners Pty. Ltd., 548-550 Pacific Highway., St. Leonards	11911	1950	Premise Match	73m	North West
	HAMBURGER BARS	Willow, H. T., 562 Pacific Hghwy., St. Leonards	60458	1950	Premise Match	73m	North West
21	DENTISTS.	Wilkinson, R. T., 542A Pacific H'way., St. Leonards. 2065	23537	1986	Premise Match	80m	North
22	TIMBER AGENTS & BROKERS. (T4394)	Duncan's Holding Limited, 3rd Fl. 456 Pacific H'way., St Leonards. 2065.	80205	1982	Premise Match	93m	East
	SAWMILLERS. (S1065)	Duncan's Holding Limited, 3rd Fl., 456 Pacific H'way., St. Leonards. 2065.	73208	1982	Premise Match	93m	East
	ENGINEERS-FILTRATION.	Gatx-Fulier A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	24755	1978	Premise Match	93m	East
	ENGINEERS-HEAVY.	Gatx-Fuller A'asia Pty, Ltd., 454 Pacific H'way, St, Leonards. 2065	25560	1978	Premise Match	93m	East
	AIR COMPRESSOR MFRS.&/OR DIST.	Gatx-Fuller A'asia Pty. Ltd, 454 Pacific Hway, St Leonards. 2065	1804	1978	Premise Match	93m	East
	BALL &/OR PEBBLE MILLS.	Gatx-Fuller A'asia Pty. Ltd, 454 Pacific H'way, St Leonards. 2065	4333	1978	Premise Match	93m	East
	SEWAGE TREATMENT EQUIPMENT MFRS. & OR DIST	Gatx-Fuller A'asia Pty. Ltd, 454 Pacific H'way., St Leonards. 2065	65513	1978	Premise Match	93m	East
	PUMPS MFRS. &/OR DIST	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific Highway, St. Leonards. 2065	60784	1978	Premise Match	93m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
22	CHEMICAL MACHINERY MFRS. &/OR IMPS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	12442	1978	Premise Match	93m	East
	CONVEYORS &/OR CONVEYING EQUIP. MFRS. &/OR IMPS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	16248	1978	Premise Match	93m	East
	DUST COLLECTION &/OR FUME EXTRACTION EQUIP. MFRS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	21142	1978	Premise Match	93m	East
	FILTER MFRS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	27616	1978	Premise Match	93m	East
	MATERIAL HANDLING EQUIPMENT IMPS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	41762	1978	Premise Match	93m	East
	PNEUMATIC CONVEYOR MFRS. &/OR INSTALLERS.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	58471	1978	Premise Match	93m	East
	ENGINEERS-WATER TREATMENT.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St. Leonards., 2065	26660	1978	Premise Match	93m	East
	WATER TREATMENT EQUIPMENT MFRS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St. Leonards.2065	74004	1978	Premise Match	93m	East
	DUST COLLECTION &/OR FUME EXTRACTION EQUIP. MFRS. &/OR DIST.	Gatx-Fuller Australasia Pty. Ltd. 454-456 Pacific Hghwy., St. Leonards, 2065	21132	1978	Premise Match	93m	East
	WATER TREATMENT EQUIPMENT MFRS. &/OR DIST.	Gatx-Fuller Australasia Pty. Ltd., 454-456 Pacific Highway St., Leonards 2065	73988	1978	Premise Match	93m	East
	SEWAGE TREATMENT EQUIPMENT MFRS. & OR DIST	Gatx-Fuller Australia Pty. Ltd. 454-456 Pacific H'way., St Leonards 2065	65507	1978	Premise Match	93m	East
	ENGINEERS-MINING.	Gatx-Fuller A'asia Pty. Ltd, 454 Pacific H'way, St Leonards. 2065	25864	1978	Premise Match	93m	East
	WATER TREATMENT EQUIPMENT , MFRS. &/OR DIST.	Gatx- Fuller A'asia Pty. Ltd., 454 Pacific H'way, St. Leonards. 2065	86646	1975	Premise Match	93m	East
	SEWAGE TREATMENT EQUIPMENT MFRS.	Gatx- Fuller A'asia Pty. Ltd., 454 Pacific H'way., St. Leonards. 2065	76573	1975	Premise Match	93m	East
	CONVEYORS &/OR CONVEYING EQUIP. MFRS. &/OR IMPS. &/OR DIST.	Gatx- Fuller Australasia Ltd., 454-456 Pacific Highway, St. Leonards. 2065	18800	1975	Premise Match	93m	East
	WATER TREATMENT EQUIPMENT , MFRS. &/OR DIST.	Gatx- Fuller Australasia Pty Ltd., 454-456 Pacific Highway St., Leonards. 2065	86628	1975	Premise Match	93m	East
	PUMP MFRS.&/OR DIST.	Gatx., Fuller A'asia Pty. Ltd., 454 Pacific H'way., St Leonards. 2065	71244	1975	Premise Match	93m	East
	SEWAGE TREATMENT EQUIPMENT MFRS.	Gatx., Fuller Australasia Pty. Ltd., 454-456 Pacific Highway., St. Leonards. 2065	76569	1975	Premise Match	93m	East
	ENGINEERS-FILTRATION.	Gatx-Fuller A'asia Pty. Ltd. 454 Pacific H'way St. Leonards. 2065	28629	1975	Premise Match	93m	East
	ENGINEERS-MINING.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards 2065	29863	1975	Premise Match	93m	East
	ENGINEERS-HEAVY.	Gatx-fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	29529	1975	Premise Match	93m	East
	PNEUMATIC CONVEYOR MFRS. &/OR INSTALLERS.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way., St Leonards. 2065	68835	1975	Premise Match	93m	East
	FILTER MFRS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	31820	1975	Premise Match	93m	East
	CHEMICAL MACHINERY MFRS. &/OR IMPS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	14384	1975	Premise Match	93m	East
	AIR COMPRESSOR MFRS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St. Leonards. 2065	1560	1975	Premise Match	93m	East
	BALL &/OR PEBBLE MILLS.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St. Leonards. 2065	4214	1975	Premise Match	93m	East
	DUST COLLECTION &/OR FUME EXTRACTION EQUIP. MFRS. &/OR DIST.	Gatx-Fuller A'asia Pty. Ltd., 454 Pacific H'way, St. Leonards. 2065	24626	1975	Premise Match	93m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
22	MATERIAL HANDLING EQUIPMENT IMPS. &/OR DIST.	Gatx-Fuller A'sia Pty. Ltd., 454 Pacific H'way., St Leonards. 2065.	49328	1975	Premise Match	93m	East
	ENGINEERS-WATER TREATMENT.	Gatx-Fuller A'sia Pty. Ltd., 454 Pacific H'way, St Leonards. 2065	30767	1975	Premise Match	93m	East
	DUST COLLECTION &/OR FUME EXTRACTION EQUIP. MFRS. &/OR DIST.	Gatx-Fuller Australasia Pty. Ltd. 454-456 Pacific Highway., St. Leonards, 2065	24610	1975	Premise Match	93m	East
	CONVEYORS &/OR CONVEYING EQUIP. MFRS. &/OR IMPS. &/OR DIST.	Gatx-Fuller A'sia Pty. Ltd., 454 Pacific H'way., St. Leonards. 2065	18820	1975	Premise Match	93m	East
	Motor Car/Truck Dealers - New/Used	North Shore Motors Pty. Ltd., 456-458 Pacific Highway., Crows Nest	120841	1965	Premise Match	93m	East
	ARMATURE WINDERS	Ace Auto Electrical Service, 454 Pacific Highway., Crows Nest	2559	1950	Premise Match	93m	East
	BATTERY DISTRIBUTORS	Ace Auto Electrical Service, 454 Pacific Highway., Crows Nest	6476	1950	Premise Match	93m	East
	MOTOR ELECTRICIANS	Ace Auto Electrical Service, 454 Pacific Highway., Crows Nest	83060	1950	Premise Match	93m	East
	MOTOR SPARE PARTS DEALERS-RETAIL	Ace Auto Electrical Service, 454 Pacific Highway., Crows Nest	86566	1950	Premise Match	93m	East
	BATTERY DISTRIBUTORS	Atlas Battery Service, 454 Pacific Highway., Crows Nest	6480	1950	Premise Match	93m	East
	BATTERY MANUFACTURERS	Atlas Battery Service, 454 Pacific Highway., Crows Nest	6516	1950	Premise Match	93m	East
	BATTERY SERVICE STATIONS	Atlas Battery Service, 454 Pacific Highway., Crows Nest	6576	1950	Premise Match	93m	East
	DIESEL BATTERY MFRS. &/OR DISTRIBUTORS	Atlas Battery Service, 454 Pacific Highway., Crows Nest	32804	1950	Premise Match	93m	East
	TRACTOR BATTERY MANUFACTURERS	Atlas Battery Service, 454 Pacific Highway., Crows Nest	109920	1950	Premise Match	93m	East
	PAINT, VARNISH & STAIN MANUFACTURERS	Le Guay, L. V., 456 Pacific Highway., Crows Nest	90650	1950	Premise Match	93m	East

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Business Directory Records 1950-1991

Road or Area Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1986, 1982, 1978, 1975, 1970, 1965, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
23	Carpet & Floor Covering Retailers &/Specialists	Bevan, H. W., Christie St, St. Leonards	62447	1965	Road Match	0m
	ELECTRICAL CONTRACTORS &/OR ELECTRICIANS	Pitts, C. W., 71 Christie St., Crows Nest	37809	1950	Road Match	0m
24	Engineers Consulting	Grantham Spencer Associates Pty Ltd, 83 Lithgow St St Leonards 2065	43468	1991	Road Match	84m
	Engineers Consulting	Grantham Spencer Associates Pty. Ltd., 83 Lithgow St. St. Leonards 2065	97634	1991	Road Match	84m
	Engineers Consulting	Lee Engineering Consultants Pty Ltd, 83 Lithgow St., St Leonards 2065	43485	1991	Road Match	84m
	ENGINEERS – CONSULTING.	Spencer Thomas Associates Pty. Ltd., 83 Lithgow St., St. Leonards. 2065	28940	1986	Road Match	84m
	ENGINEERS – CONSULTING.	Spencer Thomas Associates, 83 Lithgow Street, St. Leonards. 2065	28794	1986	Road Match	84m
	ENGINEERS - CONSULTING. (E6600)	Spencer, Thomas Associates Pty, Ltd., 83 Lithgow St., St. Leonards. 2065.	27087	1982	Road Match	84m
	ENGINEERS-CONSULTING.	Spencer, Thomas Associates Pty. Ltd., Lithgow St., St. Leonards. 2065	24155	1978	Road Match	84m
	CLEANERS-GENERAL (C380)	Burton Cleaning Service., 81 Lithgow St., St. Leonards	281821	1970	Road Match	84m
	Nurserymen	St. Leonards Nursery & Florists, Lithgow St., St. Leonards	129187	1965	Road Match	84m
	CEMENT-PORTLAND-MFRS. &/OR DIST.	Commonwealth Portland Cement Company Limited Fyshwick, A.C.T., Lithgow St	286223	1961	Road Match	84m
	NURSERYMEN	St. Leonards Nursery & Florists, Lithgow St., St. Leonards	354214	1961	Road Match	84m
	BUILDERS' PLANT HIRERS	Davis Plant and Tool Hire Pty. Ltd., Lithgow St., St. Leonards	11684	1950	Road Match	84m
	HOISTS-HIRERS	Davis Plant and Tool Hire Pty. Ltd., Lithgow St., St. Leonards	62394	1950	Road Match	84m
	PAVING CONTRACTORS	Davis Plant and Tool Hire Pty. Ltd., Lithgow St., St. Leonards	91336	1950	Road Match	84m
25	Television Stations	A.B.N Channel 2, Pacific H'way Gore Hill 2065	64007	1991	Road Match	90m
	PHOTOGRAPHERS – GENERAL.	Baglin Douglas Pty. Ltd., 246 Pacific Hwy, St. Leonards 2065	72900	1986	Road Match	90m
	TELEVISION STATIONS. (T2275)	A B.N. Channel 2, Pacific H'way., Gore Hill. 2065.	79528	1982	Road Match	90m
	CHEMISTS-PHARMACEUTICAL.	Reids Pharmacy, 1 Pacific Hway., St. Leonards. 2065	13741	1978	Road Match	90m
	AMUSEMENTS.	St. Leonards Olympic Bowling Centre Ltd., Pacific H'way, St. Leonards. 2065	2445	1978	Road Match	90m
	DRY CLEANERS, PRESSERS &/OR DYERS.	Lindfield Laundry & Dry Cleaners, Pacific H'way. St. Leonards. 2065	24178	1975	Road Match	90m
	LAUNDRIES &/OR LAUNDRETTE.	Lindfield Laundry & Dry Cleaners., Pacific H'way., St. Leonards. 2065	46966	1975	Road Match	90m
	DISPOSAL STORES.	R.N.S. Hospital Ladies Committee Opportunity Shoppe, Pacific H'way, St. Leonards. 2065	22177	1975	Road Match	90m
	AMUSEMENTS.	St. Leonards Olympic Bowling Centre Ltd., Pacific H'way, St. Leonards. 2065	2273	1975	Road Match	90m
	IMPORTERS.	Stenco Agencies Export Import Pty. Ltd., 665 Pacific H'way St Leonards. 2065	43948	1975	Road Match	90m
	EXPORTERS.	Stenco Agencies Export Import Pty. Ltd., 665 Pacific H'way, St. Leonards. 2065.	31163	1975	Road Match	90m

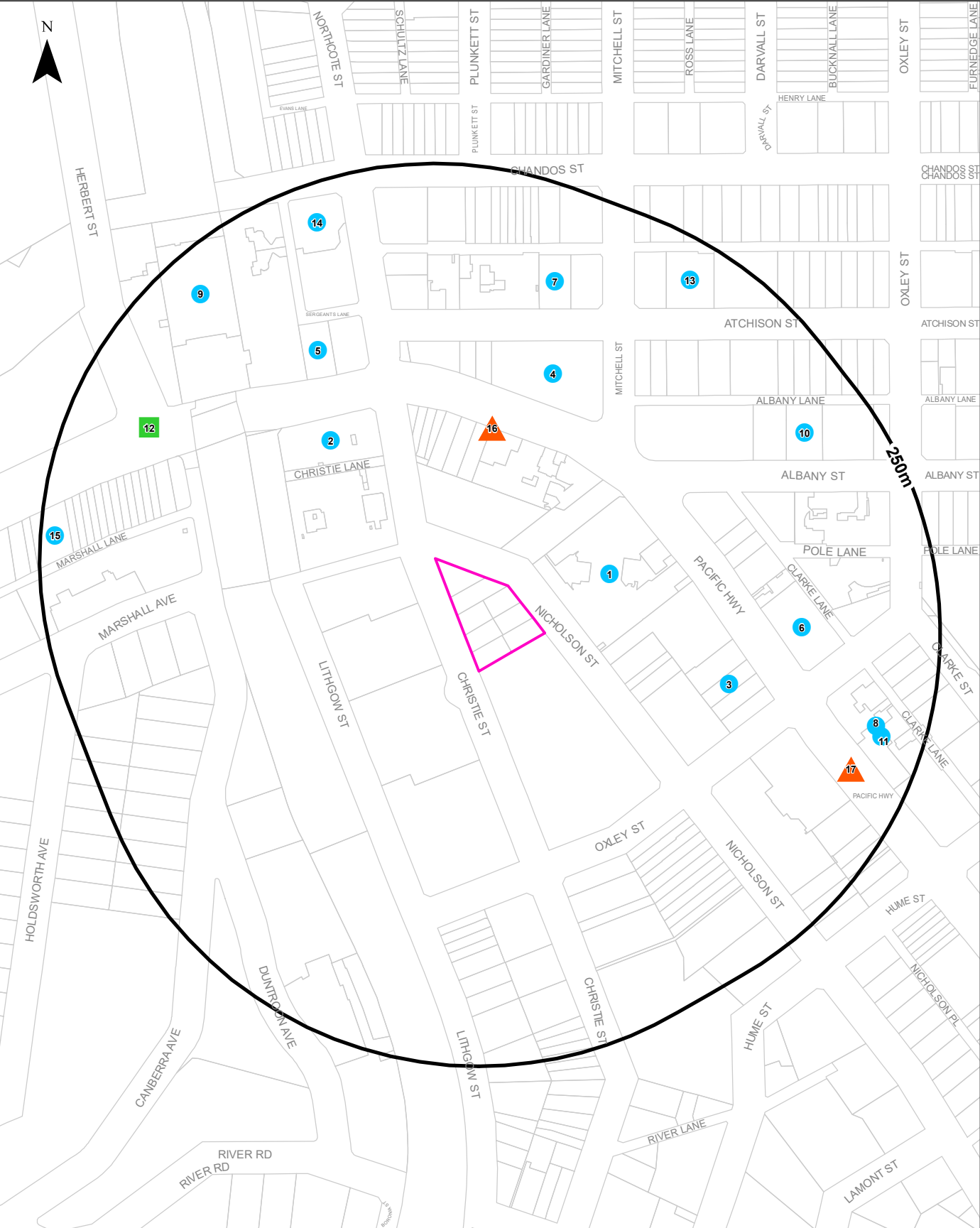
Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
25	ELECTRIC MOTORS-REPAIRERS/HIRERS (E220)	Asea Electric (Aust.) Pty. Ltd., Pacific Hwy., St Leonards	294261	1970	Road Match	90m
	ENGINEERS-ELECTRICAL (E570)	Asea Electric (Aust.) Pty. Ltd., Pacific Highway., St Leonards	298090	1970	Road Match	90m
	MARINE ENGINES - IMPORTERS, DIST. &/OR MFRS.	Lewis Marine., 466 Pacific Highway., St. Leonards	325536	1970	Road Match	90m
	OUTBOARD MOTOR MFRS./DIST. (O 330)	Lewis Marine., 466 Pacific Highway., St. Leonards	345601	1970	Road Match	90m
	DISPOSAL STORES (D380)	Royal North Shore Hospital Ladies' Committee., Pacific Highway., St Leonards	289919	1970	Road Match	90m
	WELDERS-ELECTRIC &/OR OXY	Standard Weighbridges Pty. Ltd., Pacific Highway., St Leonards	373973	1970	Road Match	90m
	PAINT-DRY COLOURS/PIGMENT-MFRS/DISTRIBUTORS (P 020)	Stenco Agencies Export Import Pty. Ltd., 665 Pacific Hwy., St. Leonards	346511	1970	Road Match	90m
	IMPORTERS (I200)	Stenco Agencies Export, Import Pty. Ltd., 665 Pacific Highway., St. Leonards	318768	1970	Road Match	90m
	MINING COMPANIES	Stenco Mining Pty. Ltd., 665 Pacific Highway., St Leonards	331726	1970	Road Match	90m
	Chemical Manufacturers &/or Distributors	British Schering Ltd., Medical Centre, Pacific Highway., St. Leonards	64105	1965	Road Match	90m
	TOILET PREPARATIONS MFRS.	Eastman Pharmacal Co. Pty. Ltd., Pacific Hwy., Greenwich	152302	1965	Road Match	90m
	Motor Car/Truck Dealers - New/Used	Lewis, L. & Son Pty. Ltd., 466 Pacific Highway., St. Leonards	120750	1965	Road Match	90m
	TELEVISION STATIONS	A.B.N. Channel 2, Pacific Highway., Gore Hill	256029	1961	Road Match	90m
	ELECTRIC SWITCH & CONTROL GEAR-FLAMEPROOF-MANUFACTURERS &/OR DISTRIBUTORS	Asea Electric (Aust.) Pty. Ltd., Pacific Highway., St. Leonards	301400	1961	Road Match	90m
	MOTOR CAR/TRUCK DEALERS—NEW/USED	Burnett & Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	344916	1961	Road Match	90m
	TOILET PREPARATIONS MFRS.	Eastman Pharmacal Co. Pty. Ltd., Pacific Highway., Greenwich	257926	1961	Road Match	90m
	MOTOR CAR/TRUCK DEALERS—NEW/USED	Lewis, L. & Son Pty. Ltd., 466 Pacific Highway., Crows Nest	345164	1961	Road Match	90m
	DRIVE-YOURSELF CAR SERVICES	St. Leonards Drive Yourself, Pacific Highway., St. Leonards	298968	1961	Road Match	90m
	TAXIS	St. Leonards Taxi Service, c/o Fruit Stall, St. Leonards Station, , Pacific Highway, St. Leonards	255761	1961	Road Match	90m
	WEIGHBRIDGES	Standard Weighbridges Pty. Ltd., Pacific Highway., St. Leonards	261826	1961	Road Match	90m
	MOTOR ACCESSORIES-DEALER	Burnett and Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	81514	1950	Road Match	90m
	MOTOR CAR & TRUCK DEALERS-USED	Burnett and Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	82309	1950	Road Match	90m
	MOTOR CAR &/OR TRUCK DEALERS	Burnett and Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	82618	1950	Road Match	90m
	MOTOR GARAGES &/OR ENGINEERS	Burnett and Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	83527	1950	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL, Etc.	Burnett and Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	85835	1950	Road Match	90m
	MOTOR SPARE PARTS DEALERS-RETAIL	Burnett and Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	86609	1950	Road Match	90m
	TOILET PREPARATIONS MANUFACTURERS	Eastman Pharmacal Co. Pty. Ltd., Pacific Highway., Greenwich	108928	1950	Road Match	90m
	MOTOR PAINTERS	Gillmore, Leslie, 446 Pacific Highway., Crows Nest	84824	1950	Road Match	90m
	MOTOR PANEL BEATERS	Gillmore, Leslie, 446 Pacific Highway., Crows Nest	85285	1950	Road Match	90m
	TAXIS	Godfrey, K. B., Pacific Highway., St. Leonards	107355	1950	Road Match	90m
	TAXIS	Lane Cove-St. Leonards Private Hire Service, Pacific Highway, St. Leonards	107403	1950	Road Match	90m
	MOTOR PAINTERS	Northern Motor Repairs, 458 Pacific Highway., Crows Nest	84950	1950	Road Match	90m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
25	MOTOR PANEL BEATERS	Northern Motor Repairs, 458 Pacific Highway., Crows Nest	85418	1950	Road Match	90m
	DRIVE YOURSELF CAR SERVICES	St. Leonards Drive Yourself, Pacific Highway., St. Leonards	34988	1950	Road Match	90m
	TAXI TRUCK OPERATORS	St. Leonards Taxi Truck Service, Pacific Highway., St. Leonards	107235	1950	Road Match	90m
	TAXIS	St. Leonards Transport Services, Pacific Highway., St. Leonards	107501	1950	Road Match	90m
	TAXIS	Wollstonecraft Taxi Service, Pacific Highway., St. Leonards	107540	1950	Road Match	90m

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Dry Cleaners, Motor Garages & Service Stations

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Legend		Scale: 0 40 80 120 160 Meters	Coordinate System: GDA 1994 MGA Zone 56
Site Boundary	Business directory records mapped to a specific premise		Date: 19 December 2024
Buffer 250m	Business directory records mapped to a road intersection	Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018 Property Boundaries © NSW Department Finance, Services & Innovation 2024	
Property Boundary	Business directory records mapped to a road corridor		
Business directory records mapped to a general area			

Historical Business Directories

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Dry Cleaners, Motor Garages & Service Stations 1948-1993 Premise or Road Intersection Matches

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

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Orbit Service Station (Ampol), 472 Pacific Hghwy, St.Leonards. 2065	33890	1984	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Orbit Service Station (Ampol)., 472 Pacific H'way St. Leonards. 2065	21339	1983	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Orbit Service Station (Ampol), 472 Pacific H'way., St. Leonards. 2065.	57323	1982	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Ampol St. Leonards Service Station., 472 Pacific H'way., St Leonards. 2065	63701	1981	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Ampol St. Leonards Service Station., 472 Pacific Highway., St Leonards. 2065	50173	1980	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Ampol Service Station, 472 Pacific H'way., St Leonards. 2065.	35698	1979	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Ampol Service Station, 472 Pacific H'way, St. Leonards. 2065	49299	1978	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Yellow Cabs Of Australia Pty. Ltd., 472 Pacific H'way., St. Leonards 2065	35251	1976	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS.	Yellow Cabs of Australia Pty. Ltd., 472 Pacific H'way., St. Leonards. 2065	59809	1975	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS.	Yellow Cabs Of Australia Pty. Ltd., 482 Pacific Hghwy St. Leonards 2065	13036	1972	Premise Match	20m	East
	MOTOR GARAGES &/OR ENGINEERS.	Yellow Cabs Of Australia Pty. Ltd., 482 Pacific Hghwy., St. Leonards 2065	62699	1971	Premise Match	20m	East
	MOTOR GARAGES & ENGINEERS(M6S6)	Yellow Cabs of Aust. Pty. Ltd., 482 Pacific Highway., CROW'S NEST	338924	1970	Premise Match	20m	East
	MOTOR GARAGES & ENGINEERS.	Yellow Cabs Of Aust. Pty. Ltd., 482 Pacific Hghwy, Crows Nest	42005	1969	Premise Match	20m	East
	MOTOR GARAGES & ENGINEERS	Yellow Cabs Of Aust. Pty. Ltd., 482 Pacific Hghwy., Crows Nest	25556	1968	Premise Match	20m	East
	MOTOR GARAGES & ENGINEERS	Orbit Service Station., 482-484 Pacific Highway Crows Nest	43695	1964	Premise Match	20m	East
	MOTOR GARAGES & ENGINEERS.	Orbit Service Station., 482-484 Pacific Hghwy., St. Leonards	33412	1962	Premise Match	20m	East
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Orbit Service Station., 482-484 Pacific Hghwy., St. Leonards	38688	1962	Premise Match	20m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MOTOR GARAGES & ENGINEERS	Orbit Service Station, 482-484 Pacific Hghwy., St Leonards	347828	1961	Premise Match	20m	East
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Orbit Service Station, 482-484 Pacific Hghwy., St Leonards	350926	1961	Premise Match	20m	East
	DRY CLEANERS, PRESSERS & DYERS	Tasman Dry Cleaners. 494 Pacific Highway., St. Leonards	35765	1950	Premise Match	20m	East
	DRY CLEANERS, PRESSERS & DYERS.	Tasman Dry Cleaners., 494 Pacific Hwy, St Leonards	17514	1948-49	Premise Match	20m	East
2	DRY CLEANERS, PRESSERS & DYERS.	Catts & Co., 552 Pacific Hghwy., St. Leonards	54800	1956	Premise Match	73m	North West
	DRY CLEANERS, PRESSERS & DYERS.	Catts & Co., 552 Pacific Hghwy., St. Leonards	44326	1954	Premise Match	73m	North West
	DRY CLEANERS, PRESSERS & DYERS.	Catts & Co., 552 Pacific Hghwy., St. Leonards	36133	1953	Premise Match	73m	North West
	DRY CLEANERS, PRESSERS & DYERS	Catts and Co. 552 Pacific Highway., St. Leonards	35151	1950	Premise Match	73m	North West
	DRY CLEANERS, PRESSERS & DYERS.	Catts And Co., 552 Pacific Hghwy	17099	1948-49	Premise Match	73m	North West
	DRY CLEANERS, PRESSERS & DYERS.	Catts And Co., 552 Pacific Hghwy., St. Leonards	17100	1948-49	Premise Match	73m	North West
3	MOTOR GARAGES & ENGINEERS.	Hook's Motor Units., 452 Pacific Hghwy., Crow's Nest	29231	1962	Premise Match	107m	East
	MOTOR GARAGES & ENGINEERS	Hook's Motor Units, 452 Pacific Highway. CROW'S NEST	347391	1961	Premise Match	107m	East
	MOTOR GARAGES & ENGINEERS	Hook's Motor Units., 452 Pacific Hghwy., Crows Nest	13909	1959	Premise Match	107m	East
	MOTOR GARAGE/ENGINEERS.	Hooks Motor Units., 452 Pacific Hghwy., Crows Nest	4298	1958	Premise Match	107m	East
	MOTOR GARAGES & OR ENGINEERS.	Hooks Motor Units., 452 Pacific Hghwy., Crows Nest	57823	1956	Premise Match	107m	East
	MOTOR GARAGES & OR ENGINEERS.	Hooks Motor Units., 452 Pacific Hghwy., Crows Nest	49425	1954	Premise Match	107m	East
	MOTOR GARAGES & OR ENGINEERS.	Hornsby Hooks Motor Units., 452 Pacific Hghwy., Crows Nest	40142	1953	Premise Match	107m	East
4	MOTOR GARAGES & SERVICE STATIONS.	Shell St. Leonards Service Station, 611 Pacific Hwy., St. Leonards. 2065	25432	1993	Premise Match	116m	North
	Motor Garages & Service Stations	Shell St. Leonards Service Station, 611 Pacific H'way., St. Leonards 2065	53875	1991	Premise Match	116m	North
	MOTOR GARAGES & SERVICE STATIONS.	Shell St. Leonards Service Station, 611 Pacific Hghwy, St. Leonards. 2065	12129	1990	Premise Match	116m	North
	MOTOR GARAGE & SERVICE STATIONS.	Shell St. Leonards Service Station, 611 Pacific Hghwy., St. Leonards. 2065	5551	1989	Premise Match	116m	North
	MOTOR GARAGES & SERVICE STATIONS.	Shell St. Leonards Service Station, 611 Pacific Hghwy., St. Leonards. 2065	59940	1988	Premise Match	116m	North
	MOTOR GARAGES & SERVICE STATIONS.	Shell St. Leonards Service Station, 611 Pacific H'way., St Leonards. 2065	65442	1986	Premise Match	116m	North
	MOTOR GARAGES & SERVICE STATIONS.	Shell St. Leonards Service Station, 611 Pacific Hghwy, St. Leonards. 2065	45554	1985	Premise Match	116m	North
	MOTOR GARAGES & OR ENGINEERS & OR SERVICE STATIONS.	Shell St. Leonards Service Station, 611 Pacific Hghwy, St. Leonards. 2065	34118	1984	Premise Match	116m	North
	MOTOR GARAGES & OR ENGINEERS & OR SERVICE STATIONS.	Shell St. Leonards Service Station., 611 Pacific H'way., St. Leonards 2065	21572	1983	Premise Match	116m	North
	MOTOR GARAGES & OR ENGINEERS & OR SERVICE STATIONS.	St. Leonards Auto Port. (Shell)., 609 Pacific H'way., St. Leonards 2065	21622	1983	Premise Match	116m	North
	MOTOR GARAGES & OR ENGINEERS & OR SERVICE STATIONS. (M6860)	Shell St. Leonards Service Station, 611 Pacific H'way., St. Leonards. 2065.	57563	1982	Premise Match	116m	North

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
4	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	St. Leonards Auto Port, (Shell), 609 Pacific H'way., St Leonards. 2065.	57612	1982	Premise Match	116m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Shell St. Leonards Service Station., 611 Pacific H'way., St Leonards 2065	65728	1981	Premise Match	116m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	St. Leonards Auto Port (Shell)., 609 Pacific H'way., St Leonards 2065	8203	1981	Premise Match	116m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Shell St. Leonards Service Station., 611 Pacific H'way., St. Leonards. 2065	58834	1980	Premise Match	116m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	St. Leonards Auto Port (Shell)., 609 Pacific Highway., St. Leonards. 2065	58884	1980	Premise Match	116m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	St. Leonards Auto Port (Shell)., 609 Pacific Highway., St Leonards. 2065.	46383	1979	Premise Match	116m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	St. Leonards Auto Port, (Shell), 609 Pacific H'way, St. Leonards. 2065	50872	1978	Premise Match	116m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	St. Leonards Auto Port (Shell)., 609 Pacific H'way., St. Leonards 2065	34950	1976	Premise Match	116m	North
	MOTOR SERVICE STATIONS - PETROL, OIL	St. Leonards Auto Port, (Shell)., 609 Pacific H'way, St. Leonards 2065	61959	1975	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	St. Leonards Auto Port., 609 Pacific Hghwy., St. Leonards	18164	1972	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	St. Leonards Auto Port., 609 Pacific Hghwy., St. Leonards	2586	1971	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL,OIL,Etc.	St. Leonards Auto Port., 609 Pacific Hghwy., ST. LEONARDS	341492	1970	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	St. Leonards Auto Port., 609 Pacific Hghwy St. Leonards	50745	1969	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	St. Leonards Auto Port., 609 Pacific Hghwy., St Leonards	36828	1968	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	St. Leonards Auto Port., 609 Pacific Hghwy., St. Leonards	16230	1967	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	St. Leonards Auto Port., 609 Pacific Hghwy., St Leonards	1797	1966	Premise Match	116m	North
	Motor Service Stations - Petrol, Oil, Etc. - St. Leonards	St. Leonards Auto Port., 609 Pacific Hghwy., St. Leonards	126145	1965	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	St. Leonards Auto Port., 609 Pacific Hghwy., St. Leonards	52395	1964	Premise Match	116m	North
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	St. Leonards Auto Port., 609 Pacific Hghwy., St. Leonards	38689	1962	Premise Match	116m	North
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	St. Leonards Auto Port, 609 Pacific Hghwy., St. Leonards	351113	1961	Premise Match	116m	North
5	DRY CLEANERS, PRESSERS & DYERS	Marcel Poincare, 661 Pacific Highway., St. Leonards	35489	1950	Premise Match	132m	North West
	DRY CLEANERS, PRESSERS & DYERS.	Marcel Poincare., 661 Pacific Hghwy., St. Leonards	17346	1948-49	Premise Match	132m	North West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
6	Motor Garages & Service Stations	Eurocars (Northside) Pty. Ltd., 545 Pacific H'way., Crows Nest 2065	97305	1991	Premise Match	137m	East
	MOTOR GARAGES & SERVICE STATIONS.	Eurocars (Northside) Pty. Ltd., 545 Pacific Hghwy, Crows Nest. 2065	11598	1990	Premise Match	137m	East
	MOTOR GARAGE & SERVICE STATIONS.	Eurocars (Northside) Pty. Ltd., 545 Pacific Hghwy, Crows Nest. 2065	65060	1989	Premise Match	137m	East
	MOTOR GARAGES & SERVICE STATIONS.	Eurocars (Northside) Pty. Ltd., 545 Pacific Hghwy, Crows Nest. 2065	59278	1988	Premise Match	137m	East
7	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Phelan & Johnston Pty. Ltd., 18 Atchison St., St. Leonards 2065	21394	1983	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Phelan & Johnston Pty. Ltd., 18 Atchison St., St. Leonards. 2065.	57381	1982	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Phelan & Johnston Pty Ltd., 18 Atchison St., St Leonards 2065	3927	1981	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Phelan & Johnston Pty. Ltd., 18 Atchison St., St. Leonards. 2065	58669	1980	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Phelan & Johnston Pty. Ltd., 18 Atchison St., St Leonards. 2065.	46165	1979	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Phelan & Johnston Pty. Ltd., 18 Atchison St., St. Leonards. 2065	50668	1978	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Phelan & Johnston Pty. Ltd., 18 Atchison St., St. Leonards 2065	34729	1976	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St., St. Leonards. 2065	59391	1975	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St Crows Nest	7905	1972	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St St Leonards	13035	1972	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St Crows Nest	56591	1971	Premise Match	171m	North
	MOTOR GARAGES &/OR ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St St Leonards	62698	1971	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS(M6S6)	Phelan & Johnston Pty. Ltd., 18 Atchison St., CROW'S NEST	338420	1970	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS(M6S6)	Phelan & Johnston Pty. Ltd., 18 Atchison St., St. LEONARDS	338419	1970	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St Crows Nest	42000	1969	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St St Leonards	47138	1969	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS	Phelan & Johnston Pty. Ltd., 18 Atchison St Crows Nest	25552	1968	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS	Phelan & Johnston Pty. Ltd., 18 Atchison St St Leonards	26514	1968	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St CrowS Nest	6989	1967	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St St Leonards	11003	1967	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St Crows Nest	55943	1966	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS.	Phelan & Johnston Pty. Ltd.18 Atchison St., St.Leonards	65471	1966	Premise Match	171m	North
	Motor Garages & Engineers	Phelan & Johnston Pty. Ltd., 18 Atchison St. Crow's Nest	122493	1965	Premise Match	171m	North

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7	Motor Garages & Engineers	Phelan & Johnston Pty. Ltd., 18 Atchison St. St. Leonards	123374	1965	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS	Phelan & Johnston Pty. Ltd., 18 Atchison St St Leonards	48651	1964	Premise Match	171m	North
	MOTOR GARAGES & ENGINEERS.	Phelan & Johnston Pty. Ltd., 18 Atchison St St Leonards	33413	1962	Premise Match	171m	North
8	MOTOR GARAGES & SERVICE STATIONS.	Northshore Mitsubishi, 521 Pacific Hwy., Crows Nest. 2065	19197	1993	Premise Match	183m	East
	Motor Garages & Service Stations	Northshore Mitsubishi, 521 Pacific H'way., Crows Nest 2065	97816	1991	Premise Match	183m	East
	MOTOR GARAGES & SERVICE STATIONS.	Northshore Mitsubishi, 521 Pacific Hghwy, Crows Nest. 2065	11938	1990	Premise Match	183m	East
	MOTOR GARAGE & SERVICE STATIONS.	Northshore Mitsubishi, 521 Pacific Hghwy, Crows Nest. 2065	5347	1989	Premise Match	183m	East
	MOTOR GARAGES & SERVICE STATIONS.	Northshore Mitsubishi, 521 Pacific Hghwy, Crows Nest. 2065	59719	1988	Premise Match	183m	East
	MOTOR GARAGES & SERVICE STATIONS.	Northshore Mitsubishi, 521 Pacific H'way., Crows Nest. 2065	65197	1986	Premise Match	183m	East
	MOTOR GARAGES & SERVICE STATIONS.	Northshore Mitsubishi, 521 Pacific Hghwy, Crows Nest. 2065	45300	1985	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northshore Mitsubishi, 521 Pacific Hghwy, Crows Nest. 2065	33877	1984	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northshore Mitsubishi., 521 Pacific H'way., Crows Nest 2065	15229	1983	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Northshore Mitsubishi, 521 Pacific H'way., Crows Nest. 2065.	57309	1982	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northshore Chrysler., 521 Pacific H'way., Crows Nest 2065	3862	1981	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northshore Chrysler., 521 Pacific H'way., Crows Nest. 2065	65683	1980	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northshore Chrysler., 521 Pacific Highway., Crows Nest. 2065.	46098	1979	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northshore Chrysler, 521 Pacific H'way, Crows Nest. 2065	50606	1978	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Northshore Chrysler., 521 Pacific H'way., Crows Nest 2065	30602	1976	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS.	Northshore Chrysler., 521 Pacific H'way., Crows Nest. 2065	59339	1975	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS.	Northside Chrysler., 521 Pacific Hghwy., Crow's Nest	7903	1972	Premise Match	183m	East
	MOTOR GARAGES & ENGINEERS.	Sevenoaks, G., 501 Pacific Hghwy., Crow's Nest	65183	1962	Premise Match	183m	East
	MOTOR GARAGES & ENGINEERS	Sevenoaks, G., 501 Pacific Highway. Crow's Nest	348118	1961	Premise Match	183m	East
	MOTOR GARAGES & ENGINEERS	Sevenoaks G., 501 Pacific Hghwy., Crow's Nest	13917	1959	Premise Match	183m	East
	MOTOR GARAGE/ENGINEERS.	Sevenoaks G., 501 Pacific Hghwy., Crows Nest	4946	1958	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS.	Sevenoaks, G., 501 Pacific Hghwy., Crows Nest	61471	1956	Premise Match	183m	East
	MOTOR GARAGES &/OR ENGINEERS.	Sevenoaks G., 501 Pacific Hghwy., Crows Nest	54088	1954	Premise Match	183m	East

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8	MOTOR GARAGES &/OR ENGINEERS.	Sevenoaks G., 501 Pacific Hghwy., Crows Nest	40671	1953	Premise Match	183m	East
9	DRY CLEANERS & PRESSERS.	Rosemont Dry Cleaning., St. Leonards Railway Station., St. Leonards. 2065	53269	1988	Premise Match	187m	North West
	DRY CLEANERS & PRESSERS.	Rosemont Dry Cleaning, St. Leonards Railway Station, St. Leonards. 2065	25497	1986	Premise Match	187m	North West
	DRY CLEANERS & PRESSERS.	David Jones Dry Cleaning St. Leonards Railway Station, St. Leonards. 2065	34490	1985	Premise Match	187m	North West
	DRY CLEANERS & PRESSERS.	David Jones Dry Cleaning St. Leonards, Railway Station, St. Leonards. 2065	21934	1984	Premise Match	187m	North West
	DRY CLEANERS & PRESSERS.	David Jones Dry Cleaning St. Leonards Railway Station., St. Leonards 2065	8525	1983	Premise Match	187m	North West
	DRY CLEANERS, PRESSERS &/OR DYERS.	Lawrence Dry Cleaners., Station Entrance, Pacific H'way., St. Leonards 2065	23606	1976	Premise Match	187m	North West
	DRY CLEANERS, PRESSERS &/OR DYERS.	Lawrence Dry Cleaners, Station Entrance, Pacific H'way, St. Leonards	24128	1975	Premise Match	187m	North West
10	MOTOR GARAGE & SERVICE STATIONS.	St. Leonards Auto Spares & Repairs, 34 Albany St., Crows Nest. 2065	5602	1989	Premise Match	188m	North East
	MOTOR GARAGES & SERVICE STATIONS.	St. Leonards Auto Spares & Repairs, 34 Albany St., Crows Nest. 2065	59997	1988	Premise Match	188m	North East
	MOTOR GARAGES & SERVICE STATIONS.	St. Leonards Auto Spares & Repairs, 34 Albany St., Crows Nest. 2065	65501	1986	Premise Match	188m	North East
	MOTOR GARAGES & SERVICE STATIONS.	St. Leonards Auto Spares & Repairs, 34 Albany St., Crows Nest. 2065	45614	1985	Premise Match	188m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Geoffrey T. Motors, 34 Albany St., Crows Nest. 2065	28315	1984	Premise Match	188m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Geoffrey. T. Motors., 34 Albany St., Crows Nest 2065	14739	1983	Premise Match	188m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Geoffrey, T. Motors, 34 Albany St., Crows Nest. 2065.	56799	1982	Premise Match	188m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Geoffrey, T. Motors., 34 Albany St., Crows Nest. 2065	3355	1981	Premise Match	188m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Geoffrey T. Motors., 34 Albany St., Crows Nest. 2065	58089	1980	Premise Match	188m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Geoffrey T. Motors., 34 Albany St., Crows Nest. 2065.	41554	1979	Premise Match	188m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Geoffrey. T. Motors, 34 Albany St., Crows Nest. 2065	50092	1978	Premise Match	188m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Geoffrey T. Motors., 34 Albany St., Crows Nest 2065	30076	1976	Premise Match	188m	North East
11	MOTOR GARAGES & SERVICE STATIONS.	Beaurepaires For Tyres, 14 Clarke St., Crows Nest. 2065	64024	1986	Premise Match	198m	East
	MOTOR GARAGES & SERVICE STATIONS.	Beaurepaires For Tyres., 14 Clarke St., Crows Nest. 2065	39043	1985	Premise Match	198m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Straight Talk Tyre People., 14 Clarke St., Crows Nest. 2065	34193	1984	Premise Match	198m	East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Straight Talk Tyre People., 14 Clarke St., Crows Nest 2065	21643	1983	Premise Match	198m	East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
11	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Straight Talk Tyre People, 14 Clarke St., Crows Nest. 2065	57633	1982	Premise Match	198m	East
12	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	K.G.A. Service Station Pty. Ltd., Cnr Herbert St & Pacific Highway., St. Leonards	38685	1962	Road Intersection	200m	North West
	MOTOR GARAGES & ENGINEERS.	K.G.A. Service Station Pty. Ltd., Cnr Herbert St. & Pacific Hghwy., St. Leonards	33411	1962	Road Intersection	200m	North West
	MOTOR GARAGES & ENGINEERS	K.G.A. Service Station Pty. Ltd., Cnr. Herbert St. & Pacific Hghwy., St Leonards	347475	1961	Road Intersection	200m	North West
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	K.G.A. Service Station Pty. Ltd., Cnr. Herbert St. & Pacific Hghwy., St. Leonards	350739	1961	Road Intersection	200m	North West
	MOTOR GARAGES & ENGINEERS.	K.G.A. Service Station Pty. Ltd., Herbert St St Leonards	19962	1959	Road Intersection	200m	North West
	MOTOR SERVICE STATIONS-PETROL., OIL, ETC.	K.G.A. Service Station Pty. Ltd., Herbert St St Leonards	24557	1959	Road Intersection	200m	North West
	MOTOR SERVICE STATIONS-PETROL, ETC.	K.G.A. Service Station Pty. Ltd., Pacific Hghwy., St. Leonards	9619	1958	Road Intersection	200m	North West
	MOTOR SERVICE STATIONS-PETROL, ETC.	K.G.A. Service Station Pty. Ltd., Pacific Hghwy., St. Leonards	61976	1956	Road Intersection	200m	North West
13	MOTOR GARAGES & SERVICE STATIONS.	Albary Automotive, 38 Atchison St., St. Leonards. 2065	5778	1990	Premise Match	202m	North East
	MOTOR GARAGE & SERVICE STATIONS.	Albary Automotive, 38 Atchison St., St. Leonards. 2065	64262	1989	Premise Match	202m	North East
	MOTOR GARAGES & SERVICE STATIONS.	Albary Automotive, 38 Atchison St., St. Leonards. 2065	53363	1988	Premise Match	202m	North East
	MOTOR GARAGES & SERVICE STATIONS.	Albary Automotive, 38 Atchison St., St Leonards. 2065	63870	1986	Premise Match	202m	North East
	MOTOR GARAGES & SERVICE STATIONS.	Albary Automotive Engineers, 38 Atchison Street, St.Leonards. 2065	38849	1985	Premise Match	202m	North East
	MOTOR GARAGES & SERVICE STATIONS.	Albary Automotive, 38 Atchison St., St. Leonards. 2065	38881	1985	Premise Match	202m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Albary Automotive, 38 Atchison St., St.Leonards. 2065	22261	1984	Premise Match	202m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Albary Automotive., 38 Atchison St., St. Leonards. 2065	8854	1983	Premise Match	202m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Albary Automotive, 38 Atchison St., St. Leonards. 2065.	55939	1982	Premise Match	202m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Albary Automotive., 38 Atchison St., St Leonards. 2065	63611	1981	Premise Match	202m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Albary Automotive., 38 Atchison St., St. Leonards. 2065	50085	1980	Premise Match	202m	North East
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Albary Automotive., 38 Atchison St., St Leonards. 2065.	35617	1979	Premise Match	202m	North East
14	Motor Garages & Service Stations	Cottam, P & L Auto Repairs, 104 Christie St, St. Leonards 2065	53666	1991	Premise Match	206m	North West
	MOTOR GARAGES & SERVICE STATIONS.	Cottam P. & L. Auto Repairs, 104 Christie St., St. Leonards. 2065	11465	1990	Premise Match	206m	North West
	MOTOR GARAGE & SERVICE STATIONS.	Cottam P. & L. Auto Repairs, 104 Christie St., St. Leonards. 2065	64910	1989	Premise Match	206m	North West
	MOTOR GARAGES & SERVICE STATIONS.	Cottam P. & L. Auto Repairs, 104 Christie St., St. Leonards. 2065	59115	1988	Premise Match	206m	North West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
14	MOTOR GARAGES & SERVICE STATIONS.	Cottam, P. & L. Auto Repairs, 104 Christie St., St. Leonards. 2065	64510	1986	Premise Match	206m	North West
	MOTOR GARAGES & SERVICE STATIONS.	Cottam P. & L. Auto Repairs, 104 Christie St., St. Leonards. 2065	39510	1985	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Cottam P. & L. Auto Repairs, 104 Christie St., St. Leonards. 2065	28093	1984	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Cottam P & L Auto Repairs., 104 Christie St., St. Leonards 2065	14515	1983	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Mabey, Peter, Car Care., 106 Christie St., St. Leonards 2065	15040	1983	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Cottam, P. & L. Auto Repairs, 104 Christie St., St. Leonards. 2065.	56575	1982	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS. (M6860)	Mabey, Peter Car Care, 106 Christie St., St. Leonards. 2065.	57111	1982	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Powertune Engineering., 104 Christie St., St Leonards. 2065	58680	1980	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Powertune Engineering., 104 Christie St., St Leonards. 2065.	46176	1979	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Mulholland Automotives, 106 Christie St., St. Leonards. 2065	50560	1978	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Powertune Engineering, 104 Christie St, St Leonards. 2065	50680	1978	Premise Match	206m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Powertune Engineering., 104 Christie St., St. Leonards 2065	34748	1976	Premise Match	206m	North West
15	DRY CLEANERS, PRESSERS &/OR DYERS.	Same Day Dry Cleaning., 36 Pacific Hwy., St. Leonards 2065	7230	1972	Premise Match	229m	West

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Dry Cleaners, Motor Garages & Service Stations 1948-1993

Road or Area Matches

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

Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
16	DRY CLEANERS, PRESSERS &/OR DYERS.	Lindfield Laundry & Dry Cleaners., Pacific H'way., St. Leonards 2065	23654	1976	Road Match	90m
	DRY CLEANERS, PRESSERS &/OR DYERS.	Lindfield Laundry & Dry Cleaners, Pacific H'way. St. Leonards. 2065	24178	1975	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Koala Service Station., Cnr Pacific Hghwy & Jersey St., St. Leonards	38686	1962	Road Match	90m
	MOTOR GARAGES & ENGINEERS	Burnett & Gallen Pty Ltd., 446 Pacific Hghwy., Crows Nest	13905	1959	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL., OIL, ETC.	Burnett & Gallen Pty. Ltd., 446 Pacific Hghwy., Crow's Nest	24121	1959	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL., OIL, ETC.	Koala Service Station., Cnr Pacific Hghwy. & Jersey St., St. Leonards	24558	1959	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Burnett & Gallen Pty. Ltd., 446 Pacific Hghwy., Crow's Nest	9425	1958	Road Match	90m
	MOTOR GARAGE/ENGINEERS.	Burnett & Gallen Pty. Ltd., 446 Pacific Hghwy., Crws Nst	749	1958	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Horsburghs Auto Service., Pacific Hghwy., Greenwich	9594	1958	Road Match	90m
	MOTOR GARAGES &/OR ENGINEERS.	Burnett & Gallen Pty. Ltd., 446 Pacific Hghwy., Crws Nst	57355	1956	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Horsburghs Auto Service., Pacific Hghwy., Greenwich	61952	1956	Road Match	90m
	MOTOR GARAGES &/OR ENGINEERS.	Burnett & Gallen Pty. Ltd., 446 Pacific Hghwy., Crws Nst	48984	1954	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Horsburghs Auto Service., Pacific Hghwy., Greenwich	54509	1954	Road Match	90m
	MOTOR GARAGES &/OR ENGINEERS.	Burnett & Gallen Pty. Ltd., 446 Pacific Hghwy., Crws Nst	36695	1953	Road Match	90m
	MOTOR GARAGES &/OR ENGINEERS.	Burnett & Gallen Pty. Ltd., 446 Pacific Hghwy., Crws Nst	31417	1952	Road Match	90m
	MOTOR GARAGES &/OR ENGINEERS	Burnett and Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	83527	1950	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL, Etc.	Burnett and Gallen Pty. Ltd., 446 Pacific Highway., Crows Nest	85835	1950	Road Match	90m
	MOTOR GARAGES &/OR ENGINEERS.	Burnett And Gallen Pty. Ltd., 446 Pacific Hghwy., Crows Nest	17843	1948-49	Road Match	90m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Burnett and Gallen Pty. Ltd., 446 Pacific Hghwy., Crows Nest	23159	1948-49	Road Match	90m
	MOTOR GARAGES &/OR ENGINEERS.	Northern Motor Repairs., 458 Pacific Hghwy., Crows Nest	22682	1948-49	Road Match	90m
17	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Whale Car Wash., Pacific Hghwy., Crows Nest	2067	1971	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Whale Car Wash., Pacific Hghwy Crows Nest	47691	1969	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Whale Car Wash., Pacific Hghwy., Crows Nest	31131	1968	Road Match	169m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
17	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Whale Car Wash., Pacific Hghwy., Crows Nest	15610	1967	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Whale Car Wash., Pacific Hghwy., Crows Nest	1182	1966	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Sevenoaks George., 780 Pacific Hghwy., Crows Nest	38090	1962	Road Match	169m
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Sevenoaks, George, 780 Pacific Hghwy., CROW'S NEST	351074	1961	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL., OIL, ETC.	Sevenoaks George., 780 Pacific Hghwy., Crow's Nest	24124	1959	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Sevenoaks George., 780 Pacific Hghwy., Crows Nest	9815	1958	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Stevenoaks George., 780 Pacific Hghwy., Crows Nest	57	1956	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Stevenoaks George., 780 Pacific Hghwy., Crows Nest	54691	1954	Road Match	169m
	MOTOR SERVICE STATIONS—PETROL, ETC.	Stevenoaks George., 780 Pacific Hghwy., Crows Nest	44222	1953	Road Match	169m
	MOTOR SERVICE STATIONS—PETROL, ETC.	Stevenoaks George., 780 Pacific Hghwy., Crows Nest	36002	1952	Road Match	169m
	MOTOR SERVICE STATIONS-PETROL, Etc.	Sevenoaks, George., 780 Pacific Hghwy., Crows Nest	86431	1950	Road Match	169m

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Aerial Imagery 2024

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



- Legend**
- Site Boundary
 - Buffer 150m

Scale: 0 25 50 75 100 Meters	Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 December 2024
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Aerial Imagery 2014

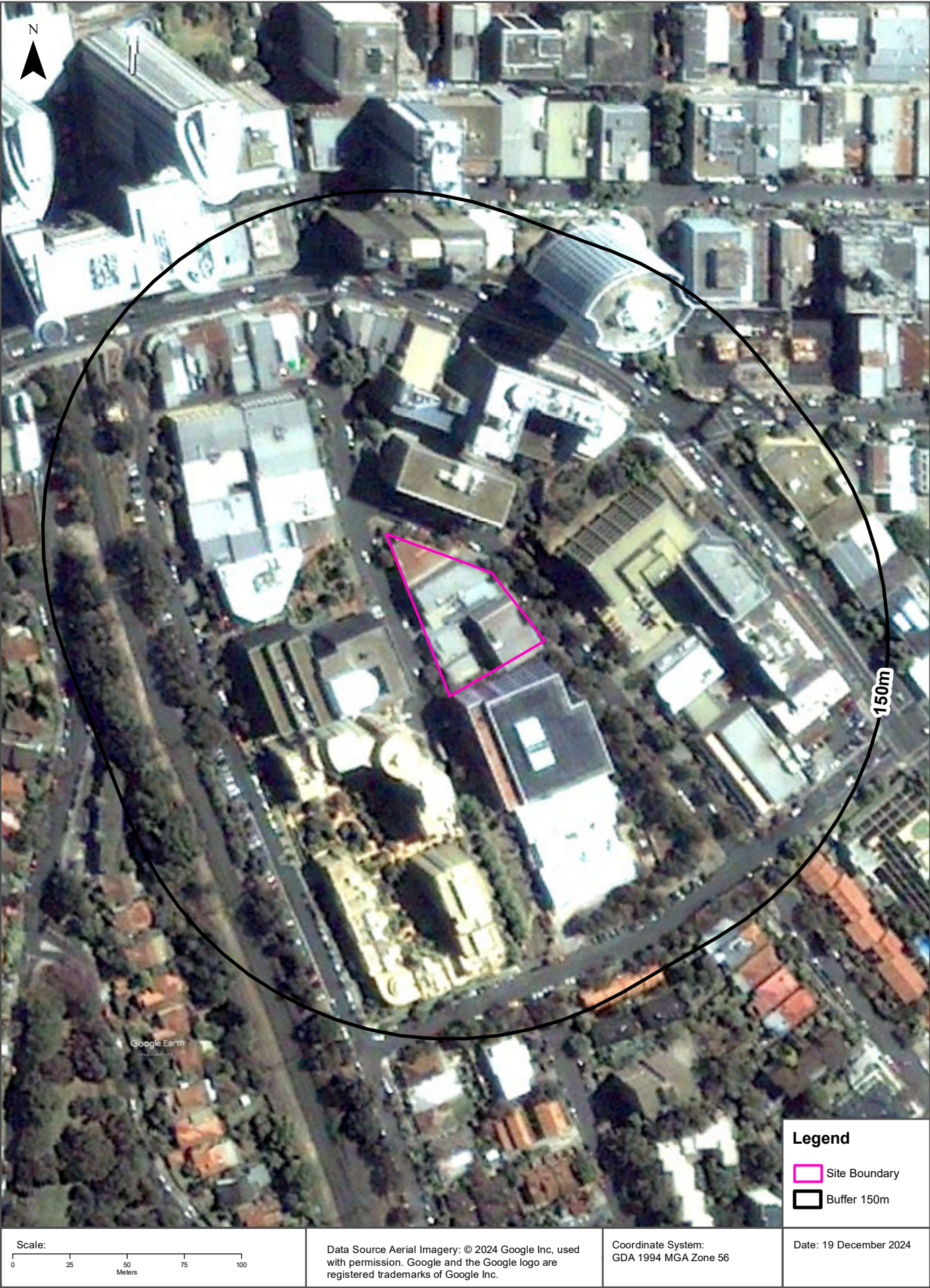
46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Scale: 0 25 50 75 100 Meters	Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 December 2024
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Aerial Imagery 2002

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Aerial Imagery 1994

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Aerial Imagery 1991

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Scale: 0 25 50 75 100 Meters	Data Sources: Aerial Imagery: © NSW Department of Customer Service	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 December 2024
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Aerial Imagery 1986

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



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Coordinate System:
GDA 1994 MGA Zone 56

Date: 18 December 2024

Aerial Imagery 1982

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Aerial Imagery 1978

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Scale: 0 25 50 75 100 Meters	Data Sources: Aerial Imagery: © NSW Department of Customer Service	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 December 2024
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Aerial Imagery 1970

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Data Sources: Aerial Imagery: © NSW Department of Customer Service	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 December 2024
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Aerial Imagery 1965

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Scale: 0 25 50 75 100 Meters	Data Sources: Aerial Imagery: © NSW Department of Customer Service	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 December 2024
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Aerial Imagery 1961

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Aerial Imagery 1955, 1956

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Aerial Imagery 1951

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Data Sources: Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 56

Date: 18 December 2024

Aerial Imagery 1943

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Aerial Imagery 1930

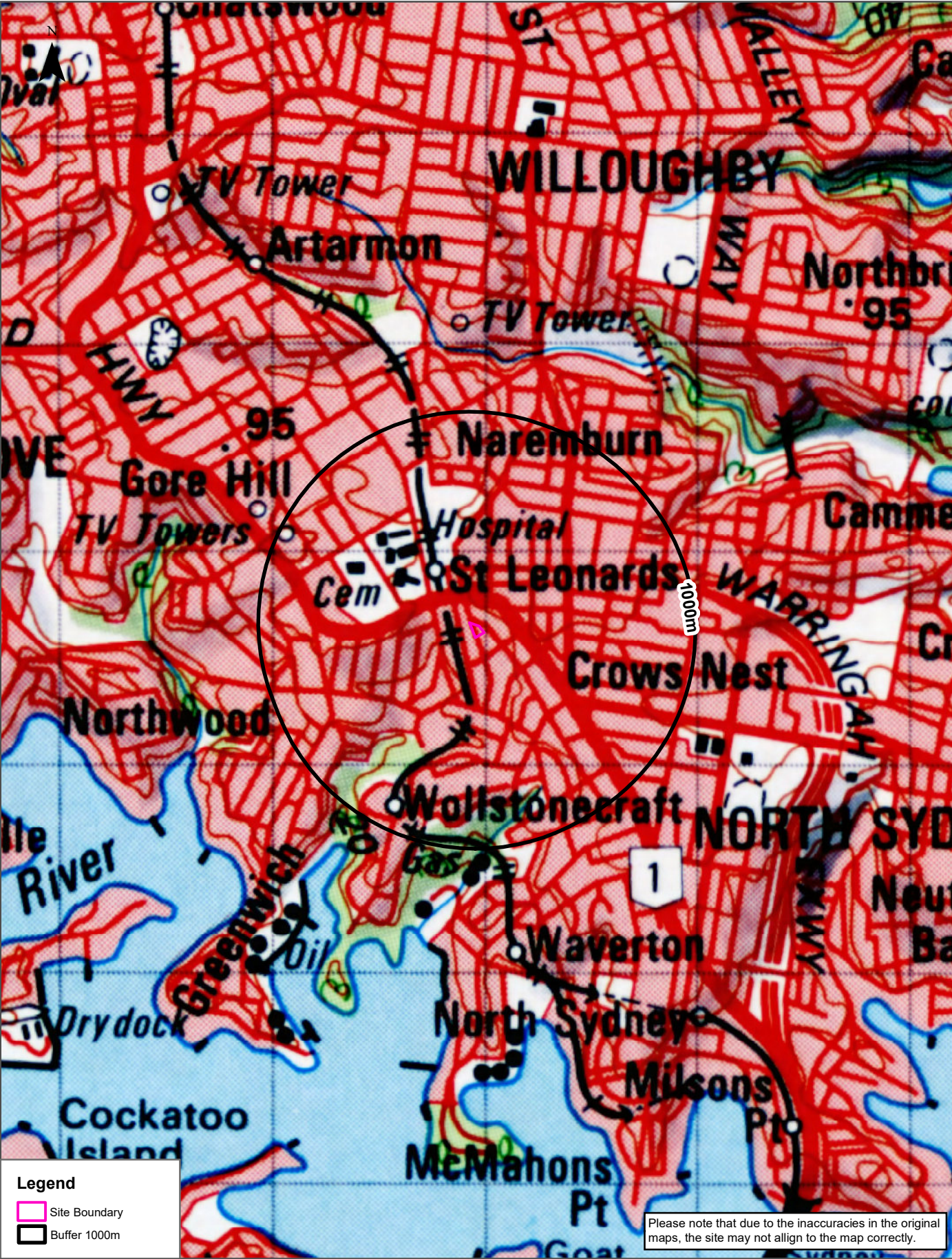
46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Scale: 0 25 50 75 100 Meters	Data Sources: Aerial Imagery: © Geoscience Australia	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 December 2024
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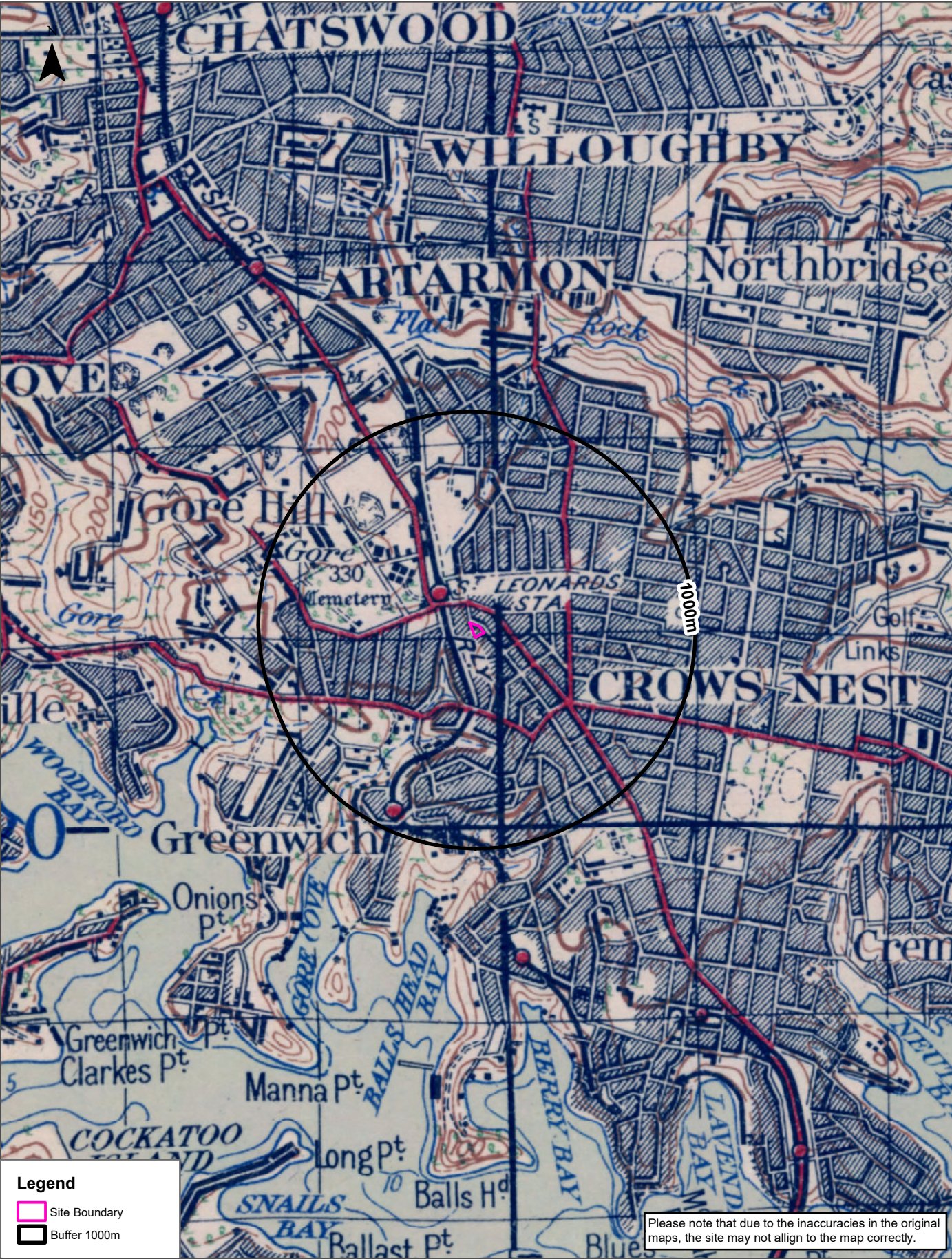
Historical Map 1975

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Historical Map c.1936

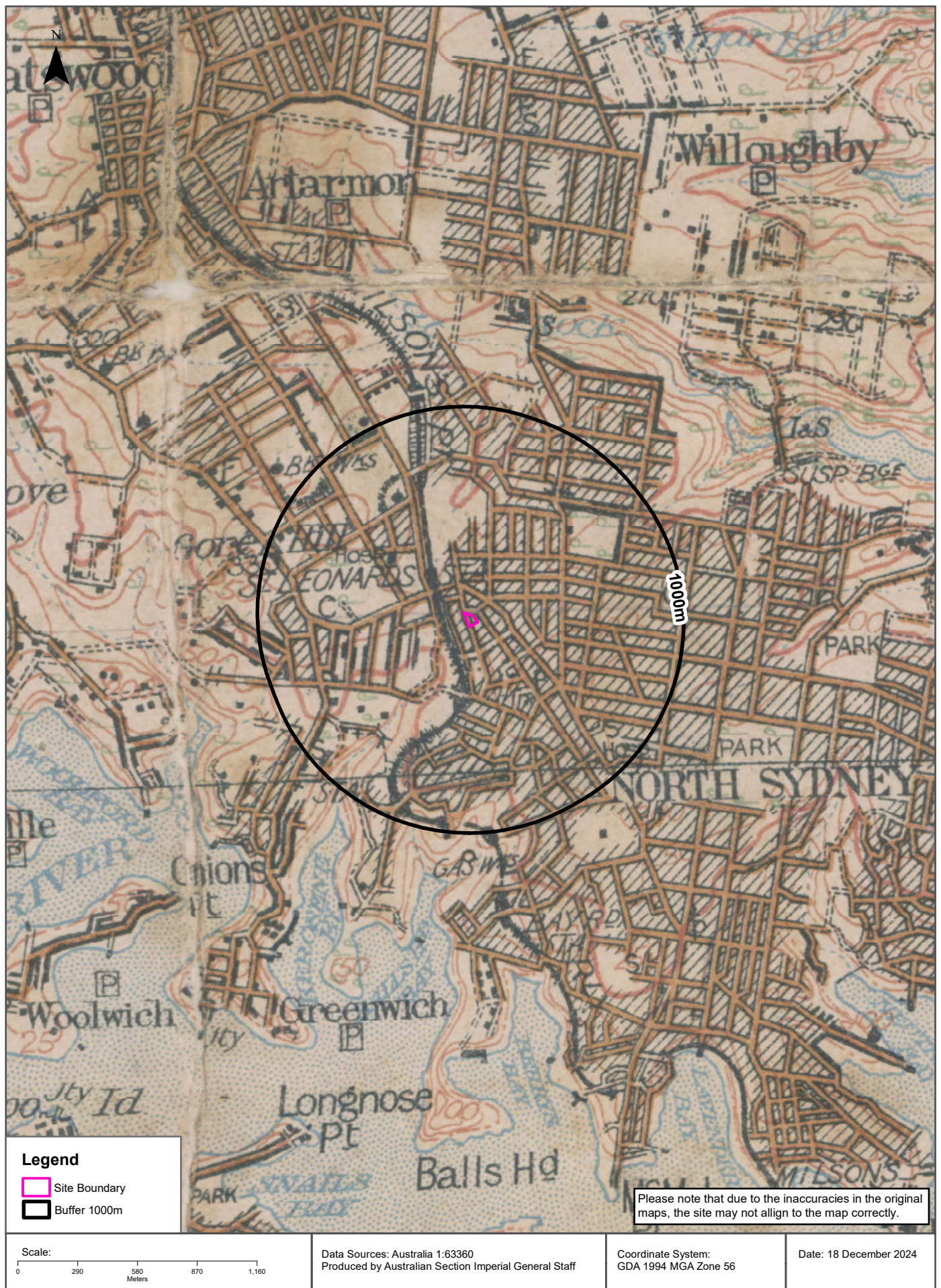
46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Scale: 0 290 580 870 1,160 Meters	Data Sources: Australia 1:63360 Produced by Australian Section Imperial General Staff	Coordinate System: GDA 1994 MGA Zone 56	Date: 18 December 2024
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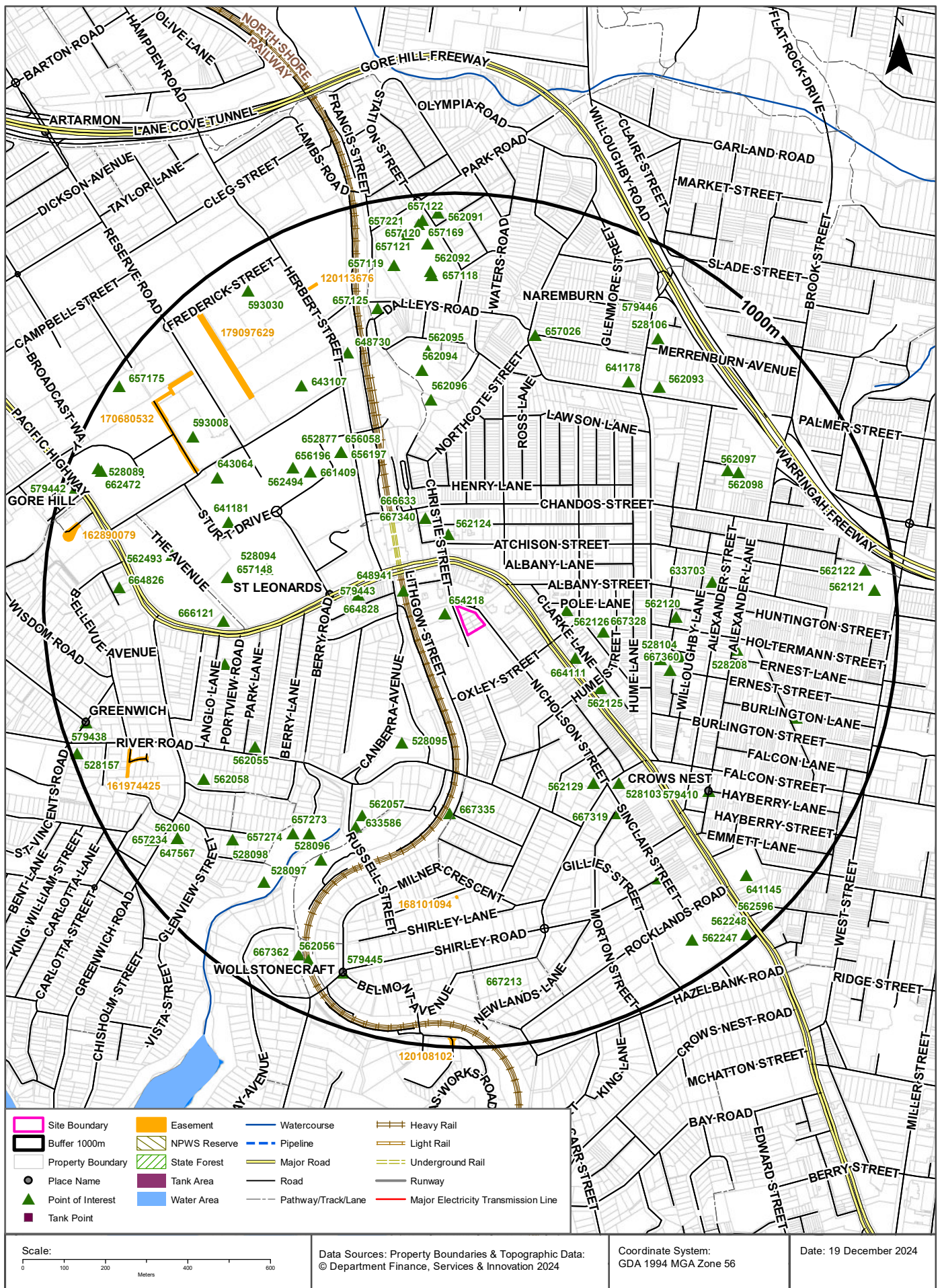
Historical Map c.1917

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Topographic Features

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Topographic Features

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
654218	Club	NORTHS RUGBY CLUB	32m	West
668377	Park	WADANGGARI PARK	132m	North West
562124	Post Office	ST LEONARDS POST OFFICE	174m	North
562126	Place Of Worship	Place Of Worship	201m	East
667340	Park	CHRISTIE STREET RESERVE	225m	North West
664111	Railway Station	CROWS NEST RAILWAY STATION	234m	East
664828	General Hospital	NORTHERN CANCER INSTITUTE ST LEONARDS	239m	West
648941	Transport Interchange	ST LEONARDS BUS INTERCHANGE	244m	West
666633	Railway Station	ST LEONARDS RAILWAY STATION	273m	North West
667328	Park	HUME STREET PARK	288m	East
528095	Park	NEWLANDS PARK	306m	South West
579443	Suburb	ST LEONARDS	308m	West
562125	Post Office	CROWS NEST POST OFFICE	320m	South East
528104	Place Of Worship	BAPTIST CHURCH	434m	East
667335	Park	BALFOUR STREET PARK	434m	South
667360	Park	ERNEST PLACE	462m	East
562120	Place Of Worship	METHODIST CHURCH	464m	East
562129	Place Of Worship	UNITING CHURCH	464m	South East
652877	Community Medical Centre	ROYAL NORTH SHORE COMMUNITY HEALTH CENTRE	466m	North West
656058	Community Medical Centre	SYDNEY DIALYSIS CENTRE	466m	North West
656196	Community Medical Centre	NORTHERN SYDNEY AREA COMMUNITY HEALTH	466m	North West
656197	Community Medical Centre	NORTHERN SYDNEY CENTRAL COAST ACUTE CARE FACILITY	466m	North West
528094	Sports Field	GORE HILL PARK	467m	West
652882	Community Medical Centre	CROWS NEST COMMUNITY HEALTH CENTRE	479m	East
661409	Helipad	Helipad	480m	North West
528103	Fire Station	CROWS NEST FIRE STATION	501m	South East
562096	Park	TALUS STREET RESERVE	504m	North
562057	Sports Field	BOWLING GREEN	506m	South West
562494	General Hospital	ROYAL NORTH SHORE HOSPITAL	518m	North West
633586	Club	WOLLSTONECRAFT BOWLING AND RECREATION CLUB	538m	South West
667319	Park	MORTON LANE ROAD RESERVE	558m	South East

Map Id	Feature Type	Label	Distance	Direction
657148	Sports Court	BASKETBALL	559m	West
633703	Place Of Worship	JEHOVAHS WITNESSES CHURCH	561m	East
666121	Primary School	INTERNATIONAL CHINESE SCHOOL	565m	West
562094	Sports Court	TENNIS COURTS	577m	North
528158	Park	PORTVIEW RESERVE	578m	West
562055	Park	PROPTING PLAYGROUND	582m	South West
641181	Special School	ROYAL NORTH SHORE HOSPITAL SCHOOL	588m	West
528208	Place Of Worship	ORTHODOX CHURCH	613m	East
657273	Park	GREENDALE PARK	616m	South West
562095	Community Facility	NORTHERN SUBURBS TENNIS ASSOCIATION	622m	North
657274	Community Facility	GREENWICH WOLLSTONECRAFT SCOUT HALL	641m	South West
528096	Park	SMOOTHEY PARK	651m	South West
643107	Post Office	ST LEONARDS POST BUSINESS CENTRE	652m	North West
643064	Post Office	ROYAL NORTH SHORE HOSPITAL POST OFFICE	657m	North West
648730	Embassy	ROYAL NORWEGIAN CONSULATE-GENERAL	668m	North West
641178	Special School	NAREMBURN SCHOOL	673m	North East
579410	Suburb	CROWS NEST	675m	South East
657026	Community Facility	BONGALONG STREET COMMUNITY GARDEN	683m	North
562098	Sports Centre	LOVE N DEUCE TENNIS CENTRE	698m	North East
657154	Historic Site	GORE HILL MEMORIAL CEMETERY	699m	West
562493	Cemetery	GORE HILL CEMETERY	699m	West
562093	Place Of Worship	CATHOLIC CHURCH	706m	North East
562097	Sports Court	TENNIS COURTS	718m	North East
562058	Nursing Home	GLENWOOD NURSING HOME	729m	South West
667323	Park	SINCLAIR STREET ROSE GARDEN	745m	South East
657125	Park	ELLA STREET RESERVE	747m	North
528098	Place Of Worship	ANGLICAN CHURCH	756m	South West
593008	General Hospital	NORTH SHORE PRIVATE HOSPITAL	758m	North West
528097	Park	GREENDALE PARK	776m	South West
667321	Park	CAHILL PLAYGROUND	787m	East
528106	Place Of Worship	ANGLICAN CHURCH	799m	North East
657118	Sports Field	NAREMBURN PARK 2	803m	North
562092	Park	NAREMBURN PARK	814m	North
664826	General Hospital	NORTH SHORE SPECIALIST DAY HOSPITAL	818m	West
579446	Locality	NAREMBURN	832m	North East
657119	Sports Field	NAREMBURN PARK 1	839m	North
657234	Child Care Centre	KU GREENWICH COMMUNITY PRESCHOOL	859m	South West

Map Id	Feature Type	Label	Distance	Direction
647567	Library	GREENWICH LIBRARY	859m	South West
596341	Community Facility	GREENWICH MEMORIAL COMMUNITY CENTRE	859m	South West
579445	Suburb	WOLLSTONECRAFT	872m	South
667362	Park	WOLLSTONECRAFT RAILWAY STATION PARK	875m	South West
641145	High School	NORTH SYDNEY GIRLS HIGH SCHOOL	877m	South East
562056	Railway Station	WOLLSTONECRAFT RAILWAY STATION	877m	South West
657120	Sports Court	CRICKET NETS	881m	North
667213	Park	HARRY HOWARD RESERVE	884m	South
657221	Sports Court	BASKETBALL COURTS	909m	North
562247	General Hospital	MATER HOSPITAL SYDNEY	913m	South East
562060	Place Of Worship	THE CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS	915m	South West
593030	Psychiatric Hospital	NORTHSIDE GROUP ST LEONARDS CLINIC	916m	North West
657121	Sports Court	BASKETBALL NETBALL	917m	North
662472	High School	BRADFIELD COLLEGE	921m	West
528089	TAFE College	ST LEONARDS TAFE COLLEGE	929m	West
657169	Community Facility	2ND WILLOUGHBY ANTRANIG SCOUT HALL	930m	North
562122	Cemetery	ST THOMAS CEMETERY	932m	East
562596	Park	THE MATER GARDENS	935m	South East
657122	Picnic Area	PLAYGROUND	939m	North
579438	Suburb	GREENWICH	940m	West
562121	Park	ST THOMAS REST PARK	949m	East
562091	SES Facility	WILLOUGHBY-LANE COVE SES	955m	North
579442	Urban Place	GORE HILL	965m	West
657175	Rubbish Depot	ARTARMON RESOURCE RECOVERY CENTRE	975m	North West
562248	High School	CAMMERAYGAL HIGH SCHOOL	983m	South East
528157	Park	ST VINCENTS RD PLAYGROUND	986m	West

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Topographic Features

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?

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

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

Tanks (Points)

What are the Tank Points located within the dataset buffer?

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

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

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

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Major Easements

What Major Easements exist within the dataset buffer?

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
168101094	Primary	Right of way		633m	South
170680532	Primary	Right of way	Var	706m	North West
179097629	Primary	Right of way	12m & var	706m	North West
161974425	Primary	Right of way	Variable	830m	South West
120113676	Primary	Undefined		844m	North West
162890079	Primary	Right of way	VAR	931m	West
120108102	Primary	Undefined		979m	South

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

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Topographic Features

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

State Forest

What State Forest exist within the dataset buffer?

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

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)

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Elevation Contours (m AHD)

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Hydrogeology & Groundwater

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Hydrogeology

Description of aquifers within the dataset buffer:

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

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2024

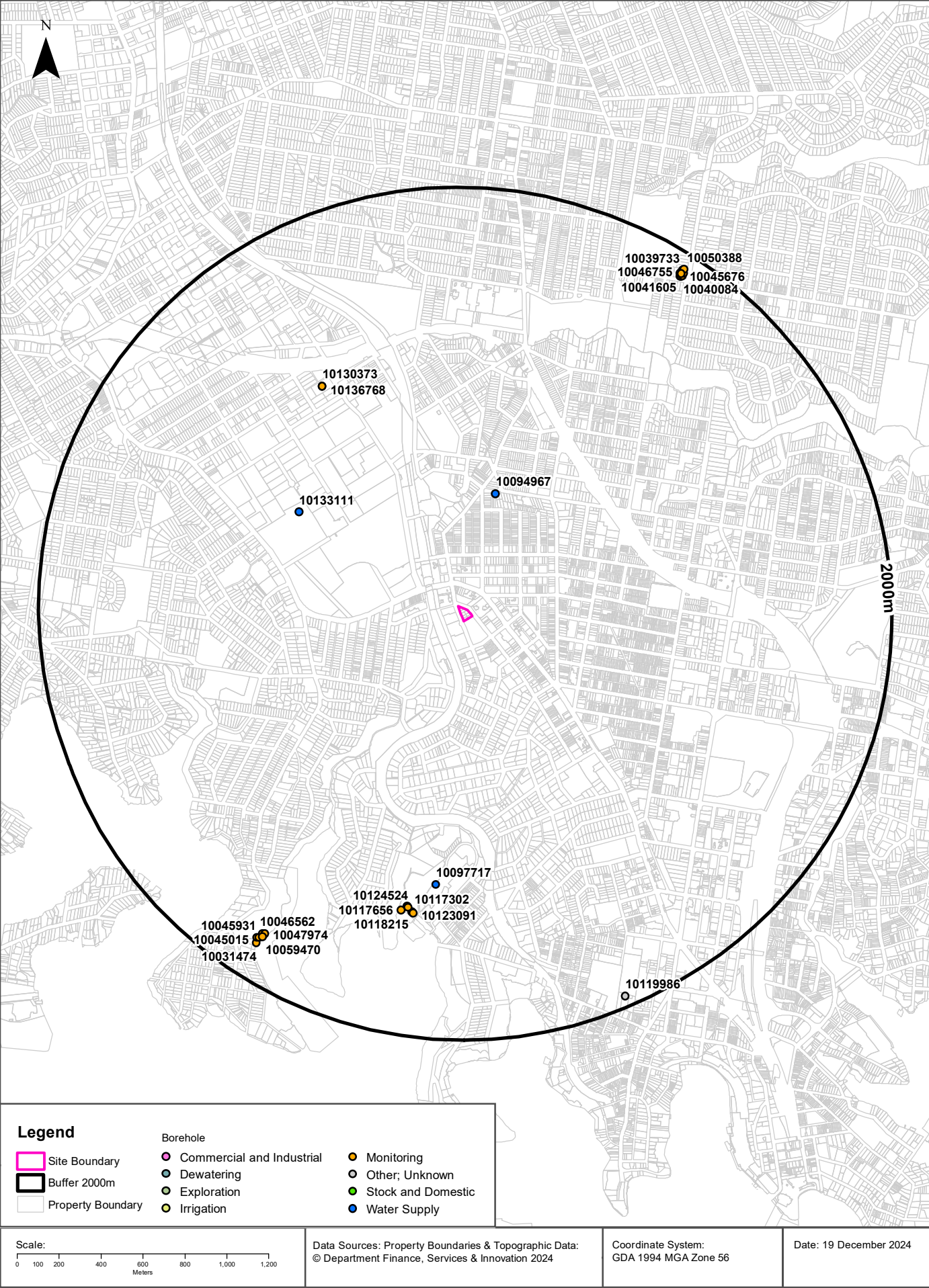
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2024 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Hydrogeology & Groundwater

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10094967	GW108224	Water Supply	Functioning	05/09/2006	132.40		AHD		0.300	35.00	565m	North
10133111	GW072478	Water Supply	Functioning	10/01/1995	180.50		AHD	270	0.700	48.00	880m	North West
10130373	GW103841	Monitoring	Unknown	11/01/2001	5.80		AHD				1232m	North West
10136768	GW103591	Monitoring	Functional	11/01/2001	5.80		AHD				1232m	North West
10097717	GW108991	Water Supply	Unknown	08/07/2008	168.00		AHD	300	0.120	13.00	1266m	South
10117302	GW114321	Monitoring	Functional	11/09/1996	11.90		AHD				1388m	South
10124524	GW114320	Monitoring	Functional	12/09/1996	5.00		AHD				1393m	South
10118215	GW114319	Monitoring	Functional	12/09/1996	5.00		AHD				1409m	South
10117656	GW114322	Monitoring	Functional	03/09/1996	10.00		AHD				1411m	South
10123091	GW114318	Monitoring	Functional	12/09/1996	10.00		AHD				1414m	South
10047974	GW109591	Monitoring	Unknown	05/09/2003	2.00		AHD				1768m	South West
10046562	GW109589	Monitoring	Unknown	30/04/2003	2.90		AHD				1775m	South West
10059470	GW109593	Monitoring	Unknown	02/05/2003	4.00		AHD				1786m	South West
10045931	GW109592	Monitoring	Unknown	05/09/2003	4.50		AHD				1798m	South West
10045015	GW109590	Monitoring	Unknown	30/04/2003	4.40		AHD				1804m	South West
10031474	GW103997	Monitoring	Unknown	26/08/1998	4.50		AHD				1826m	South West
10040084	GW113502	Monitoring	Functional	14/04/2007	4.00		AHD				1886m	North East
10043106	GW113503	Monitoring	Functional	20/01/2014	5.00		AHD				1888m	North East
10041605	GW113504	Monitoring	Functional	23/04/2007	4.50		AHD				1892m	North East
10049126	GW113497	Monitoring	Functional	23/04/2007	8.00		AHD				1895m	North East
10046755	GW113495	Monitoring	Functional	20/04/2007	5.00		AHD				1899m	North East
10050982	GW113496	Monitoring	Functional	20/04/2007	8.00		AHD				1900m	North East
10045676	GW113500	Monitoring	Functional	19/04/2007	6.00		AHD				1903m	North East
10049363	GW113498	Monitoring	Functional	20/04/2007	6.00		AHD				1907m	North East
10039733	GW113499	Monitoring	Functional	19/04/2007	5.00		AHD				1918m	North East
10050388	GW113501	Monitoring	Functional	20/04/2007	7.00		AHD				1925m	North East
10119986	GW107764	Unknown	Unknown	22/01/2007			AHD				1949m	South East

Borehole Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Hydrogeology & Groundwater

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

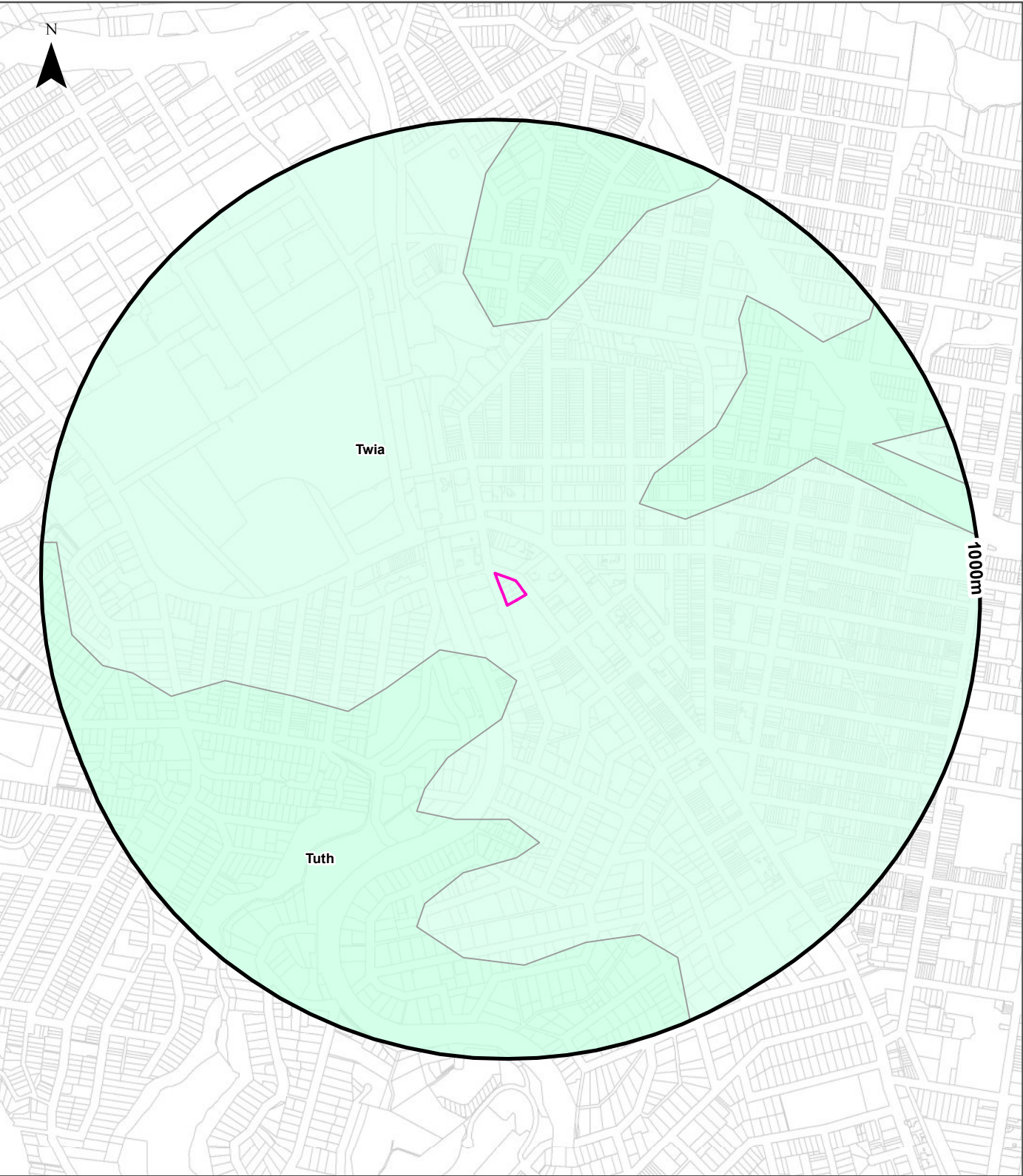
Driller's Logs

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

NGIS Bore ID	Drillers Log	Distance	Direction
10094967	0.00m-0.60m clay, sandy 0.60m-2.80m sandstone, weathered 2.80m-3.10m clay 3.10m-25.50m sandstone, weathered 25.50m-27.00m sandstone, grey quartz 27.00m-29.00m shale 29.00m-35.00m sandstone, quartz grey 35.00m-41.00m shale 41.00m-52.00m sandstone, grey 52.00m-54.00m sandstone, quartz grey 54.00m-61.00m sandstone, grey 61.00m-65.00m shale 65.00m-81.00m sandstone, grey 81.00m-84.00m sandstone, grey quartz siltstone 84.00m-98.00m sandstone, grey 98.00m-100.00m sandstone, grey quartz 100.00m-106.50m sandstone, grey 106.50m-109.00m sandstone, dark brown 109.00m-110.50m sandstone, grey quartz 110.50m-112.00m siltstone 112.00m-132.40m sandstone, grey	565m	North
10133111	0.00m-2.50m CONCRETE OVERBURDEN 2.50m-5.10m MOIST CLAY 5.10m-28.70m L/G MED. GRAIN SANDSTONE 28.70m-30.10m LIGHT GREY MED. GRAIN S/STONE QUARTZ MATRIX 30.10m-35.90m L/GREY GRAIN SANDSTONE 35.90m-37.20m L/GREY MED GRAIN S/STONE QUARTZ MATRIX 37.20m-45.30m L/GREY MED GRAIN S/STONE 45.30m-54.30m DARK GREY SHALE 54.30m-72.40m L/GREY CEMENTED S/STONE 72.40m-75.40m DARK GREY SHALE 75.40m-109.70m L/GREY MED GRAIN S/STONE 109.70m-110.60m QUARTZ LAYER 110.60m-121.80m L/GREY MED GRAIN S/STONE 121.80m-123.30m DARK GREY SHALE 123.30m-135.40m L/GREY MED GRAIN S/STONE 135.40m-138.00m L/GREY MED GRAIN S/STONE QUARTZ MATRIX 138.00m-139.80m WATER BEARING QUARTZ 139.80m-143.80m L/GREY MED GRAIN S/STONE QUARTZ MATRIX 143.80m-144.40m WATER BEARING QUARTZ 144.40m-154.10m L/GREY CEMENTED SANDSTONE 154.10m-163.70m L/GREY MED GRAIN S/STONE QUARTZ MATRIX 163.70m-166.90m QUARTZ LAYER 166.90m-168.70m GREY MED GRAIN S/STONE 168.70m-180.50m L/GREY MED GRAIN SANDSTONE	880m	North West
10130373	0.00m-0.20m ROAD BASE 0.20m-4.00m STIFF CLAY 4.00m-5.80m SANDY CLAY	1232m	North West
10136768	0.00m-2.00m ROAD BASE 2.00m-4.00m CLAY 4.00m-5.80m SANDY CLAY	1232m	North West
10047974	0.00m-0.30m CONCRETE 0.30m-0.60m BLACK AND DARK GREY LOAMY SAND WITH GRAVEL 0.60m-2.00m MIXTURE OF GREY AND LIGHT BROWN SANDY LOAM	1768m	South West
10046562	0.00m-0.30m CONCRETE 0.30m-0.50m DARK GREY AND BLACK SANDY LOAM/GRAVEL 0.50m-1.20m DARK GREY AND BLACK SANDY LOAM 1.20m-2.90m DARK GREY SANDY CLAY	1775m	South West
10059470	0.00m-0.20m CONCRETE 0.20m-0.60m DARK GREY AND BLACK SANDY LOAM WITH GRAVEL 0.60m-1.80m DARK GREY AND BLACK SANDY LOAM 1.80m-4.00m DARK GREY AND BLACK SANDY CLAY/GRAVEL	1786m	South West
10045931	0.00m-0.20m CONCRETE 0.20m-0.50m BLACK AND DARK GREY LOAMY SAND/GRAVEL 0.50m-1.10m BLACK AND DARK GREY SANDY LOAM 1.10m-4.50m BLACK SANDY AND SILTY LOAM	1798m	South West

NGIS Bore ID	Drillers Log	Distance	Direction
10045015	0.00m-0.20m CONCRETE 0.20m-0.70m DARK GREY AND BLACK SANDY LOAM WITH SOME GRAVEL 0.70m-1.20m DARK GREY AND BLACK SANDY LOAM 1.20m-4.40m DARK GREY TO BLACK SANDY CLAY	1804m	South West
10031474	0.00m-0.20m CONCRETE 0.20m-1.00m FILL: SANDY,DARK 1.00m-2.00m SANDY CLAY 2.00m-2.90m SANDY SILT/DARK GREY 2.90m-4.50m SANDY SILT:DARK GREY	1826m	South West

Drill Log Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>



Legend		Linear Geological Structures and Boundaries			
Site Boundary	Trendline	Marker Bed	Miscellaneous Boundary		
Report Buffer	Fold Axis	Faulted Boundary	Water/Coastline Boundary		
Property Boundary	Geological Boundary	Shear Zone or Schist Zone Boundary	State/Territory Border		

Scale: 0100200400600 Meters	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 December 2024
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Geology

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Geological Units

Geological units within the dataset buffer:

Code	Unit Name	Description	Stratigraphy	Age Range	Dominant Lithology	Dist	Dir
Twia	Ashfield Shale	Black to light grey shale and laminite.	/Wianamatta Group//Ashfield Shale//	Middle Triassic (base) to Middle Triassic (top)	Shale	0m	On-site
Tuth	Hawkesbury Sandstone	Medium- to coarse-grained quartz sandstone displaying small- to large-scale, high-angle cross-bedding; minor shale and laminite lenses.	/Ungrouped Triassic units//Hawkesbury Sandstone//	Anisian (base) to Anisian (top)	Sandstone	125m	South West

Geology

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Linear Geological Structures

Fault and shear or schist zone boundaries within the dataset buffer:

Map ID	Boundary Type	Feature Description	Fault Dip Angle	Fault Dip Direction	Dist	Dir
NA	No records in buffer					

Trendlines within the dataset buffer:

Map ID	Feature Description	Observation Method	Structure Name	Dist	Dir
NA	No records in buffer				

Fold axes within the dataset buffer:

Map ID	Feature Description	Observation Method	Structure Name	Dist	Dir
NA	No records in buffer				

Marker beds within the dataset buffer:

Map ID	Feature Description	Rock Unit Description	Dist	Dir
NA	No records in buffer			

Geological Data Source: Statewide Seamless Geology v2.4, NSW Department of Primary Industries and Regional Development
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Naturally Occurring Asbestos Potential

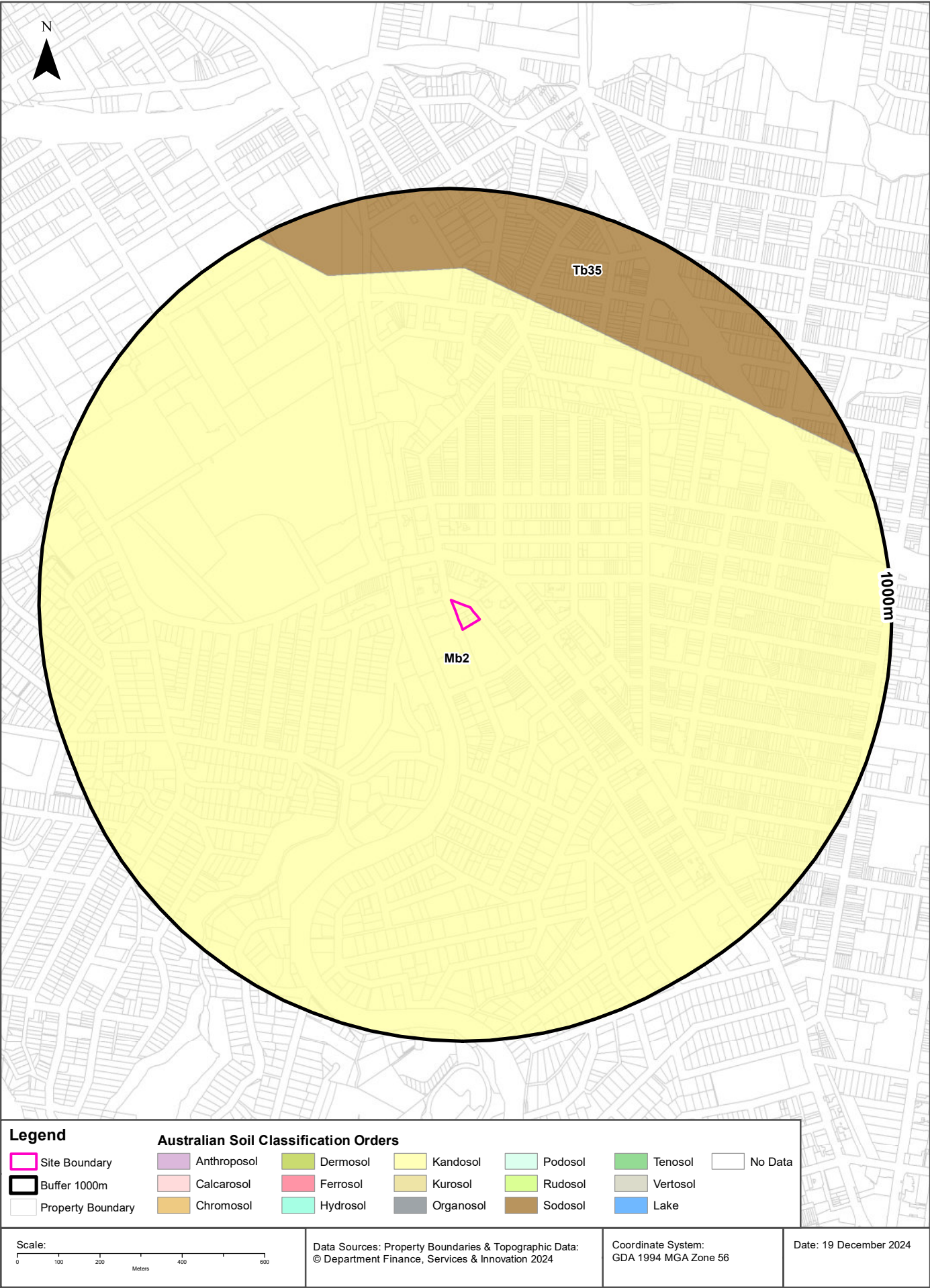
46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

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

Naturally Occurring Asbestos Potential Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy



Soils

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

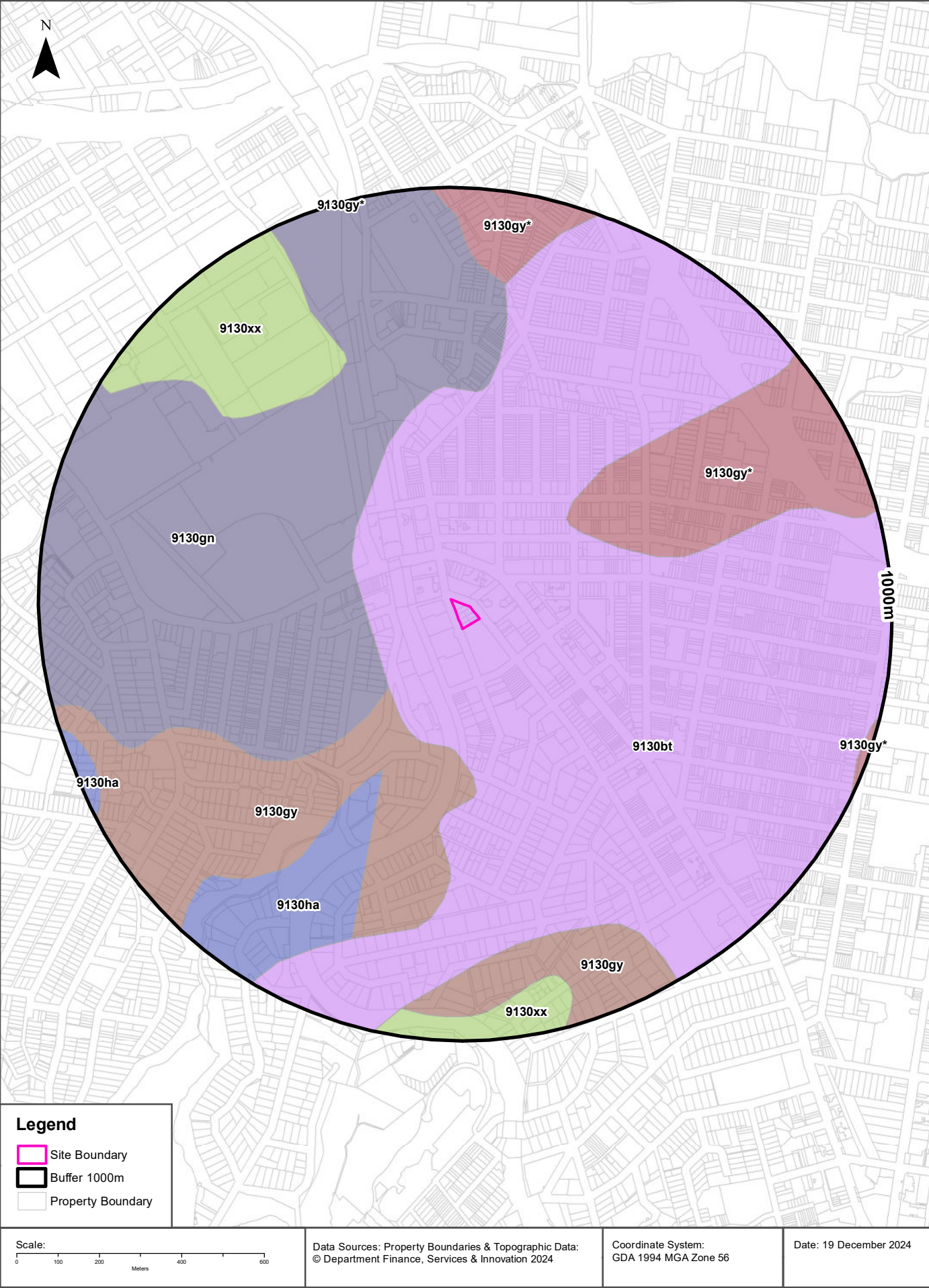
Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Mb2	Kandosol	Dissected sandstone plateau of moderate to strong relief with sandstone pillars, ledges, and slabs-- level to undulating ridges, irregularly benched slopes, steep ridges, cliffs, canyons, narrow sandy valleys: chief soils are (i) on areas of gentle to moderate relief, acid yellow leached earths (Gn2.74) and (Gn2.34) and acid leached yellow earths (Gn2.24)- sometimes these soils contain ironstone gravel; and (ii) on, or adjacent to, areas of strong relief, siliceous sands (Uc1.2), leached sands (Uc2.12) and (Uc2.2), and shallow forms of the above (Gn2) soils. Associated are: (i) on flat to gently undulating remnants of the original plateau surface, leached sands (Uc2.3), siliceous sands (Uc1.2), sandy earths (Uc5.22), and (Gn2) soils as for (i) above (these areas are in part comparable with unit Cb29); (ii) on flat ironstone gravelly remnants of the original plateau surface, (Gn2) soils as for unit Mb5(i); (iii) on gently undulating ridges where interbedded shales are exposed, shallow, often stony (Dy3.41), (Dr2.21), and related soils similar to unit Tb35; (iv) narrow valleys of (Uc2.3) soils flanked by moderate slopes of (Dy3.41) soils; (v) escarpments of steep hills with shallow (Dy) and (Dr) soils between sandstone pillars; and (vi) shallow (Um) soils, such as (Um6.21) on steep hills of basic rocks. As mapped, minor areas of units Mg20, Mm1, and Mw8 are included. Data are limited.	0m	On-site
Tb35	Sodosol	Dissected plateau remnants--flat to undulating ridge tops with moderate to steep side slopes: chief soils are hard acidic yellow and yellow mottled soils (Dy3.41), (Dy2.21), and (Dy2.41) and hard acidic red soils (Dr2.21); many shallow profiles occur and profile thickness varies considerably over short distances. Associated are: (Gn3.54), (Gn3.14), and possibly other (Gn3) soils; (Db1.2) soils on some ridges; (Dy5.81) soils in areas transitional to unit Mb2; soils common to unit Mb2; and eroded lateritic remnants. Small areas of other soils are likely. Flat ferruginous shale or sandstone fragments are common on and/or in and/or below the soils of this unit.	738m	North

Atlas of Australian Soils Data Source: CSIRO

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Soils

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Soil Landscapes of Central and Eastern NSW

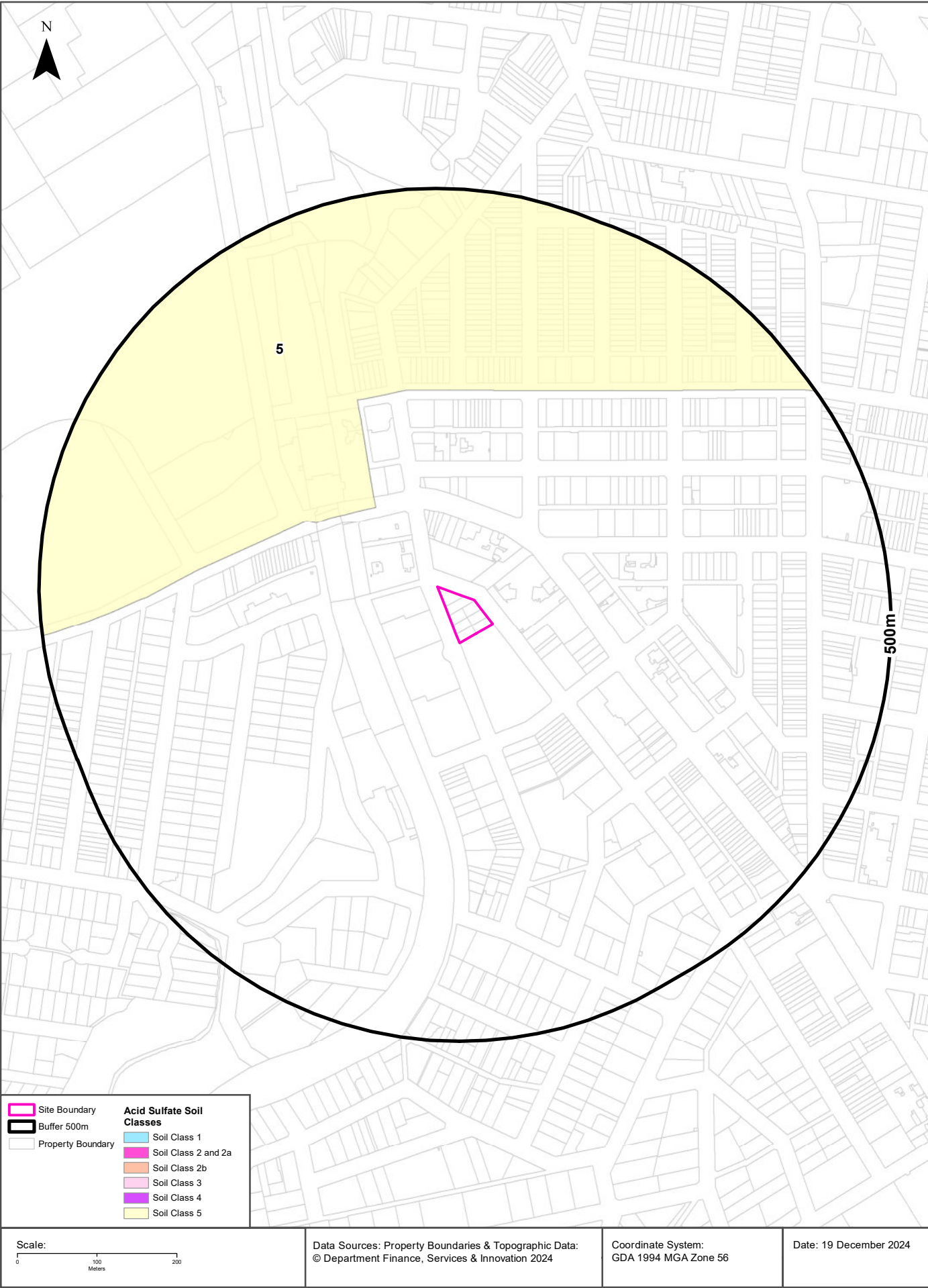
Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
9130bt	Blacktown	0m	On-site
9130gn	Glenorie	206m	North West
9130gy	Gymea	229m	South West
9130gy*	Gymea/lambert	312m	North East
9130ha	Hawkesbury	394m	South West
9130xx	Disturbed Terrain	600m	North West

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment
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Acid Sulfate Soils

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Acid Sulfate Soils

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Environmental Planning Instrument - Acid Sulfate Soils

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

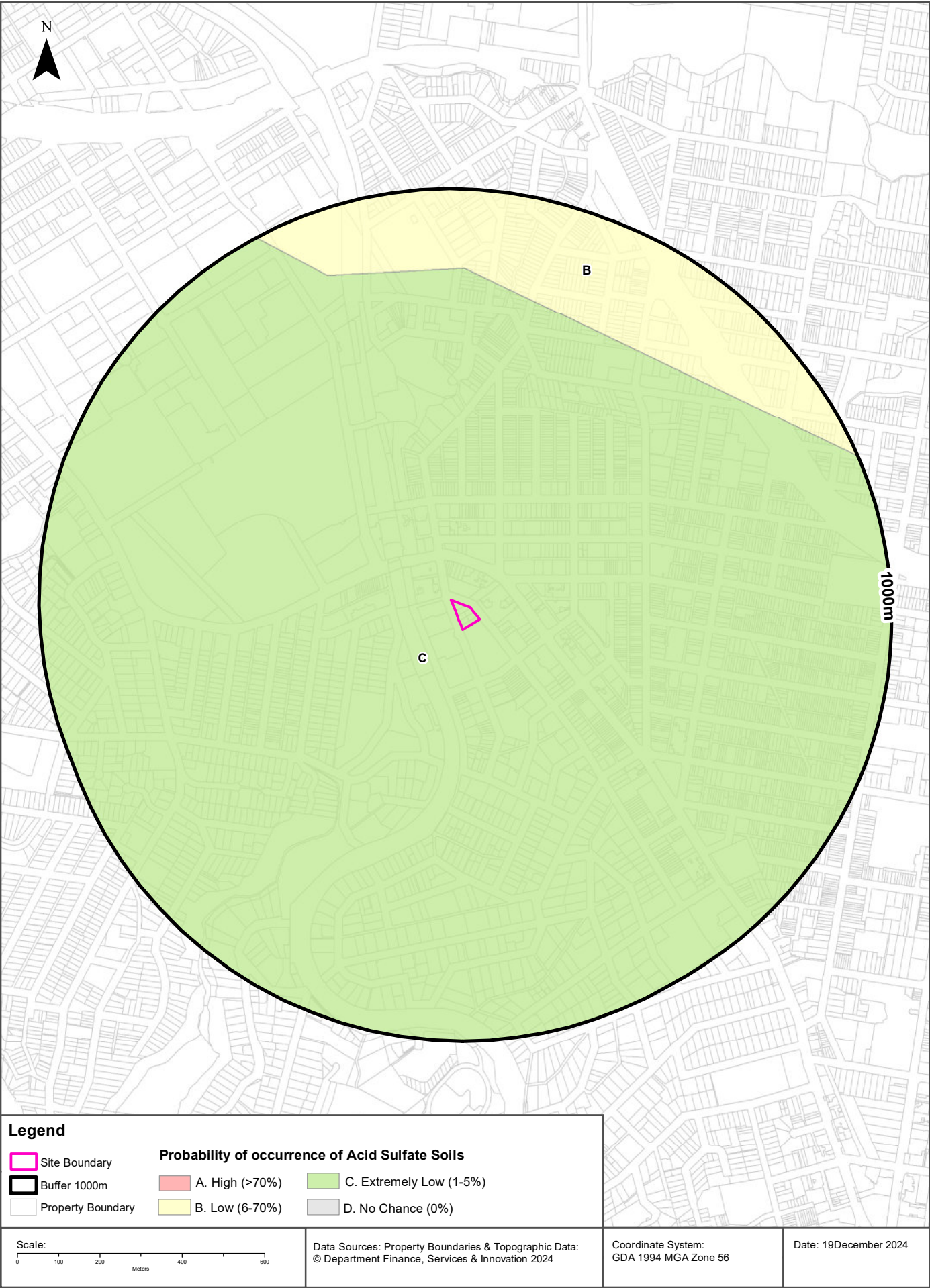
Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Acid Sulfate Soils

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site
B	Low Probability of occurrence. 6-70% chance of occurrence.	737m	North

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Dryland Salinity

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

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

Dryland Salinity Data Source : National Land and Water Resources Audit

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

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

Mining

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Mining Subsidence Districts

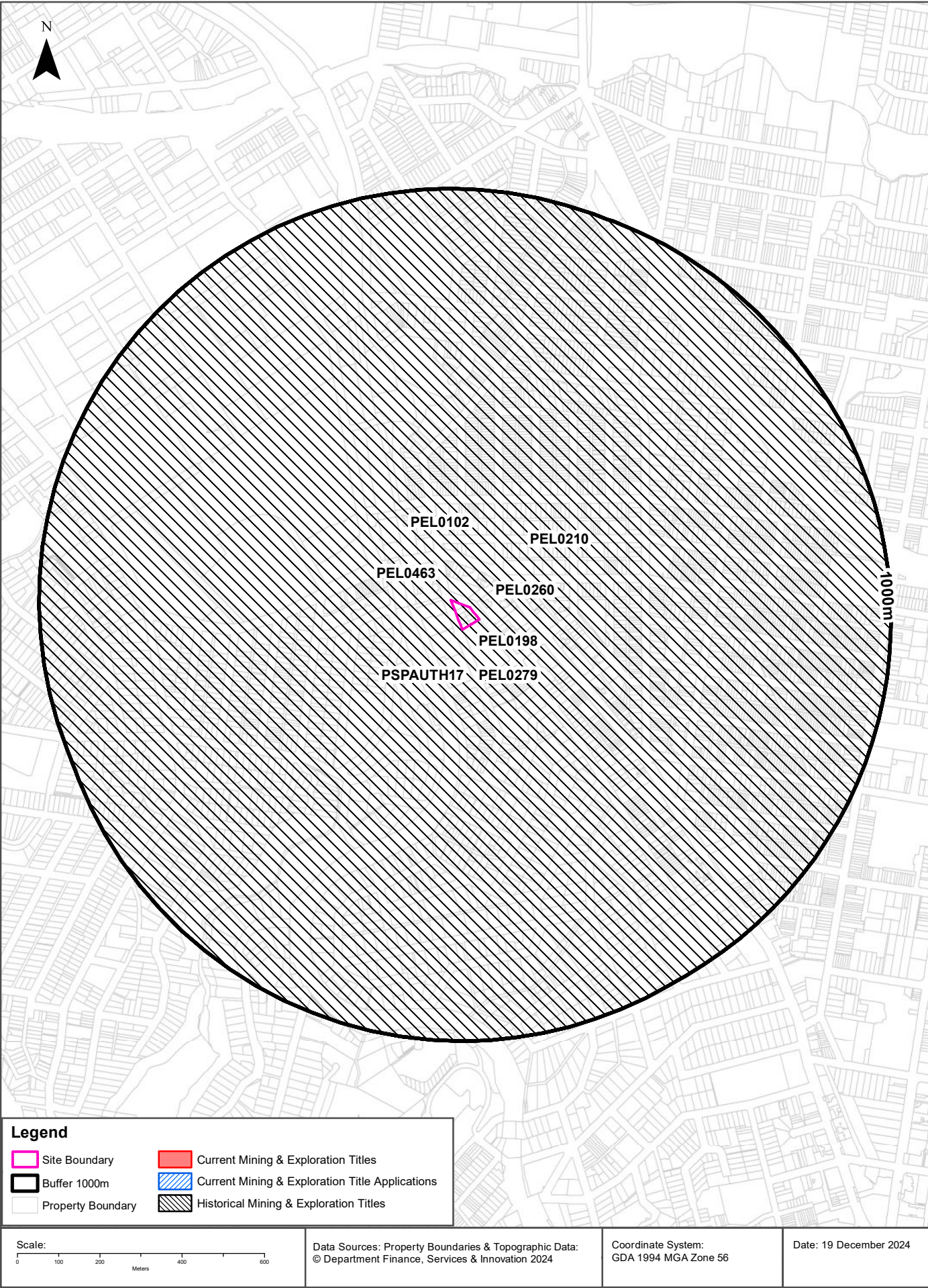
Mining Subsidence Districts within the dataset buffer:

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

Mining Subsidence District Data Source: © Land and Property Information (2016)
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Mining & Exploration Titles

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Mining

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

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

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

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

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

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

Mining

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0279	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	19910504	19931111	PETROLEUM	Petroleum	0m	On-site
PEL0210	THE AUSTRALIAN GAS LIGHT COMPANY (AGL), NORTH BULLI COLLIERIES PTY LTD			PETROLEUM	Petroleum	0m	On-site
PSPAUTH17	MACQUARIE ENERGY PTY LTD	20070803	20080703	PETROLEUM	Petroleum	0m	On-site
PEL0260	NORTH BULLI COLLIERIES PTY LTD, AGL PETROLEUM OPERATIONS PTY LTD, THE AUSTRALIAN GAS LIGHT CO.	19810909	19930803	PETROLEUM	Petroleum	0m	On-site
PEL0463	DART ENERGY (APOLLO) PTY LTD	20091010	20150603	PETROLEUM	Petroleum	0m	On-site
PEL0102	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL0198	JOHN STREVS (TERRIGAL) NL			PETROLEUM	Petroleum	0m	On-site

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

State Environmental Planning Policy

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

State Significant Precincts

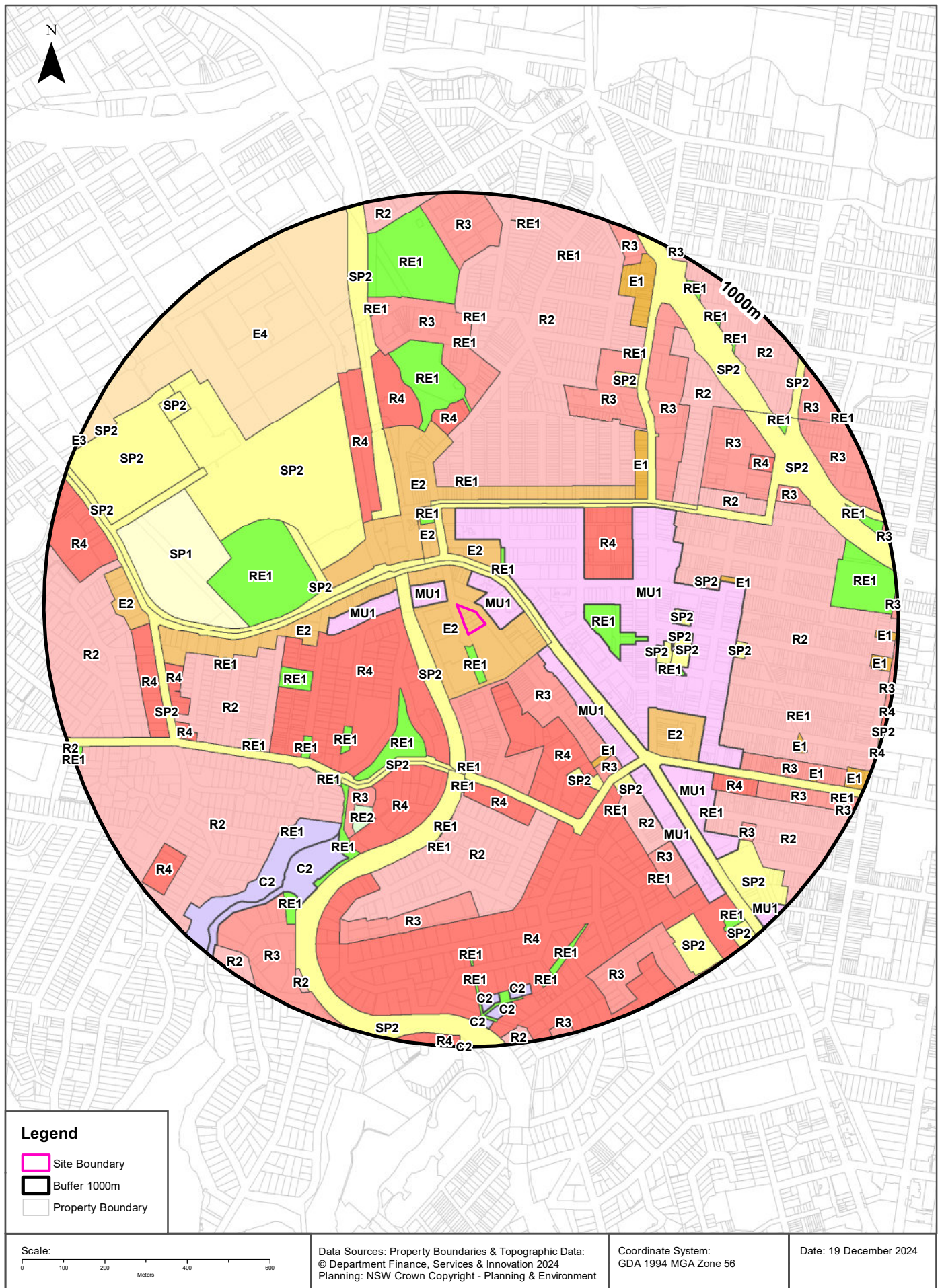
What SEPP State Significant Precincts exist within the dataset buffer?

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

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

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Environmental Planning Instrument

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
E2	Commercial Centre		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	0m	On-site
MU1	Mixed Use		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	20m	North East
MU1	Mixed Use		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	26m	North West
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	26m	South
SP2	Infrastructure	Classified Road	Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	89m	West
SP2	Infrastructure	Classified Road	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	102m	North East
SP2	Infrastructure	Railway	Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	103m	South West
E2	Commercial Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	116m	North
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	117m	North East
MU1	Mixed Use		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	118m	East
SP2	Infrastructure	Classified Road	Willoughby Local Environmental Plan 2012	08/03/2024	08/03/2024	08/03/2024	Amendment No 36	127m	North West
E2	Commercial Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	128m	North West
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	131m	South East
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	136m	South West
MU1	Mixed Use		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	137m	West
E2	Commercial Centre		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	139m	North
MU1	Mixed Use		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	142m	South East
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	142m	South East
E2	Commercial Centre		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	151m	West
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	209m	North West
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	211m	South West

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	239m	East
SP2	Infrastructure	Classified Road	Willoughby Local Environmental Plan 2012	08/03/2024	08/03/2024	08/03/2024	Amendment No 36	247m	North East
SP2	Infrastructure	Railway	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	258m	North
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	264m	North East
SP2	Infrastructure	Hospital	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	273m	North West
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	288m	North
R4	High Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	292m	North West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	295m	North
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	307m	South
SP2	Infrastructure	Classified Road	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	326m	South West
SP2	Infrastructure	Railway	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	331m	South West
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	336m	South
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	337m	West
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	349m	South
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	352m	South
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	360m	South West
R2	Low Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	381m	South
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	383m	West
R4	High Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	411m	North
SP2	Infrastructure	Place of Public Worship	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	414m	South East
SP2	Infrastructure	Place of Public Worship	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	416m	East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	422m	West
E1	Local Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	422m	South East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	424m	East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	426m	North
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	436m	South West
R4	High Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	437m	North

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	437m	South East
E2	Commercial Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	443m	South East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	445m	South
SP2	Infrastructure	Place of Public Worship	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	452m	East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	453m	South West
SP2	Infrastructure	Community Facility	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	455m	East
SP2	Infrastructure	Car Park	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	457m	East
R2	Low Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	467m	East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	469m	South West
E1	Local Centre		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	472m	North East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	474m	South West
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	474m	North
RE2	Private Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	478m	South West
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	480m	South West
SP2	Infrastructure	Emergency Services Facility	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	494m	South East
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	494m	South
MU1	Mixed Use		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	501m	South East
SP1	Special Activities	Cemetery	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	505m	West
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	506m	South
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	512m	North East
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	529m	North East
R2	Low Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	530m	South East
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	540m	North East
SP2	Infrastructure	Place of Public Worship	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	540m	East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	544m	South East
MU1	Mixed Use		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	544m	South East

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
C2	Environmental Conservation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	550m	South West
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	558m	West
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	561m	South West
C2	Environmental Conservation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	573m	South West
E1	Local Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	578m	East
R2	Low Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	589m	North East
SP2	Infrastructure	Place of Public Worship	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	605m	East
E4	General Industrial		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	612m	North West
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	618m	North East
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	622m	South
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	624m	South West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	624m	North
SP2	Infrastructure	Educational Establishment	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	644m	North East
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	660m	South East
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	678m	West
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	682m	South East
R2	Low Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	687m	South East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	688m	North
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	695m	South East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	698m	South East
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	699m	West
SP2	Infrastructure	Educational Establishment	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	705m	North West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	728m	North East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	730m	North
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	731m	North
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	739m	North East

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	742m	South East
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	742m	West
E2	Commercial Centre		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	745m	West
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	757m	South
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	758m	South West
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	760m	South
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	761m	South East
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	763m	East
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	769m	South West
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	769m	East
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	784m	South East
E1	Local Centre		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	788m	North East
R2	Low Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	788m	West
SP2	Infrastructure	Educational Establishment	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	798m	South East
SP2	Infrastructure	Electricity Transmission and Distribution	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	802m	North West
E1	Local Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	803m	East
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	811m	North
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	823m	South
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	829m	West
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	835m	East
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	839m	South East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	846m	South
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	856m	North East
SP2	Infrastructure	Health Services Facilities	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	859m	South East

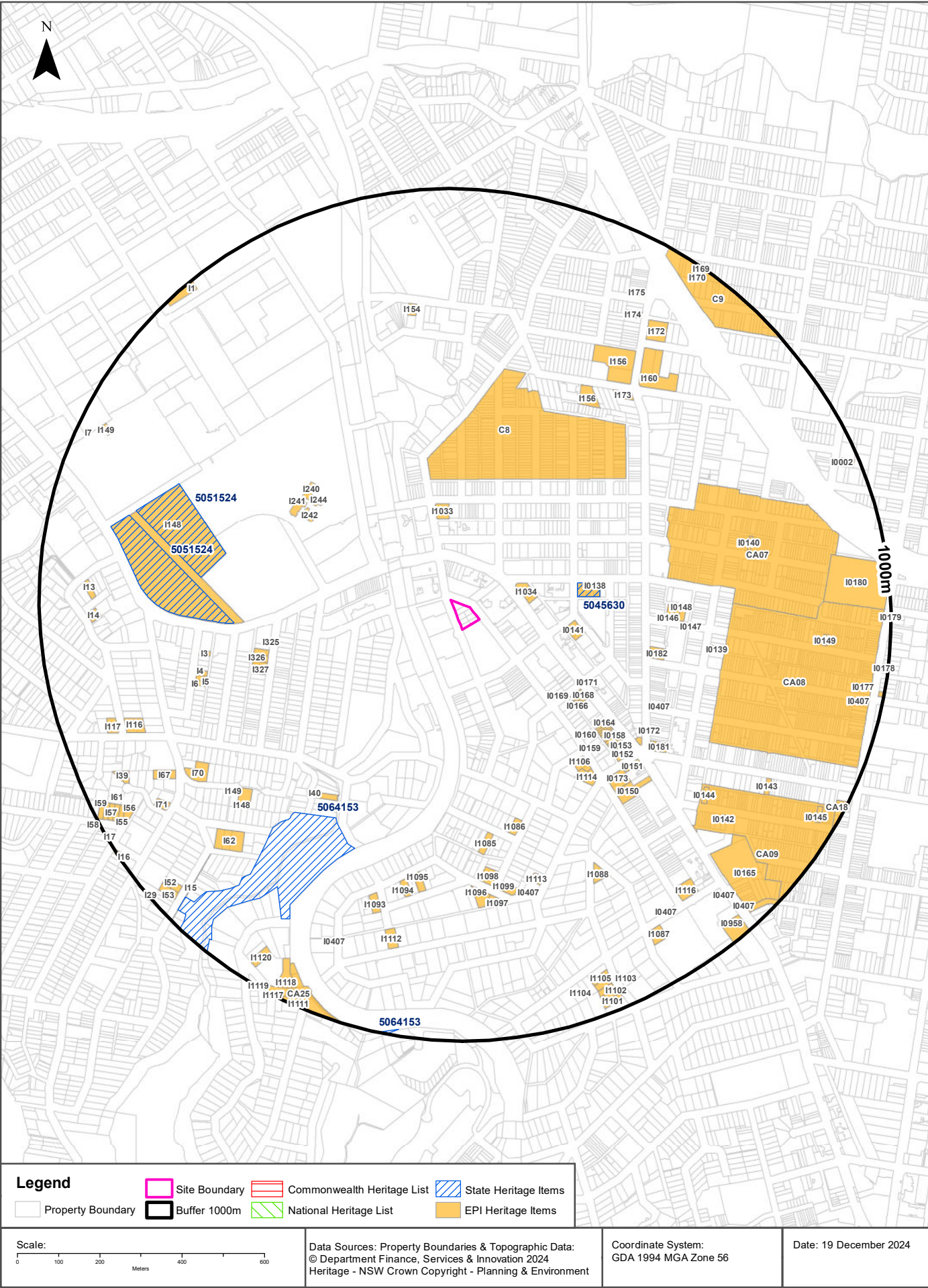
Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
C2	Environmental Conservation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	859m	South
R2	Low Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	863m	North East
E1	Local Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	867m	South East
R4	High Density Residential		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	869m	South West
C2	Environmental Conservation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	872m	South
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	878m	North
SP2	Infrastructure	Hospital	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	878m	West
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	884m	North East
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	892m	North East
C2	Environmental Conservation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	896m	South
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	906m	North East
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	906m	North East
R2	Low Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	908m	South West
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	911m	North East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	917m	East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	919m	South East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	928m	North East
C2	Environmental Conservation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	929m	South
E1	Local Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	935m	East
RE1	Public Recreation		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	940m	North
E1	Local Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	942m	East
SP2	Infrastructure	Educational Establishment	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	945m	South East
SP2	Infrastructure	Hospital	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	945m	North West
R2	Low Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	948m	South West
MU1	Mixed Use		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	953m	South East
R2	Low Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	955m	South
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	958m	South East

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	961m	South
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	964m	South East
RE1	Public Recreation		Lane Cove Local Environmental Plan 2009	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 1	970m	West
R3	Medium Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	980m	East
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	985m	East
C2	Environmental Conservation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	985m	South
SP2	Infrastructure	Educational Establishment	North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	987m	East
RE1	Public Recreation		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	989m	North East
R4	High Density Residential		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	994m	East
E3	Productivity Support		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	995m	North West
R3	Medium Density Residential		Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	08/03/2024	Amendment No 34	998m	North East
E1	Local Centre		North Sydney Local Environmental Plan 2013	21/04/2023	26/04/2023	30/06/2023	Map Amendment No 1	999m	South East

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Heritage Items

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Heritage

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Commonwealth Heritage List

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

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

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

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

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

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

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

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
5045630	Electricity Power House	23 Albany Street Crows Nest	NORTH SYDNEY	02/04/1999	00931	3076	245m	East
5051524	Gore Hill Memorial Cemetery	Pacific Highway, Gore Hill	WILLOUGHBY	25/05/2001	01491	2121	529m	West
5064153	Badangi	Wollstonecraft & Greenwich	NORTH SYDNEY	20/10/2023	02075	3295	551m	South West
5051524	Gore Hill Memorial Cemetery	Pacific Highway, Gore Hill	WILLOUGHBY	25/05/2001	01491	2121	558m	West

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Environmental Planning Instrument - Heritage

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

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I1034	Former Marco Building	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	119m	East

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I1033	Commercial building	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	199m	North
I0141	St Leonards Centre	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	208m	East
I0138	Electricity Powerhouse No 187	Item - General	State	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	245m	East
I0171	Higgins Buildings	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	289m	South East
C8	Naremburn	Conservation Area - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	294m	North
I0170	Higgins Buildings	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	294m	South East
I0169	Higgins Buildings	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	299m	South East
I0168	Higgins Buildings	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	304m	South East
I0167	Higgins Buildings	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	308m	South East
I0166	Higgins Buildings	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	313m	South East
I0164	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	387m	South East
I242	Resident Medical Officers (RMO) Building-known as Vanderfield Building (including original interior*	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	388m	North West
I244	Orthotics Building (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	392m	North West
I0163	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	393m	South East
I0162	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	398m	South East
I0161	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	403m	South East
I0160	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	408m	South East
I243	Anstro,Body Protein Building (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	413m	North West
I1106	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	414m	South East
I0182	Northside Baptist Church	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	418m	East
I0159	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	420m	South East
I241	Pavilion Wing Building, Block 1A (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	422m	North West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I240	Pavilion Wing Building, Block 1B (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	423m	North West
I0158	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	426m	South East
I0157	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	433m	South East
I0156	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	437m	South East
I1114	Uniting Church	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	438m	South East
I0155	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	441m	South East
I0154	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	445m	South East
I0153	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	449m	South East
I0146	Crows Nest Performing Arts Centre	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	452m	East
I325	Sandringham, 3 Park Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	459m	West
I0152	Former National Australia Bank	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	464m	South East
I326	House, 5 Park Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	464m	West
CA07	Holtermann Estate A	Conservation Area - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	467m	East
I0147	Uniting Church hall	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	470m	East
I327	House, 7 Park Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	472m	West
I1086	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	474m	South
I0172	Willoughby House, former OJ Williams store	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	477m	South East
I0148	Uniting Church parsonage	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	482m	East
I0407	North Sydney bus shelters	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	482m	South East
I0173	Crows Nest Fire Station	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	494m	South East
I1085	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	495m	South
I0407	North Sydney bus shelters	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	500m	South East
I40	House, 8 Eastview Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	502m	South West
I0151	Bank	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	502m	South East

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I148	Gore Hill Memorial Cemetery	Item - General	State	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	505m	West
I0181	Crows Nest Hotel	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	508m	South East
I0150	Former North Shore Gas Co office	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	530m	South East
I156	Converted Naremburn Public School and Resources Centre	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	561m	North East
I0139	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	562m	East
I1098	'Wyagdon'	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	579m	South
CA08	Holtermann Estate B	Conservation Area - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	596m	East
I3	House, 2 Anglo Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	597m	West
I1095	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	597m	South
I4	House, 10 Anglo Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	616m	West
I1113	'Illaroo'	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	617m	South
I1099	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	619m	South
I1094	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	619m	South
I5	House, 12 Anglo Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	621m	West
I173	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	622m	North East
I1096	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	622m	South
I6	House, 14 Anglo Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	626m	West
I148	House, 18 Wilona Avenue	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	641m	South West
I156	Converted Naremburn Public School and Resources Centre	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	644m	North East
I1097	'Morville'	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	647m	South
I1088	Astley Bank	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	649m	South East
I0407	North Sydney bus shelters	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	657m	South
I0140	Barn, outbuilding at rear	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	670m	East
I1093	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	671m	South

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
CA09	Holtermann Estate C	Conservation Area - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	671m	South East
I149	House and garage, 20 Wilona Avenue	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	673m	South West
I160	St Leonards Church (including original interiors), Presbytery and School Buildings and grounds	Item - General	Local	Willoughby Local Environmental Plan 2012	26/07/2024	26/07/2024	26/07/2024	679m	North East
I0144	Former hall	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	679m	South East
I154	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	695m	North
I70	Glenwood Nursing Home, 34-40 Greenwich Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	696m	South West
I62	St. Giles Anglican Church, 6-12 Greendale Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	722m	South West
I1112	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	742m	South
I0142	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	756m	South East
I67	House, 35 Greenwich Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	774m	South West
I172	St Cuthbert's Anglican Church (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	779m	North East
I0143	Former Church of Christ	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	795m	South East
I0165	North Sydney Girls' High School	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	798m	South East
I174	Group of shops	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	801m	North East
I116	Hazelhurst, 90 River Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	802m	West
I1116	Former Mater Misericordiae Maternity Hospital	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	805m	South East
I0407	North Sydney bus shelters	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	816m	South
I15	Streetscape elements (drain, embankment walls, sandstone retaining walls, rocky outcrop, steps), Be*	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	820m	South West
I71	House, 45 Greenwich Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	824m	South West
I0149	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	833m	East
I0180	St Thomas Rest Park (including Sexton's Cottage and cemetery fence)	Item - Landscape	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	835m	East

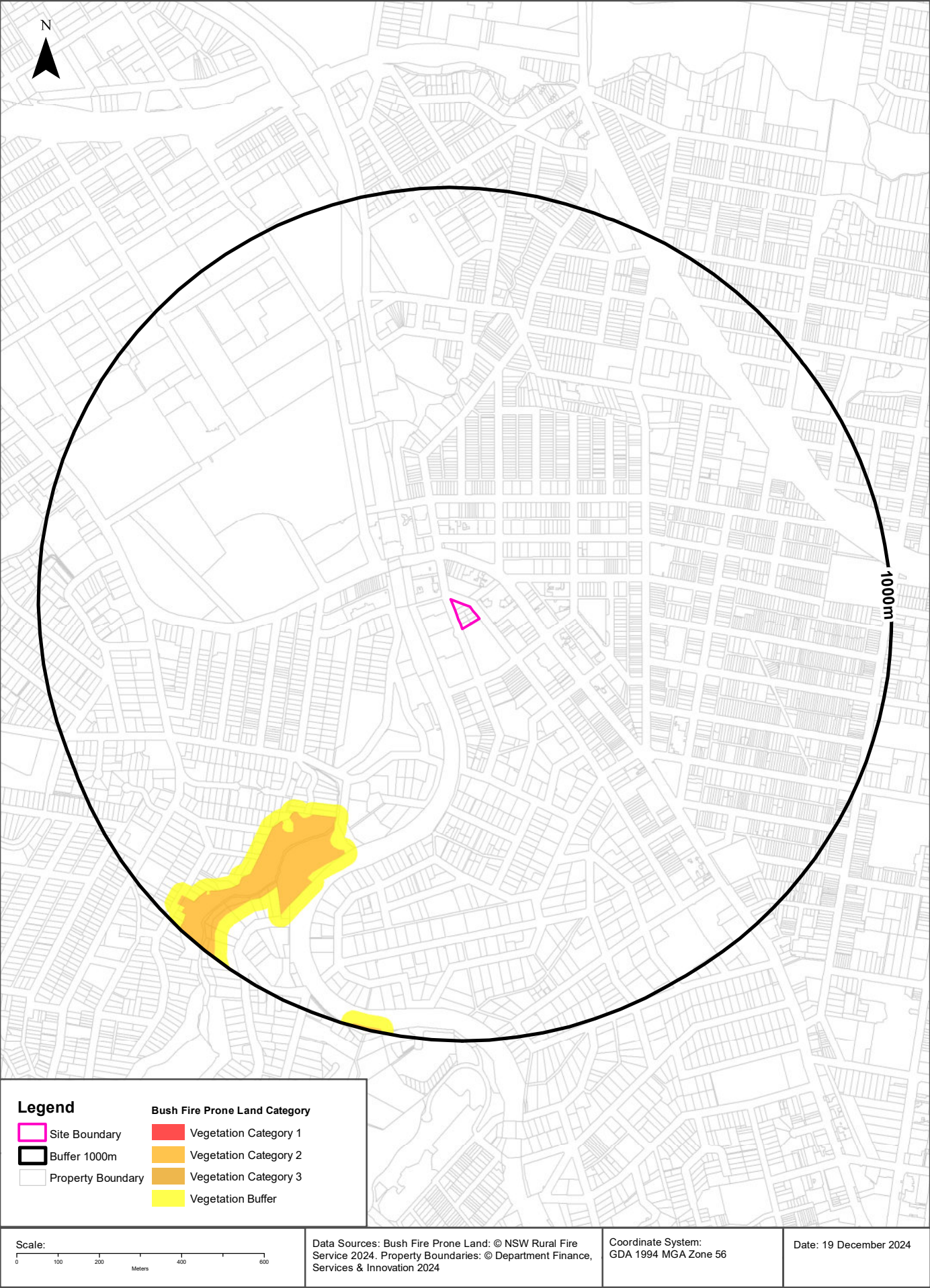
Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I0407	North Sydney bus shelters	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	841m	South East
I14	House, 14 Bellevue Avenue	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	851m	West
I175	Shops	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	855m	North East
I1087	Mater Hospital, RMOs, residence	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	860m	South East
I13	House, 8 Bellevue Avenue	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	863m	West
I117	House, 92 River Road	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	864m	West
I39	House, 5 Coolabah Avenue	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	881m	South West
I0407	North Sydney bus shelters	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	893m	South East
I1105	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	896m	South
CA25	Wollstonecraft	Conservation Area - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	902m	South West
I56	House, 1 Gore Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	902m	South West
I1118	'The Briars'	Item - Landscape	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	902m	South West
C9	Naremburn Central Township Naremburn Central Township Naremburn Central Township	Conservation Area - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	903m	North East
I1120	'Tullamore'	Item - Landscape	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	904m	South West
I1104	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	912m	South
I149	Former stables	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	919m	North West
I52	House, 19 Glenview Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	923m	South West
I55	House, 3 Gore Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	30/08/2013	30/08/2013	15/12/2017	924m	South West
I1103	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	932m	South
I61	House, 5 Gore Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	30/08/2013	30/08/2013	15/12/2017	933m	South West
I0145	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	937m	South East
I53	House, 21 Glenview Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	940m	South West
I0407	North Sydney bus shelters	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	941m	East

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I0407	North Sydney bus shelters	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	942m	South East
I57	Banksia, 7 Gore Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	944m	South West
I0958	Bradfield TAFE College	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	945m	South East
I1102	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	946m	South
I0002	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	952m	East
I58	Ione, 9 Gore Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	954m	South West
I1101	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	961m	South
I59	Rockleigh, 11 Gore Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	964m	South West
I7	Footings of the former transmission tower	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	966m	North West
I170	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	968m	North East
I169	House (including original interiors)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	971m	North East
CA18	Holtermann Estate D	Conservation Area - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	971m	South East
I1	Industrial building (including surviving industrial elements)	Item - General	Local	Willoughby Local Environmental Plan 2012	30/06/2023	30/06/2023	26/07/2024	976m	North West
I1111	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	978m	South West
I0177	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	984m	East
I16	House, 2 Carlotta Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	985m	South West
I0178	House	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	985m	East
I17	Tewhare, 5 Carlotta Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	988m	South West
I29	House, 2 Chisholm Street	Item - General	Local	Lane Cove Local Environmental Plan 2009	19/02/2010	19/02/2010	15/12/2017	989m	South West
I1119	House	Item - Landscape	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	992m	South West
I1117	House	Item - Landscape	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	996m	South West
I0179	Shop	Item - General	Local	North Sydney Local Environmental Plan 2013	02/08/2013	13/09/2013	28/06/2024	999m	East

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Natural Hazards - Bush Fire Prone Land

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065



Natural Hazards

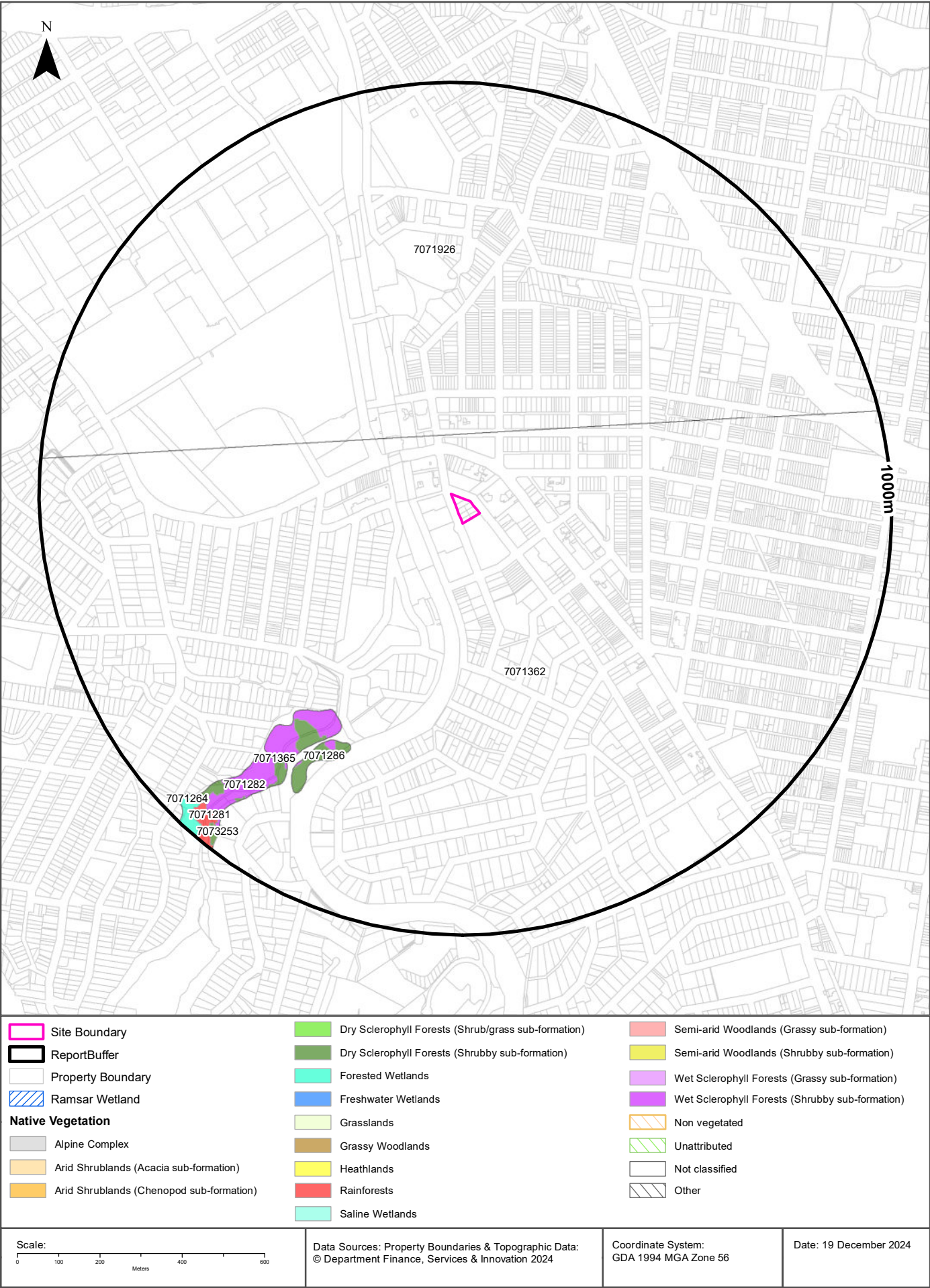
46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	519m	South West
Vegetation Category 2	549m	South West

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



Ecological Constraints

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
7071362	Not classified	(Not classified) Not classified	Not classified	0m	On-site
7071926	Not classified	(Not classified) Not classified	Not classified	144m	North
7071282	Wet Sclerophyll Forests (Shrubby sub-formation)	(Wet Sclerophyll Forests (Shrubby sub-formation)) Sydney Enriched Sandstone Moist Forest	North Coast Wet Sclerophyll Forests	552m	South West
7071286	Dry Sclerophyll Forests (Shrubby sub-formation)	(Dry Sclerophyll Forests (Shrubby sub-formation)) Sydney Coastal Enriched Sandstone Forest	Sydney Coastal Dry Sclerophyll Forests	566m	South West
7071364	Not classified	(Not classified) Not classified	Not classified	720m	South West
7071365	Not classified	(Not classified) Not classified	Not classified	722m	South West
7071281	Rainforests	(Rainforests) Sydney Coastal Coachwood Gallery Rainforest	Northern Warm Temperate Rainforests	920m	South West
7071264	Forested Wetlands	(Forested Wetlands) Estuarine Swamp Oak-Mangrove Forest	Coastal Floodplain Wetlands	921m	South West
7073253	Dry Sclerophyll Forests (Shrubby sub-formation)	(Dry Sclerophyll Forests (Shrubby sub-formation)) Sydney Coastal Sandstone Foreshores Forest	Sydney Coastal Dry Sclerophyll Forests	946m	South West

Native Vegetation Type Map : NSW Department of Planning and Environment 2022

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Ecological Constraints

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

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

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Agriculture, Water and the Environment

Ecological Constraints

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Collaborative Australian Protected Areas Database - Terrestrial

Protected areas in terrestrial environments identified by the CAPAD within the dataset buffer:

Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Collaborative Australian Protected Areas Database - Marine

Protected areas in marine environments identified by the CAPAD within the dataset buffer:

Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Source: Collaborative Australian Protected Areas Database (CAPAD) 2022
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Ecological Constraints

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Groundwater Dependent Ecosystems Atlas

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

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

Inflow Dependent Ecosystems Likelihood

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

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

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Ecological Constraints

46-52 Nicholson Street & 59-67 Christie Street, St Leonards, NSW 2065

NSW BioNet Species Sightings

Species sightings from the NSW BioNet Repository that have either a state or federal conservation status, or a sensitivity status, and are within 10 km of the site:

Note: This data does not include NSW Category 1 sensitive species.

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Heleioporus australiacus	Giant Burrowing Frog	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Not Sensitive	Endangered	Vulnerable	
Animalia	Amphibia	Pseudophryne australis	Red-crowned Toadlet	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Amaurornis moluccana	Pale-vented Bush-hen	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Anous stolidus	Common Noddy	Not Sensitive	Not Listed	Not Listed	CAMBA;JAMBA
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Category 2	Critically Endangered	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna carneipes	Flesh-footed Shearwater	Not Sensitive	Vulnerable	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Ardenna grisea	Sooty Shearwater	Not Sensitive	Not Listed	Not Listed	JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Sensitive	Not Listed	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Not Sensitive	Endangered	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Not Sensitive	Endangered	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris alba	Sanderling	Not Sensitive	Vulnerable	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Sensitive	Not Listed	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Not Sensitive	Critically Endangered	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris melanotos	Pectoral Sandpiper	Not Sensitive	Not Listed	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Category 3	Endangered	Endangered	
Animalia	Aves	Calonectris leucomelas	Streaked Shearwater	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptrorhynchus banksii banksii	Red-tailed Black-Cockatoo (coastal subspecies)	Category 2	Critically Endangered	Not Listed	
Animalia	Aves	Calyptrorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Category 2	Vulnerable	Not Listed	

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	<i>Calyptorhynchus lathamii</i>	South-eastern Glossy Black-Cockatoo	Category 2	Vulnerable	Vulnerable	
Animalia	Aves	<i>Certhionyx variegatus</i>	Pied Honeyeater	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Chthonicola sagittata</i>	Speckled Warbler	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Aves	<i>Cuculus optatus</i>	Oriental Cuckoo	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Daphoenositta chrysoptera</i>	Varied Sittella	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Diomedea exulans</i>	Wandering Albatross	Not Sensitive	Endangered	Vulnerable	
Animalia	Aves	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	Not Sensitive	Endangered	Not Listed	
Animalia	Aves	<i>Epthianura albifrons</i>	White-fronted Chat	Not Sensitive	Endangered Population, Vulnerable	Not Listed	
Animalia	Aves	<i>Erythroriorchis radiatus</i>	Red Goshawk	Category 2	Endangered	Endangered	
Animalia	Aves	<i>Esacus magnirostris</i>	Beach Stone-curlew	Not Sensitive	Critically Endangered	Not Listed	
Animalia	Aves	<i>Eudyptula minor</i>	Little Penguin	Not Sensitive	Endangered Population	Not Listed	
Animalia	Aves	<i>Falco subniger</i>	Black Falcon	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Gallinago hardwickii</i>	Latham's Snipe	Not Sensitive	Vulnerable	Vulnerable	ROKAMBA;JAMBA
Animalia	Aves	<i>Glossopsitta pusilla</i>	Little Lorikeet	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Grantiella picta</i>	Painted Honeyeater	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Aves	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Haematopus longirostris</i>	Pied Oystercatcher	Not Sensitive	Endangered	Not Listed	
Animalia	Aves	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Hieraaetus morphnoides</i>	Little Eagle	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Hirundapus caudacutus</i>	White-throated Needletail	Not Sensitive	Vulnerable	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Hydroprogne caspia</i>	Caspian Tern	Not Sensitive	Not Listed	Not Listed	JAMBA
Animalia	Aves	<i>Ixobrychus flavicollis</i>	Black Bittern	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Lathamus discolor</i>	Swift Parrot	Not Sensitive	Endangered	Critically Endangered	
Animalia	Aves	<i>Limosa lapponica</i>	Bar-tailed Godwit	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Limosa limosa</i>	Black-tailed Godwit	Not Sensitive	Vulnerable	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Lophoictinia isura</i>	Square-tailed Kite	Category 3	Vulnerable	Not Listed	
Animalia	Aves	<i>Macronectes giganteus</i>	Southern Giant Petrel	Not Sensitive	Endangered	Endangered	
Animalia	Aves	<i>Manorina melanotis</i>	Black-eared Miner	Not Sensitive	Critically Endangered	Endangered	
Animalia	Aves	<i>Menura alberti</i>	Albert's Lyrebird	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	<i>Neophema pulchella</i>	Turquoise Parrot	Category 3	Vulnerable	Not Listed	
Animalia	Aves	<i>Nettapus coromandelianus</i>	Cotton Pygmy-Goose	Not Sensitive	Endangered	Not Listed	
Animalia	Aves	<i>Ninox connivens</i>	Barking Owl	Category 3	Vulnerable	Not Listed	

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Ninox strenua	Powerful Owl	Category 3	Vulnerable	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Sensitive	Not Listed	Critically Endangered	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Pachycephala olivacea	Olive Whistler	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Category 3	Vulnerable	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Phaethon lepturus	White-tailed Tropicbird	Not Sensitive	Not Listed	Not Listed	CAMBA;JAMBA
Animalia	Aves	Phaethon rubricauda	Red-tailed Tropicbird	Not Sensitive	Vulnerable	Not Listed	CAMBA;JAMBA
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Polytelis anthopeplus monarchoides	Regent Parrot (eastern subspecies)	Category 3	Endangered	Vulnerable	
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Category 3	Vulnerable	Vulnerable	
Animalia	Aves	Pterodroma leucoptera leucoptera	Gould's Petrel	Not Sensitive	Vulnerable	Endangered	
Animalia	Aves	Pterodroma nigripennis	Black-winged Petrel	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Pterodroma solandri	Providence Petrel	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Ptilinopus magnificus	Wompoo Fruit-Dove	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Puffinus assimilis	Little Shearwater	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Aves	Stercorarius longicaudus	Long-tailed Jaeger	Not Sensitive	Not Listed	Not Listed	CAMBA;JAMBA
Animalia	Aves	Stercorarius parasiticus	Arctic Jaeger	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Stercorarius pomarinus	Pomarine Jaeger	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Sterna hirundo	Common Tern	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Not Sensitive	Endangered	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Sula dactylatra	Masked Booby	Not Sensitive	Vulnerable	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Thalassarche bulleri	Buller's Albatross	Not Sensitive	Not Listed	Vulnerable	
Animalia	Aves	Thalassarche cauta	Shy Albatross	Not Sensitive	Endangered	Endangered	
Animalia	Aves	Thalassarche chrysostoma	Grey-headed Albatross	Not Sensitive	Not Listed	Endangered	
Animalia	Aves	Thalassarche melanophris	Black-browed Albatross	Not Sensitive	Vulnerable	Vulnerable	

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Sensitive	Not Listed	Not Listed	JAMBA
Animalia	Aves	Thinornis cucullatus cucullatus	Eastern Hooded Dotterel	Not Sensitive	Critically Endangered	Vulnerable	
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa incana	Wandering Tattler	Not Sensitive	Not Listed	Not Listed	JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Category 3	Vulnerable	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Category 3	Vulnerable	Not Listed	
Animalia	Insecta	Petalura gigantea	Giant Dragonfly	Not Sensitive	Endangered	Not Listed	
Animalia	Mammalia	Aepyprymnus rufescens	Rufous Bettong	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Arctocephalus pusillus doriferus	Australian Fur-seal	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Balaenoptera musculus	Blue Whale	Not Sensitive	Endangered	Endangered	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Not Sensitive	Endangered	Endangered	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Not Sensitive	Vulnerable	Endangered	
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Not Sensitive	Endangered	Endangered	
Animalia	Mammalia	Dugong dugon	Dugong	Not Sensitive	Endangered	Not Listed	
Animalia	Mammalia	Eubalaena australis	Southern Right Whale	Not Sensitive	Endangered	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	Not Sensitive	Endangered	Endangered	
Animalia	Mammalia	Macrotis lagotis	Bilby	Not Sensitive	Extinct	Vulnerable	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Notomys cervinus	Fawn Hopping-mouse	Not Sensitive	Extinct	Not Listed	
Animalia	Mammalia	Notomys mitchellii	Mitchell's Hopping-mouse	Not Sensitive	Extinct	Not Listed	
Animalia	Mammalia	Perameles nasuta	Long-nosed Bandicoot	Not Sensitive	Endangered Population	Not Listed	
Animalia	Mammalia	Petauroides volans	Southern Greater Glider	Not Sensitive	Endangered	Endangered	
Animalia	Mammalia	Petaurus australis	Yellow-bellied Glider	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Not Sensitive	Endangered	Endangered	

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Physeter macrocephalus	Sperm Whale	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Pseudomys gracilicaudatus	Eastern Chestnut Mouse	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Pseudomys hermannsburgensis	Sandy Inland Mouse	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Sensitive	Not Listed	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheath-tail-bat	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Not Sensitive	Vulnerable	Not Listed	
Animalia	Reptilia	Aspidites ramsayi	Woma	Not Sensitive	Vulnerable	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Not Sensitive	Endangered	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Reptilia	Dermochelys coriacea	Leatherback Turtle	Not Sensitive	Endangered	Endangered	
Animalia	Reptilia	Diplodactylus platyrus	Eastern Fat-tailed Gecko	Not Sensitive	Endangered	Not Listed	
Animalia	Reptilia	Eretmochelys imbricata	Hawksbill Turtle	Not Sensitive	Not Listed	Vulnerable	
Animalia	Reptilia	Hoplocephalus bitorquatus	Pale-headed Snake	Not Sensitive	Vulnerable	Not Listed	
Animalia	Reptilia	Myuchelys bellii	Western Sawshelled Turtle, Bell's Turtle	Not Sensitive	Endangered	Endangered	
Animalia	Reptilia	Pseudonaja modesta	Ringed Brown Snake	Not Sensitive	Endangered	Not Listed	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Not Sensitive	Vulnerable	Not Listed	
Animalia	Reptilia	Uvidicolus sphyrurus	Border Thick-tailed Gecko	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Reptilia	Varanus rosenbergi	Rosenberg's Goanna	Not Sensitive	Vulnerable	Not Listed	
Fungi	Flora	Camarophyllopsis kearneyi		Not Sensitive	Endangered	Not Listed	
Fungi	Flora	Hygrocybe anomala var. ianthinmarginata		Not Sensitive	Vulnerable	Not Listed	
Fungi	Flora	Hygrocybe aurantipes		Not Sensitive	Vulnerable	Not Listed	
Fungi	Flora	Hygrocybe austropratensis		Not Sensitive	Endangered	Not Listed	
Fungi	Flora	Hygrocybe collucera		Not Sensitive	Endangered	Not Listed	
Fungi	Flora	Hygrocybe griseoramosa		Not Sensitive	Endangered	Not Listed	
Fungi	Flora	Hygrocybe lanecovens		Not Sensitive	Endangered	Not Listed	
Fungi	Flora	Hygrocybe reesia		Not Sensitive	Vulnerable	Not Listed	
Fungi	Flora	Hygrocybe rubronivea		Not Sensitive	Vulnerable	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Not Sensitive	Endangered	Vulnerable	
Plantae	Flora	Acacia gordonii		Not Sensitive	Endangered	Endangered	
Plantae	Flora	Acacia terminalis subsp. Eastern Sydney	Sunshine wattle	Not Sensitive	Endangered	Endangered	

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Allocasuarina portuensis	Nielsen Park She-oak	Category 3	Endangered	Endangered	
Plantae	Flora	Amperea xiphoclada var. pedicellata		Not Sensitive	Extinct	Extinct	
Plantae	Flora	Asterolasia buxifolia		Not Sensitive	Critically Endangered	Critically Endangered	
Plantae	Flora	Baeckea kandos		Category 3	Endangered	Endangered	
Plantae	Flora	Caladenia tessellata	Thick Lip Spider Orchid	Category 2	Vulnerable	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Category 3	Vulnerable	Not Listed	
Plantae	Flora	Chamaesyce psammogeton	Sand Spurge	Not Sensitive	Endangered	Not Listed	
Plantae	Flora	Darwinia biflora		Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Davidsonia jerseyana	Davidson's Plum	Category 2	Endangered	Endangered	
Plantae	Flora	Deyeuxia appressa		Not Sensitive	Endangered	Endangered	
Plantae	Flora	Dichanthium setosum	Bluegrass	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Doryanthes palmeri	Giant Spear Lily	Not Sensitive	Vulnerable	Not Listed	
Plantae	Flora	Epacris purpurascens var. purpurascens		Not Sensitive	Vulnerable	Not Listed	
Plantae	Flora	Epacris sparsa	Sparse Heath	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Eucalyptus camfieldii	Camfield's Stringybark	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Eucalyptus fracta	Broken Back Ironbark	Not Sensitive	Endangered	Not Listed	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Not Sensitive	Vulnerable	Not Listed	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Eucalyptus pulverulenta	Silver-leaved Gum	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Not Sensitive	Endangered	Vulnerable	
Plantae	Flora	Euphrasia collina subsp. muelleri	Mueller's Eyebright	Not Sensitive	Endangered	Endangered	
Plantae	Flora	Genoplesium baueri	Bauer's Midge Orchid	Category 2	Endangered	Endangered	
Plantae	Flora	Grammitis stenophylla	Narrow-leaf Finger Fern	Category 3	Endangered	Not Listed	
Plantae	Flora	Grevillea caleyi	Caley's Grevillea	Category 3	Critically Endangered	Critically Endangered	
Plantae	Flora	Grevillea hilliana	White Yiel Yiel	Not Sensitive	Endangered	Not Listed	
Plantae	Flora	Haloragodendron lucasii		Not Sensitive	Endangered	Endangered	
Plantae	Flora	Hibbertia puberula		Not Sensitive	Endangered	Not Listed	
Plantae	Flora	Hibbertia spanantha	Julian's Hibbertia	Category 2	Critically Endangered	Critically Endangered	
Plantae	Flora	Hibbertia superans		Not Sensitive	Endangered	Not Listed	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Category 3	Not Listed	Extinct	
Plantae	Flora	Lasiopetalum joyceae		Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Leptospermum deanei		Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Sensitive	Not Listed	Vulnerable	

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Melaleuca biconvexa	Biconvex Paperbark	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Melaleuca deanei	Deane's Paperbark	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Microtis angusii	Angus's Onion Orchid	Category 2	Endangered	Endangered	
Plantae	Flora	Persoonia hirsuta	Hairy Geebung	Category 3	Endangered	Endangered	
Plantae	Flora	Persoonia laxa		Not Sensitive	Extinct	Extinct	
Plantae	Flora	Pimelea curviflora var. curviflora		Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Prasophyllum fuscum	Slaty Leek Orchid	Category 2	Critically Endangered	Vulnerable	
Plantae	Flora	Prostanthera marifolia	Seaforth Mintbush	Category 3	Critically Endangered	Critically Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Not Sensitive	Critically Endangered	Critically Endangered	
Plantae	Flora	Sarcophilus hartmannii	Hartman's Sarcophilus	Category 2	Vulnerable	Vulnerable	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Not Sensitive	Endangered	Vulnerable	
Plantae	Flora	Tetradlea glandulosa		Not Sensitive	Vulnerable	Not Listed	
Plantae	Flora	Tetradlea juncea	Black-eyed Susan	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Thesium australe	Austral Toadflax	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Triplarina imbricata	Creek Triplarina	Not Sensitive	Endangered	Endangered	
Plantae	Flora	Wilsonia backhousei	Narrow-leafed Wilsonia	Not Sensitive	Vulnerable	Not Listed	

Source: NSW BioNet Species Sightings

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Location Confidences

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

LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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Appendix G: Borehole Logs

BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE

Method: SPIRAL AUGER

R.L. Surface: ~75.4 m

Date: 22/1/25 TO 23/1/25

Datum: AHD

Plant Type: JK330

Logged/Checked By: S.W./A.J.H.

Groundwater Record	SAMPLES				Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
	ES	U50	DB	DS										
DRY ON COMPLETION OF AUGERING						75			CH	CONCRETE: 150mm.t				6mm DIA. REINFORCEMENT, 60mm TOP COVER
					N = 14 4,7,7					Silty CLAY: high plasticity, red brown, trace of fine to medium grained ironstone gravel.	w>PL	VSt	210 220 230	RESIDUAL
							1			as above, but light grey mottled red brown.	w~PL	VSt - Hd	>600 >600 >600	SCREEN: 4.45kg(<10L), 0.5-1.0m, NO FCF
						74			CI	Silty CLAY: medium plasticity, light grey and red brown, with iron indurated sandstone bands.	w<PL	Hd	>600 >600 >600	SCREEN: 1.6kg(<10L), 1.5-2.0m, NO FCF
					N = 20 5,9,11		2		-	SANDSTONE: fine to medium grained, grey and brown, with extremely weathered seams.	HW	L		MITTAGONG FORMATION
						73					MW	M - H		LOW 'TC' BIT RESISTANCE
							3			REFER TO CORED BOREHOLE LOG				MODERATE TO HIGH RESISTANCE
						72								GROUNDWATER MONITORING WELL INSTALLED TO 18.29m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 9.29m TO 18.29m. CASING 0.15m TO 9.29m. 2mm SAND FILTER PACK 8.15m TO 18.29m. BENTONITE SEAL 3.01m TO 8.15m. BACKFILLED WITH SAND AND CUTTINGS TO THE SURFACE. COMPLETED WITH A CONCRETED GATIC COVER.
							4							
						71								
							5							
						70								
							6							
						69								

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE **Core Size:** HQ **R.L. Surface:** ~75.4 m
Date: 22/1/25 TO 23/1/25 **Inclination:** VERTICAL **Datum:** AHD
Plant Type: JK330 **Bearing:** N/A **Logged/Checked By:** S.W./A.J.H.

Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_p(50)$	SPACING (mm)	DEFECT DETAILS		Formation
										DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness	General	
		73			START CORING AT 2.70m							
		72	3		SANDSTONE: fine to medium grained, orange brown and grey, bedded at 0-15°.	MW	H	2.1		(2.74m) CS, 5°, 18 mm.t (2.81m) Be, 5°, P, R, Cn (2.98m) XWS, 5°, 30 mm.t (3.07m) CS, 5°, 17 mm.t (3.14m) Be, 10°, P, R, Fe Ct (3.16m) Be, 10°, P, R, Clay Ct (3.25m) Be, 5°, Un, S, Cn (3.32m) XWS, 0°, 12 mm.t (3.42m) Be, 5°, P, S, Fe Sn (3.44m) Be, 10°, C, S, Clay Ct		Mittagong Formation
					NO CORE 0.08m							
			4		SANDSTONE: fine to medium grained, orange brown and grey, bedded at 0-15°.	MW	M	0.60		(3.70m) Be, 0°, P, R, Fe Sn (3.74m) Cr, 20°, P, R, Clay Ct		
					SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 10-20°.		H	0.80		(4.03m) Be, 0°, P, R, Fe Sn		
			5		as above, but bedded at 0-10°.	FR		2.1		(4.37m) Be, 10°, P, R, Cn		
								1.3				
								1.7				
			6					1.2				
								1.6		(6.37m) Be, 5°, P, R, Cn		
								1.5				
			7		LAMINITE: Sandstone, fine grained, light grey, and Siltstone, dark grey, bedded at 0-10°.			1.7		(6.96m) Be, 0°, P, R, Cn		
								1.8				
								2.5				
			8					3.7				
							VH					

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE

Core Size: HQ

R.L. Surface: ~75.4 m

Date: 22/1/25 TO 23/1/25

Inclination: VERTICAL

Datum: AHD

Plant Type: JK330

Bearing: N/A

Logged/Checked By: S.W./A.J.H.

Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_p(50)$	SPACING (mm)	DEFECT DETAILS		Formation
										DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness	General	
					LAMINITE: Sandstone, fine grained, light grey, and Siltstone, dark grey, bedded at 0-10°. (continued)	FR	VH					Mittagong Formation
			66					3.5				
			10		SANDSTONE: fine grained, grey, with occasional dark grey laminae, bedded at 0-10°.		H	3.3		(9.89m) Be, 10°, P, R, Cn		
			65					2.3		(10.26m) Be, 0°, P, R, Cn		
			11					1.7		(10.45m) Be, 10°, Un, E, Cn		
			64		SANDSTONE: fine to coarse grained, light grey and light brown, with occasional grey laminae, bedded at 0-10°.			1.3		(10.68m) Be, 10°, C, R, Cb Ct		Hawkesbury Sandstone
								1.0		(10.84m) Be, 15°, C, R, Cn		
			12					1.1		(11.49m) Be, 0°, P, R, Clay FILLED, 5 mm.t		
			63		SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 0-20°.			1.5		(12.00m) J, 35°, Ir, S, Cn		
			13					1.4		(12.30m) Be, 10°, P, R, Clay Ct		
			62					1.2				
			14					1.3				
			61					1.5		(14.16m) Be, 5°, P, R, Clay Ct		
			15					1.2				
			60					1.3				
								1.8				

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE **Core Size:** HQ **R.L. Surface:** ~75.4 m
Date: 22/1/25 TO 23/1/25 **Inclination:** VERTICAL **Datum:** AHD
Plant Type: JK330 **Bearing:** N/A **Logged/Checked By:** S.W./A.J.H.

Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_p(50)$	DEFECT DETAILS		Formation
									SPACING (mm)	DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness	
								VL-0.1 L-0.3 M-1 H-3 VH-10 EH	600 200 60 20	Specific General	
0% RETURN		59			SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 0-20°. <i>(continued)</i>	FR	H				Hawkesbury Sandstone — (17.71m) Be, 0°, Un, R, Clay Ct
		17									
		58									
		18			as above, but bedded at 0-10°.						
		57			END OF BOREHOLE AT 18.34 m						
		19									
		56									
		20									
		55									
		21									
		54									
		22									
		53									

BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE **Method:** SPIRAL AUGER **R.L. Surface:** ~75.4 m
Date: 9/6/25 TO 11/6/25 **Datum:** AHD
Plant Type: JK330 **Logged/Checked By:** K.R./A.J.H.

Groundwater Record	SAMPLES				Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
	ES	U50	DB	DS										
DRY ON COMPLETION OF AUGERING						75			CH	CONCRETE: 160mm.t				6mm DIA. REINFORCEMENT, 60mm TOP COVER
					N = 19 10,9,10		1			Silty CLAY: high plasticity, red brown, trace of fine to medium grained ironstone gravel.	w>PL	VSt	270 290 310	RESIDUAL HAND AUGER TO 0.5m DEPTH
						74			CL-CI	as above, but red brown mottled light grey.				
					N = 23 7,12,11		2			Silty CLAY: low to medium plasticity, light grey, with ironstone gravel bands.	w-PL	VSt - Hd	380 430 410	BANDS OF LOW 'TC' BIT RESISTANCE
						73			-	SANDSTONE: fine to medium grained, brown and light grey.	MW	L - M		MITTAGONG FORMATION LOW TO MODERATE RESISTANCE
							3			REFER TO CORED BOREHOLE LOG				BOREHOLE BACKFILLED WITH BENTONITE 21.72m TO 33.55m
						72								GROUNDWATER MONITORING WELL INSTALLED TO 21.72m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 15.72m TO 21.72m. CASING 0.04m TO 15.72m. 2mm SAND FILTER PACK 15.00m TO 21.72m. BENTONITE SEAL 12.00m TO 15.00m. BACKFILLED WITH SAND TO THE SURFACE. COMPLETED WITH A CONCRETE GATIC COVER.
							4							
						71								
							5							
						70								
							6							
						69								

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE **Core Size:** HQ **R.L. Surface:** ~75.4 m
Date: 9/6/25 TO 11/6/25 **Inclination:** VERTICAL **Datum:** AHD
Plant Type: JK330 **Bearing:** N/A **Logged/Checked By:** K.R./A.J.H.

Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_p(50)$	SPACING (mm)	DEFECT DETAILS		Formation
										Specific	General	
		73			START CORING AT 2.63m							
			3		SANDSTONE: fine to medium grained, orange brown and grey, with dark grey laminae, bedded at 0-15°.	MW	H	2.7 2.1 1.8			(2.67m) CS, 0°, 5 mm.t (2.80m) Be, 5°, Ir, R, Cn (2.84m) CS, 0°, 45 mm.t (3.16m) Be, 10°, P, S, Clay Vn (3.23m) XWS, 5°, 20 mm.t (3.35m) XWS, 0°, 25 mm.t	
			4		SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 10-20°.		L - M	0.20 0.50			(3.66m) Be, 0°, P, S, Cn (3.81m) Be, 5°, P, S, Cn (3.92m) Be, 0°, P, S, Cn	
			5		as above, but bedded at 0-5°.	FR	H	1.6 1.3			(4.68m) Be, 10°, Ir, R, Cn	
			6					1.4 1.3 1.6				
			7		LAMINITE: Sandstone, fine grained, grey, and Siltstone, dark grey, bedded at 0-10°.			1.6 1.6			(6.87m) Be, 0°, P, S, Cn	
			8				VH	2.1 3.6				
							H	2.2				

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE **Core Size:** HQ **R.L. Surface:** ~75.4 m
Date: 9/6/25 TO 11/6/25 **Inclination:** VERTICAL **Datum:** AHD
Plant Type: JK330 **Bearing:** N/A **Logged/Checked By:** K.R./A.J.H.

Water Loss/Level Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50)	DEFECT DETAILS		Formation
								SPACING (mm)	DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness	
							VL-0.1 L-0.3 M-1 H-3 VH-10 EH	600 200 60 20	Specific General	
50-75% RETURN	66			LAMINITE: as above	FR	H	2.0		(9.32m) Be, 0°, P, S, Cn	Mittagong Formation
		10		SANDSTONE: fine grained, grey, with occasional dark grey laminae, bedded at 0-15°.			2.4		(10.06m) Be, 20°, C, R, Cn	
	65						1.5		(10.34m) Be, 10°, C, R, Cb FILLED (10.36m) Be, 10°, C, R, Cb FILLED	
		11			M - H		0.90		(10.56m) Be, 5°, C, R, Cn (10.67m) Be, 10°, C, R, Cn	
0% RETURN	64			SANDSTONE: fine to coarse grained, light grey, with dark grey laminae, bedded at 0-10°.			1.4		(11.33m) Be, 0°, P, S, Clay Vn	Hawkesbury Sandstone
		12		as above, but fine to medium grained, bedded at 0-20°.			1.3			
	63						0.80			
		13				H	0.90			
	62						1.0			
		14		SANDSTONE: fine to medium grained, light grey, with dark grey laminae and occasional siltstone clasts, bedded at 0-10°.			1.2			
	61						1.0			
		15					1.3			
	60						1.3		(15.37m) Be, 0°, P, R, Clay Vn	
							1.7		(15.87m) Be, 5°, P, R, Cn	

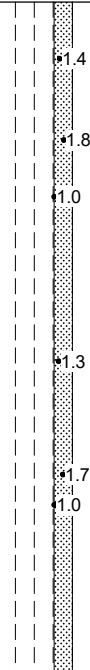
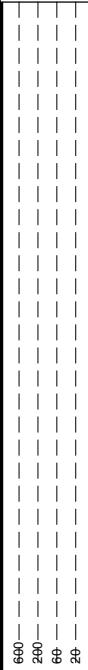
CORED BOREHOLE LOG

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Plant Type: JK330					Bearing: N/A			Logged/Checked By: K.R./A.J.H.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50)	DEFECT DETAILS			Formation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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0% RETURN			59		SANDSTONE: fine to medium grained, light grey, with dark grey laminae and occasional siltstone clasts, bedded at 0-10°. (continued)	FR	H	VL-0.1		600			Hawkesbury Sandstone																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST													
Project: PROPOSED MIXED USE DEVELOPMENT													
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW													
Job No.: 37263AE				Core Size: HQ				R.L. Surface: ~75.4 m					
Date: 9/6/25 TO 11/6/25				Inclination: VERTICAL				Datum: AHD					
Plant Type: JK330				Bearing: N/A				Logged/Checked By: K.R./A.J.H.					
Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50)	DEFECT DETAILS			Formation	
									SPACING (mm)	DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness			
0% RETURN			52		SANDSTONE: fine to medium grained, light grey, with dark grey laminae and occasional siltstone clasts, bedded at 0-10°. (continued)	FR	H		1.8				Hawkesbury Sandstone
			24						1.8				
			51						1.2				
					as above, but with occasional siltstone clasts.				1.5			(24.89m) Be, 0°, P, S, Clay Ct	
			25						1.5				
			50						1.9			(25.48m) Be, 0°, P, S, Clay Ct	
									1.6				
			26						1.2				
			49						1.2			(26.38m) Be, 0°, P, R, Cb Ct	
									1.7				
			27						1.8			(27.09m) Be, 5°, P, S, Cn	
			48						1.7				
						1.5							
		28											
		47											
		29			SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 10-20°.				1.8			(28.74m) Be, 0°, Ir, R, Cn	
									2.3				
		46							1.5			(29.90m) Be, 10°, P, S, Clay Ct	

Client:	ST LEONARDS PROPERTY UNIT TRUST	
Project:	PROPOSED MIXED USE DEVELOPMENT	
Location:	46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW	
Job No.: 37263AE	Core Size: HQ	R.L. Surface: ~75.4 m
Date: 9/6/25 TO 11/6/25	Inclination: VERTICAL	Datum: AHD
Plant Type: JK330	Bearing: N/A	Logged/Checked By: K.R./A.J.H.

Water Loss/Level		Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50) VL-0.1 L-0.3 M-1 H-3 VH-10 EH	DEFECT DETAILS		Formation
0% RETURN										SPACING (mm) 600 200 60 20	DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness Specific General	
				45		SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 10-20°. (continued)	FR	H				Hawkesbury Sandstone
			31									
			44									
			32									
			43									
			33									
			42									
				34		END OF BOREHOLE AT 33.55 m						
			41									
			35									
			40									
			36									
			39									

BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE

Method: SPIRAL AUGER

R.L. Surface: ~74.6 m

Date: 5/5/25 TO 6/5/25

Datum: AHD

Plant Type: JK330

Logged/Checked By: J.F./A.J.H.

Groundwater Record	SAMPLES				Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
	ES	U50	DB	DS										
DRY ON COMPLETION OF AUGERING									-	CONCRETE: 115mm.t				6mm DIA. REINFORCEMENT, 90mm TOP COVER
					N = 12 4,5,7	74			CH	FILL: Silty clay, high plasticity, dark grey, trace of fine to medium grained ironstone gravel.	w>PL			SCREEN: 1.60kg (<10L) 0.15-0.5m, NO FCF
							1			Silty CLAY: high plasticity, red brown and light grey, trace of fine to medium grained ironstone gravel.	w>PL	Hd	420 470 510	RESIDUAL
					N > 11 14,11/ 100mm REFUSAL	73				as above, but light grey mottled red brown, with extremely weathered seams.	w<PL		>600 >600 >600	
							2		-	SILTSTONE: dark grey and red brown, with extremely weathered seams.	HW	L		MITTAGONG FORMATION
						72				REFER TO CORED BOREHOLE LOG				BOREHOLE BACKFILLED WITH BENTONITE 24.40m TO 27.24m
							3							GROUNDWATER MONITORING WELL INSTALLED TO 24.40m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 15.40m TO 24.40m. CASING 0.10m TO 15.4m. 2mm SAND FILTER PACK 14.55m TO 24.40m. BENTONITE SEAL 8.60m TO 14.55m. BACKFILLED WITH SAND TO THE SURFACE. COMPLETED WITH A CONCRETED GATIC COVER.
						71								
							4							
						70								
							5							
						69								
							6							
						68								

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE

Core Size: HQ

R.L. Surface: ~74.6 m

Date: 5/5/25 TO 6/5/25

Inclination: VERTICAL

Datum: AHD

Plant Type: JK330

Bearing: N/A

Logged/Checked By: J.F./A.J.H.

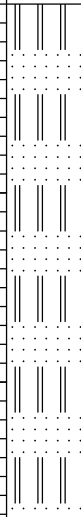
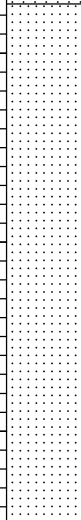
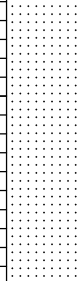
Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_p(50)$	SPACING (mm)	DEFECT DETAILS		Formation
										DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness	General	
					START CORING AT 2.50m							
		72			NO CORE 0.30m							
			3		Extremely Weathered sandstone: sandy silty CLAY, low to medium plasticity, light grey, with iron indurated bands.	XW	Hd					
					SANDSTONE: fine to medium grained, light grey and red brown, bedded at 0-10°.	HW	L					
		71				MW	M - H					
			4		SANDSTONE: fine to medium grained, light grey and light brown, with grey and dark grey laminae, bedded at 0-15°.	SW						
		70										
			5									
		69										
			6		as above, but light grey, with siltstone seams.	FR						
		68										
			7									
		67					H - VH					
			8		as above, but with siltstone clasts.							
					LAMINITE: Sandstone, fine grained, light grey, and Siltstone, dark grey, bedded at 0-5°.							
		66										

JK 9.024.LIB.GLB Log JK CORED BOREHOLE - MASTER 37263AE ST LEONARDS.GPJ <<DrawingFile>> 30/07/2025 11:37 10.01.00.01 D:\gel Lab and In Situ Tool - DGD\Lib JK 9.024 2019-05-31 Proj JK 9.01.0 2018-03-20

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FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST												
Project: PROPOSED MIXED USE DEVELOPMENT												
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW												
Job No.: 37263AE				Core Size: HQ				R.L. Surface: ~74.6 m				
Date: 5/5/25 TO 6/5/25				Inclination: VERTICAL				Datum: AHD				
Plant Type: JK330				Bearing: N/A				Logged/Checked By: J.F./A.J.H.				
Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50)	SPACING (mm)	DEFECT DETAILS		Formation
										Specific	General	
95% RETURN		65	10		LAMINITE: Sandstone, fine grained, light grey, and Siltstone, dark grey, bedded at 0-5°. (continued)	FR	H - VH	3.0	600	(9.49m) Be, 0°, P, S, Clay FILLED, 3 mm.t	Mittagong Formation	
		64	11			M - H	2.3	200	(9.56m) Be, 0°, P, S, Clay FILLED, 7 mm.t			
ON COMPLETION OF CORING		63	12		SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 0-10°.			0.50	600	(9.73m) Be, 5°, P, S, Clay Ct	Hawkesbury Sandstone	
		62	13				1.3	200	(9.98m) Be, 0°, P, S, Clay Ct			
40% RETURN		61	14					1.1	600	(12.23m) XWS, 0°, 10 mm.t		
		60	15				1.0	200				
		59						1.0	600	(15.00m) Be, 5°, P, S, Clay Ct		
								1.2	600			
								1.3	200			
								1.3	600			

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST												
Project: PROPOSED MIXED USE DEVELOPMENT												
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW												
Job No.: 37263AE					Core Size: HQ				R.L. Surface: ~74.6 m			
Date: 5/5/25 TO 6/5/25					Inclination: VERTICAL				Datum: AHD			
Plant Type: JK330					Bearing: N/A				Logged/Checked By: J.F./A.J.H.			
Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50) VL-0.1 L-0.3 N-1 H-3 VH-10 EH	SPACING (mm) 600 200 60 20	DEFECT DETAILS		Formation
										Specific	General	
40% RETURN			58		SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 0-10°. (continued)	FR	H	1.0			(16.50m) Be, 0°, P, S, Clay Ct	Hawkesbury Sandstone
			1.9									
			2.0									
			1.8									
			1.0									
			1.6							(18.67m) Be, 5°, P, S, Clay Ct		
			1.3									
			1.1									
			0.90							(19.88m) Be, 0°, P, S, Clay Ct		
			0.80							(20.00m) J, 85°, P, R, Cn		
			55		SANDSTONE: fine to medium grained, light grey, with dark grey laminae and occasional siltstone bands, bedded at 0-15°.	M	H					
			54		as above, but with a siltstone clast.		H				(20.70m) J, 75°, P, R, Cn	
										(20.36-21.17m) Crushed core (drilling induced)		
										(21.00m) J, 70°, P, R, Cn		
			53				H				(21.54m) Be, 0°, P, R, Cb Ct	
										(21.81m) Be, 0°, P, S, Clay Ct		
			52				H				(22.46m) Be, 10°, P, S, Cb Ct	
										(22.48m) XWS, 0°, 10 mm.t		

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST												
Project: PROPOSED MIXED USE DEVELOPMENT												
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW												
Job No.: 37263AE					Core Size: HQ				R.L. Surface: ~74.6 m			
Date: 5/5/25 TO 6/5/25					Inclination: VERTICAL				Datum: AHD			
Plant Type: JK330					Bearing: N/A				Logged/Checked By: J.F./A.J.H.			
Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50) VL-0.1 L -0.3 M -1 H 3 VH 10 EH	SPACING (mm) 600 200 60 20	DEFECT DETAILS		Formation
										DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness		
										Specific	General	
40% RETURN												
<												



BOREHOLE LOG

Client:ST LEONARDS PROPERTY UNIT TRUST

Project:PROPOSED MIXED USE DEVELOPMENT

Location:46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.:37263AE

Date:7/5/25

Plant Type:JK330

Method:SPIRAL AUGER

Logged/Checked By:J.F./A.J.H.

R.L. Surface:~72.6 m

Datum:AHD

Groundwater Record	SAMPLES				Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks	
	ES	U50	DB	DS											
DRY ON COMPLETION					N > 3 4.2, 1/ 100mm REFUSAL	72			-	CONCRETE: 110mm.t FILL: Silty sand, fine to medium grained, dark grey, with fine to medium grained igneous gravel. FILL: Silty clay, medium to high plasticity, dark brown and dark grey, with concrete and tile fragments.	M w>PL			7mm DIA. REINFORCEMENT, 70mm TOP COVER APPEARS POORLY COMPACTED	
						1		-	VOID: >0.5m.t						
							71				END OF BOREHOLE AT 1.40 m				BOREHOLE TERMINATED DUE TO THE PRESENCE OF A STORMWATER PIPE
							2								
						70									
							3								
						69									
							4								
						68									
							5								
						67									
							6								
						66									

BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE **Method:** SPIRAL AUGER **R.L. Surface:** ~72.4 m
Date: 29/5/25 **Datum:** AHD
Plant Type: JK205 **Logged/Checked By:** J.F./A.J.H.

Groundwater Record	SAMPLES				Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
	ES	U50	DB	DS										
ON COMPLETION						72				FILL: Silty clay, low plasticity, dark grey, with fine to medium grained sand, trace of root fibres.	w>PL			GRASS COVER HAND AUGER TO 1.3m DEPTH APPEARS POORLY COMPACTED
						71	1			FILL: Silty clay, medium to high plasticity, dark grey brown, trace of fine to medium grained ironstone gravel, wire and plastic fragments. as above, but with fine to medium grained sand.		180 150 160		
ON COMPLETION					N = 1 0,0,1	70	2			FILL: Silty clay, high plasticity, orange brown and light grey, trace of fine to medium grained ironstone gravel, and root fibres. FILL: Silty sandy clay, low plasticity, dark brown, fine to medium grained sand, trace of fine to medium grained igneous gravel, glass and fabric fragments.		150 160 140	20 20 10	BOREHOLE TERMINATED DUE TO 'TC' BIT REFUSAL ON SUSPECTED BURIED SERVICE
										END OF BOREHOLE AT 2.50 m				
							3							
						69								
							4							
						68								
							5							
						67								
							6							
						66								

JK 9.02.4 LIB GLB Log JK AUGERHOLE - MASTER 37263AE STLEONARDS.GPJ <<DrawingFile>> 30/07/2025 11:37 10.01.00.01 Datalog Lab and in Situ Tool - DOD Lib JK 9.02.4 2019-05-31 P.rj JK 9.01.0 2019-05-20

BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW

Job No.: 37263AE **Method:** SPIRAL AUGER **R.L. Surface:** ~76.3 m
Date: 30/4/25 TO 2/5/25 **Datum:** AHD
Plant Type: JK330 **Logged/Checked By:** J.F./A.J.H.

Groundwater Record	SAMPLES				Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
	ES	U50	DB	DS										
DRY ON COMPLETION OF AUGERING ON COMPLETION OF CORING						76				FILL: Silty sandy clay, low plasticity, dark grey, fine to medium grained sand, trace of fine to medium grained igneous gravel, and root fibres.	w>PL			GRASS COVER
					N = 10 3,4,6				CH	Silty CLAY: high plasticity, light grey mottled dark grey.	w>PL	VSt - Hd	360 420 440	HAND AUGER TO 0.45m DEPTH
							1			as above, but dark grey, trace of ash.		VSt	370 350 410	SCREEN: 11.40kg 0-0.2m, NO FCF RESIDUAL
					N = 8 3,3,5				CI-CH	Silty CLAY: medium to high plasticity, brown, trace of fine to medium grained ironstone gravel, and ash.			210 220 230	
							2						300 310 330	
										Silty CLAY: medium to high plasticity, red brown, trace of fine to medium grained ironstone gravel.	w<PL	Hd	410 600 >600	HP TESTING ON REMOULDED SAMPLE
					N > 8 11,8/ 50mm REFUSAL		3			as above, but with extremely weathered sandstone seams.				TOO FRIABLE FOR HP TESTING
									-	Extremely Weathered siltstone: silty CLAY, low plasticity, light grey and dark grey, with medium to high strength iron indurated bands.	XW	Hd		MITTAGONG FORMATION
							4							VERY LOW 'TC' BIT RESISTANCE WITH MODERATE BANDS
										SANDSTONE: fine to medium grained, grey.	MW	L - M		LOW TO MODERATE RESISTANCE
							5			REFER TO CORED BOREHOLE LOG				'TC' BIT REFUSAL
														BOREHOLE BACKFILLED WITH BENTONITE 25.22m TO 28.63m
							6							GROUNDWATER MONITORING WELL INSTALLED TO 25.22m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 17.22m TO 25.22m. CASING 0.11m TO 17.22m. 2mm SAND FILTER PACK 16.40m TO 25.22m. BENTONITE SEAL 3.40m TO 16.40m. BACKFILLED WITH SAND TO THE SURFACE. COMPLETED WITH A CONCRETED GATIC COVER.

Borehole No.
4
2 / 5

Client: ST LEONARDS PROPERTY UNIT TRUST														
Project: PROPOSED MIXED USE DEVELOPMENT														
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW														
Job No.: 37263AE					Core Size: HQ				R.L. Surface: ~76.3 m					
Date: 30/4/25 TO 2/5/25					Inclination: VERTICAL				Datum: AHD					
Plant Type: JK330					Bearing: N/A				Logged/Checked By: J.F./A.J.H.					
Water Loss Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50)	DEFECT DETAILS				Formation	
									DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness					
									SPACING (mm)					
									600	200	60	20	Specific	General
START CORING AT 4.61m														
NO CORE 0.29m														
5 <														

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST											
Project: PROPOSED MIXED USE DEVELOPMENT											
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW											
Job No.: 37263AE				Core Size: HQ				R.L. Surface: ~76.3 m			
Date: 30/4/25 TO 2/5/25				Inclination: VERTICAL				Datum: AHD			
Plant Type: JK330				Bearing: N/A				Logged/Checked By: J.F./A.J.H.			
Water Loss/Level Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50) VL-0.1 L-0.3 M-1 H-3 VH-10 EH	SPACING (mm) 600 200 60 20	DEFECT DETAILS		Formation
									Specific	General	
95% RETURN	65	12		LAMINITE: as above	FR	H	2.3	600	(11.08m) Be, 0°, P, S, Clay FILLED, 5 mm.t		Mittagong Formation
				SANDSTONE: fine grained, light grey, with dark grey laminae and siltstone bands, bedded at 0-5°.					(11.84m) XWS, 0°, 15 mm.t		
				SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 0-10°.					(12.38m) Be, 0°, P, S, Clay Vn		
	(13.35m) XWS, 0°, 15 mm.t										
	(15.36m) Be, 5°, P, S, Clay Ct										
	(16.19m) Be, 0°, P, S, Clay Vn										
	(17.30m) Be, 0°, P, S, Clay FILLED, 3 mm.t										
64	13	14	63	15	62	61	60	59			Hawkesbury Sandstone

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST														
Project: PROPOSED MIXED USE DEVELOPMENT														
Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW														
Job No.: 37263AE					Core Size: HQ				R.L. Surface: ~76.3 m					
Date: 30/4/25 TO 2/5/25					Inclination: VERTICAL				Datum: AHD					
Plant Type: JK330					Bearing: N/A				Logged/Checked By: J.F./A.J.H.					
Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX I _s (50)	DEFECT DETAILS		Formation			
									SPACING (mm)	DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness				
95% RETURN			58		SANDSTONE: fine to medium grained, light grey, with dark grey laminae, bedded at 0-10°. (continued)	FR	H	VL-0.1	600	200	60	20	(18.34m) Be, 0°, P, S, Clay Ct	Hawkesbury Sandstone
			19					L-0.3						
			57					M-1						
								H-3						
			20					VL-10						
			56					Et						
			21											
			55											
			22											
			54											
			23											
			53											
		24		SANDSTONE: fine to medium grained, light grey, with grey laminae and occasional siltstone bands, bedded at 0-15°.										
		52												

CORED BOREHOLE LOG

Client: ST LEONARDS PROPERTY UNIT TRUST Project: PROPOSED MIXED USE DEVELOPMENT Location: 46-52 NICHOLSON STREET & 59-67 CHRISTIE STREET, ST LEONARDS, NSW											
Job No.: 37263AE				Core Size: HQ				R.L. Surface: ~76.3 m			
Date: 30/4/25 TO 2/5/25				Inclination: VERTICAL				Datum: AHD			
Plant Type: JK330				Bearing: N/A				Logged/Checked By: J.F./A.J.H.			
Water Loss/Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_p(50)$	DEFECT DETAILS		Formation
									SPACING (mm)	DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness	
95% RETURN		51			SANDSTONE: fine to medium grained, light grey, with grey laminae and occasional siltstone bands, bedded at 0-15°. (continued)	FR	H		600	— (26.52m) Be, 5°, P, S, Clay Ct — (26.65m) Be, 0°, P, S, Clay Vn	Hawkesbury Sandstone
		26							200		
		50			as above, but without siltstone bands.				60		
		27							20		
		49									
		28									
		48									
					END OF BOREHOLE AT 28.63 m						
		29									
		47									
		30									
		46									
		31									
		45									



ENVIRONMENTAL LOGS EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the environmental report in regard to classification methods, field procedures and certain matters relating to the logging of soil and rock. Not all notes are necessarily relevant to all reports.

Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies include gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726:2017 'Geotechnical Site Investigations'. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geoenvironmental practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached soil classification table qualified by the grading of other particles present (eg. sandy clay) as set out below:

Soil Classification	Particle Size
Clay	< 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2.36mm
Gravel	2.36 to 63mm
Cobbles	63 to 200mm
Boulders	> 200mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose (VL)	< 4
Loose (L)	4 to 10
Medium dense (MD)	10 to 30
Dense (D)	30 to 50
Very Dense (VD)	> 50

Cohesive soils are classified on the basis of strength (consistency) either by use of a hand penetrometer, vane shear, laboratory testing and/or tactile engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength (kPa)	Indicative Undrained Shear Strength (kPa)
Very Soft (VS)	≤ 25	≤ 12
Soft (S)	> 25 and ≤ 50	> 12 and ≤ 25
Firm (F)	> 50 and ≤ 100	> 25 and ≤ 50
Stiff (St)	> 100 and ≤ 200	> 50 and ≤ 100
Very Stiff (VSt)	> 200 and ≤ 400	> 100 and ≤ 200
Hard (Hd)	> 400	> 200
Friable (Fr)	Strength not attainable – soil crumbles	

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'shale' is used to describe fissile mudstone, with a weakness parallel to bedding. Rocks with alternating inter-laminations of different grain size (eg. siltstone/claystone and siltstone/fine grained sandstone) are referred to as 'laminite'.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All methods except test pits, hand auger drilling and portable Dynamic Cone Penetrometers require the use of a mechanical rig which is commonly mounted on a truck chassis or track base.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils and 'weaker' bedrock if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for a large excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the

structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Refusal of the hand auger can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and insitu testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of limited reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock cuttings. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be assessed from the cuttings, together with some information from “feel” and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term ‘mud’ encompasses a range of products ranging from bentonite to polymers. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (eg. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, NMLC or HQ triple tube core barrels, which give a core of about 50mm and 61mm diameter, respectively, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as NO CORE. The location of NO CORE recovery is determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the bottom of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils, as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is

described in Australian Standard 1289.6.3.1–2004 (R2016) ‘*Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – Standard Penetration Test (SPT)*’.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63.5kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the ‘N’ value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as

N = 13
4, 6, 7

- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as

N > 30
15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

A modification to the SPT is where the same driving system is used with a solid 60° tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as ‘N_c’ on the borehole logs, together with the number of blows per 150mm penetration.

LOGS

The borehole or test pit logs presented herein are an interpretation of the subsurface conditions, and their reliability will depend to some extent on the frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will enable the most reliable assessment, but is not always practicable or possible to justify on economic grounds. In any case, the boreholes or test pits represent only a very small sample of the total subsurface conditions.

The terms and symbols used in preparation of the logs are defined in the following pages.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than ‘straight line’ variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

Where groundwater levels are measured in boreholes, there are several potential problems:

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it is left open.
- A localised perched water table may lead to an erroneous indication of the true water table.
- Water table levels will vary from time to time with seasons or recent weather changes and may not be the same at the time of construction.
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must be washed out of the hole or 'reverted' chemically if reliable water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after the groundwater level has stabilised at intervals ranging from several days to perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from perched water tables or surface water.

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (eg. bricks, steel, etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably assess the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse environmental characteristics or behaviour. If the volume and nature of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classification and rock strengths indicated on the environmental logs unless noted in the report.

SYMBOL LEGENDS

SOIL



FILL



TOPSOIL



CLAY (CL, CI, CH)



SILT (ML, MH)



SAND (SP, SW)



GRAVEL (GP, GW)



SANDY CLAY (CL, CI, CH)



SILTY CLAY (CL, CI, CH)



CLAYEY SAND (SC)



SILTY SAND (SM)



GRAVELLY CLAY (CL, CI, CH)



CLAYEY GRAVEL (GC)



SANDY SILT (ML, MH)



PEAT AND HIGHLY ORGANIC SOILS (Pt)

ROCK



CONGLOMERATE



SANDSTONE



SHALE/MUDSTONE



SILTSTONE



CLAYSTONE



COAL



LAMINITE



LIMESTONE



PHYLLITE, SCHIST



TUFF



GRANITE, GABBRO



DOLERITE, DIORITE



BASALT, ANDESITE



QUARTZITE

OTHER MATERIALS



BRICKS OR PAVERS



CONCRETE



ASPHALTIC CONCRETE

CLASSIFICATION OF COARSE AND FINE GRAINED SOILS

Major Divisions		Group Symbol	Typical Names	Field Classification of Sand and Gravel	Laboratory Classification	
Coarse grained soil (more than 60% of soil excluding oversize fraction is greater than 0.075mm)	GRAVEL (more than half of coarse fraction is larger than 2.36mm)	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 4$ $1 < C_c < 3$
		GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		GM	Gravel-silt mixtures and gravel-sand-silt mixtures	‘Dirty’ materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	Fines behave as silt
		GC	Gravel-clay mixtures and gravel-sand-clay mixtures	‘Dirty’ materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	Fines behave as clay
	SAND (more than half of coarse fraction is smaller than 2.36mm)	SW	Sand and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 6$ $1 < C_c < 3$
		SP	Sand and gravel-sand mixtures, little or no fines	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		SM	Sand-silt mixtures	‘Dirty’ materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	N/A
		SC	Sand-clay mixtures	‘Dirty’ materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	

Laboratory Classification Criteria

A well graded coarse grained soil is one for which the coefficient of uniformity $C_u > 4$ and the coefficient of curvature $1 < C_c < 3$. Otherwise, the soil is poorly graded. These coefficients are given by:

$$C_u = \frac{D_{60}}{D_{10}} \quad \text{and} \quad C_c = \frac{(D_{30})^2}{D_{10} D_{60}}$$

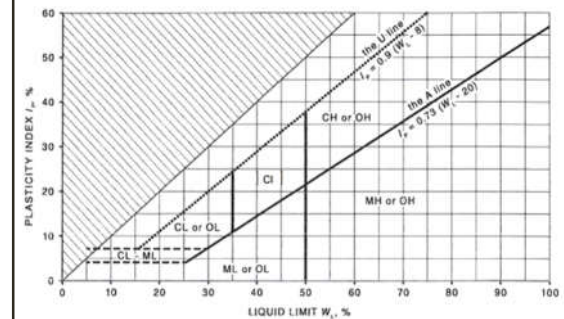
Where D_{10} , D_{30} and D_{60} are those grain sizes for which 10%, 30% and 60% of the soil grains, respectively, are smaller.

NOTES:

- For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash; for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.
- Where the grading is determined from laboratory tests, it is defined by coefficients of curvature (C_c) and uniformity (C_u) derived from the particle size distribution curve.
- Clay soils with liquid limits $> 35\%$ and $\leq 50\%$ may be classified as being of medium plasticity.
- The U line on the Modified Casagrande Chart is an approximate upper bound for most natural soils.

Major Divisions		Group Symbol	Typical Names	Field Classification of Silt and Clay			Laboratory Classification
				Dry Strength	Dilatancy	Toughness	% < 0.075mm
fine grained soils (more than 35% of soil excluding oversize fraction is less than 0.075mm)	SILT and CLAY (low to medium plasticity)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
		CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
		OL	Organic silt	Low to medium	Slow	Low	Below A line
	SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
		CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
		OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
	Highly organic soil	Pt	Peat, highly organic soil	—	—	—	—

Modified Casagrande Chart for Classifying Silts and Clays according to their Behaviour



LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record	▼	Standing water level. Time delay following completion of drilling/excavation may be shown.
	C	Extent of borehole/test pit collapse shortly after drilling/excavation.
	▶	Groundwater seepage into borehole or test pit noted during drilling or excavation.
Samples	ES	Sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos analysis.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
	PFAS	Soil sample taken over depth indicated, for analysis of Per- and Polyfluoroalkyl Substances.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'Refusal' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	N _c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60° solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25 PID = 100	Vane shear reading in kPa of undrained shear strength. Photoionisation detector reading in ppm (soil sample headspace test).
Moisture Condition (Fine Grained Soils) (Coarse Grained Soils)	w > PL	Moisture content estimated to be greater than plastic limit.
	w ≈ PL	Moisture content estimated to be approximately equal to plastic limit.
	w < PL	Moisture content estimated to be less than plastic limit.
	w ≈ LL	Moisture content estimated to be near liquid limit.
	w > LL	Moisture content estimated to be wet of liquid limit.
	D	DRY – runs freely through fingers.
	M	MOIST – does not run freely but no free water visible on soil surface.
	W	WET – free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS	VERY SOFT – unconfined compressive strength ≤ 25kPa.
	S	SOFT – unconfined compressive strength > 25kPa and ≤ 50kPa.
	F	FIRM – unconfined compressive strength > 50kPa and ≤ 100kPa.
	St	STIFF – unconfined compressive strength > 100kPa and ≤ 200kPa.
	VSt	VERY STIFF – unconfined compressive strength > 200kPa and ≤ 400kPa.
	Hd	HARD – unconfined compressive strength > 400kPa.
	Fr	FRIABLE – strength not attainable, soil crumbles.
	()	Bracketed symbol indicates estimated consistency based on tactile examination or other assessment.
Density Index/ Relative Density (Cohesionless Soils)	VL	VERY LOOSE
	L	LOOSE
	MD	MEDIUM DENSE
	D	DENSE
	VD	VERY DENSE
	()	Bracketed symbol indicates estimated density based on ease of drilling or other assessment.



Log Column	Symbol	Definition
Hand Penetrometer Readings	300 250	Measures reading in kPa of unconfined compressive strength. Numbers indicate individual test results on representative undisturbed material unless noted otherwise.
Remarks	'V' bit 'TC' bit T_{60} Soil Origin	Hardened steel 'V' shaped bit. Twin pronged tungsten carbide bit. Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers. The geological origin of the soil can generally be described as: RESIDUAL – soil formed directly from insitu weathering of the underlying rock. No visible structure or fabric of the parent rock. EXTREMELY WEATHERED – soil formed directly from insitu weathering of the underlying rock. Material is of soil strength but retains the structure and/or fabric of the parent rock. ALLUVIAL – soil deposited by creeks and rivers. ESTUARINE – soil deposited in coastal estuaries, including sediments caused by inflowing creeks and rivers, and tidal currents. MARINE – soil deposited in a marine environment. AEOLIAN – soil carried and deposited by wind. COLLUVIAL – soil and rock debris transported downslope by gravity, with or without the assistance of flowing water. Colluvium is usually a thick deposit formed from a landslide. The description 'slopewash' is used for thinner surficial deposits. LITTORAL – beach deposited soil.

Classification of Material Weathering

Term		Abbreviation		Definition
Residual Soil		RS		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely Weathered		XW		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
Highly Weathered	Distinctly Weathered (Note 1)	HW	DW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately Weathered		MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly Weathered		SW		Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh		FR		Rock shows no sign of decomposition of individual minerals or colour changes.

NOTE 1: The term 'Distinctly Weathered' is used where it is not practicable to distinguish between 'Highly Weathered' and 'Moderately Weathered' rock. 'Distinctly Weathered' is defined as follows: 'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'. There is some change in rock strength.

Rock Material Strength Classification

Term	Abbreviation	Uniaxial Compressive Strength (MPa)	Guide to Strength	
			Point Load Strength Index $Is_{(50)}$ (MPa)	Field Assessment
Very Low Strength	VL	0.6 to 2	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.
Low Strength	L	2 to 6	0.1 to 0.3	Easily scored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium Strength	M	6 to 20	0.3 to 1	Scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High Strength	H	20 to 60	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High Strength	VH	60 to 200	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High Strength	EH	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.



Appendix H: Laboratory Reports & COC Documents

CERTIFICATE OF ANALYSIS 371160

Client Details

Client	JK Environments
Attention	Vittal Boggaram
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E37264B St Leonards</u>
Number of Samples	7 Soil, 1 Water
Date samples received	23/01/2025
Date completed instructions received	23/01/2025

Analysis Details

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

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

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

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

Report Details

Date results requested by	31/01/2025
Date of Issue	31/01/2025
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Amanda Lee
 Authorised by Asbestos Approved Signatory: Lucy Zhu

Authorised By

Nancy Zhang, Laboratory Manager

Results Approved By

Diego Bigolin, Inorganics Supervisor
 Dragana Tomas, Senior Chemist
 Giovanni Agosti, Group Technical Manager
 Jack Wallis, Senior Chemist
 Lucy Zhu, Asbestos Supervisor
 Sean McAlary, Senior Chemist
 Timothy Toll, Senior Chemist

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		371160-1	371160-5	371160-6	371160-7
Your Reference	UNITS	BH1	SDUP1	TS-1	TB-1
Depth		0.15-0.3	-	-	-
Date Sampled		22/01/2025	22/01/2025	22/01/2025	22/01/2025
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	24/01/2025	24/01/2025	24/01/2025	24/01/2025
Date analysed	-	28/01/2025	28/01/2025	28/01/2025	28/01/2025
TRH C ₆ - C ₉	mg/kg	<25	<25	[NA]	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	[NA]	<25
vTRH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	[NA]	<25
Benzene	mg/kg	<0.2	<0.2	101%	<0.2
Toluene	mg/kg	<0.5	<0.5	100%	<0.5
Ethylbenzene	mg/kg	<1	<1	100%	<1
m+p-xylene	mg/kg	<2	<2	100%	<2
o-Xylene	mg/kg	<1	<1	100%	<1
Naphthalene	mg/kg	<1	<1	[NA]	<1
Total +ve Xylenes	mg/kg	<1	<1	[NA]	<1
Surrogate aaa-Trifluorotoluene	%	86	87	101	94

svTRH (C10-C40) in Soil				
Our Reference		371160-1	371160-5	371160-7
Your Reference	UNITS	BH1	SDUP1	TB-1
Depth		0.15-0.3	-	-
Date Sampled		22/01/2025	22/01/2025	22/01/2025
Type of sample		Soil	Soil	Soil
Date extracted	-	24/01/2025	24/01/2025	24/01/2025
Date analysed	-	25/01/2025	25/01/2025	25/01/2025
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50
TRH >C ₁₀ -C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	110	91	93

PAHs in Soil				
Our Reference		371160-1	371160-5	371160-7
Your Reference	UNITS	BH1	SDUP1	TB-1
Depth		0.15-0.3	-	-
Date Sampled		22/01/2025	22/01/2025	22/01/2025
Type of sample		Soil	Soil	Soil
Date extracted	-	24/01/2025	24/01/2025	24/01/2025
Date analysed	-	24/01/2025	24/01/2025	24/01/2025
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate <i>p</i> -Terphenyl-d14	%	108	105	110

Organochlorine Pesticides in soil			
Our Reference		371160-1	371160-5
Your Reference	UNITS	BH1	SDUP1
Depth		0.15-0.3	-
Date Sampled		22/01/2025	22/01/2025
Type of sample		Soil	Soil
Date extracted	-	24/01/2025	24/01/2025
Date analysed	-	24/01/2025	24/01/2025
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	87	78

Organophosphorus Pesticides in Soil			
Our Reference		371160-1	371160-5
Your Reference	UNITS	BH1	SDUP1
Depth		0.15-0.3	-
Date Sampled		22/01/2025	22/01/2025
Type of sample		Soil	Soil
Date extracted	-	24/01/2025	24/01/2025
Date analysed	-	24/01/2025	24/01/2025
Dichlorvos	mg/kg	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	87	78

PCBs in Soil			
Our Reference		371160-1	371160-5
Your Reference	UNITS	BH1	SDUP1
Depth		0.15-0.3	-
Date Sampled		22/01/2025	22/01/2025
Type of sample		Soil	Soil
Date extracted	-	24/01/2025	24/01/2025
Date analysed	-	24/01/2025	24/01/2025
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	90	85

Misc Soil - Inorg			
Our Reference		371160-1	371160-5
Your Reference	UNITS	BH1	SDUP1
Depth		0.15-0.3	-
Date Sampled		22/01/2025	22/01/2025
Type of sample		Soil	Soil
Date prepared	-	24/01/2025	24/01/2025
Date analysed	-	24/01/2025	24/01/2025
Total Phenolics (as Phenol)	mg/kg	<5	<5

Acid Extractable metals in soil				
Our Reference		371160-1	371160-5	371160-7
Your Reference	UNITS	BH1	SDUP1	TB-1
Depth		0.15-0.3	-	-
Date Sampled		22/01/2025	22/01/2025	22/01/2025
Type of sample		Soil	Soil	Soil
Date prepared	-	24/01/2025	24/01/2025	24/01/2025
Date analysed	-	24/01/2025	24/01/2025	24/01/2025
Arsenic	mg/kg	10	11	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	16	18	<1
Copper	mg/kg	24	29	<1
Lead	mg/kg	24	26	<1
Mercury	mg/kg	<0.1	0.1	<0.1
Nickel	mg/kg	3	4	<1
Zinc	mg/kg	32	35	<1

Moisture				
Our Reference		371160-1	371160-5	371160-7
Your Reference	UNITS	BH1	SDUP1	TB-1
Depth		0.15-0.3	-	-
Date Sampled		22/01/2025	22/01/2025	22/01/2025
Type of sample		Soil	Soil	Soil
Date prepared	-	24/01/2025	24/01/2025	24/01/2025
Date analysed	-	28/01/2025	28/01/2025	28/01/2025
Moisture	%	22	22	<0.1

Asbestos ID - soils NEPM - ASB-001		
Our Reference		371160-1
Your Reference	UNITS	BH1
Depth		0.15-0.3
Date Sampled		22/01/2025
Type of sample		Soil
Date analysed	-	28/01/2025
Sample mass tested	g	602.11
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	—
FA and AF Estimation*	g	—
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001
Asbestos comments	-	Nil

PFAS in Soils Extended		
Our Reference		371160-1
Your Reference	UNITS	BH1
Depth		0.15-0.3
Date Sampled		22/01/2025
Type of sample		Soil
Date prepared	-	24/01/2025
Date analysed	-	24/01/2025
Perfluorobutanesulfonic acid	µg/kg	<0.1
Perfluoropentanesulfonic acid	µg/kg	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1
Perfluoroheptanesulfonic acid	µg/kg	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	<0.1
Perfluorodecanesulfonic acid	µg/kg	<0.2
Perfluorobutanoic acid	µg/kg	<0.2
Perfluoropentanoic acid	µg/kg	<0.2
Perfluorohexanoic acid	µg/kg	<0.1
Perfluoroheptanoic acid	µg/kg	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1
Perfluorononanoic acid	µg/kg	<0.1
Perfluorodecanoic acid	µg/kg	<0.5
Perfluoroundecanoic acid	µg/kg	<0.5
Perfluorododecanoic acid	µg/kg	<0.5
Perfluorotridecanoic acid	µg/kg	<0.5
Perfluorotetradecanoic acid	µg/kg	<5
4:2 FTS	µg/kg	<0.1
6:2 FTS	µg/kg	<0.1
8:2 FTS	µg/kg	<0.2
10:2 FTS	µg/kg	<0.2
Perfluorooctane sulfonamide	µg/kg	<1
N-Methyl perfluorooctane sulfonamide	µg/kg	<1
N-Ethyl perfluorooctanesulfonamide	µg/kg	<1
N-Me perfluorooctanesulfonamid ethanol	µg/kg	<1
N-Et perfluorooctanesulfonamid ethanol	µg/kg	<5
MePerfluorooctanesulf- amid oacetic acid	µg/kg	<0.2
EtPerfluorooctanesulf amid oacetic acid	µg/kg	<0.2
Surrogate ¹³ C ₈ PFOS	%	96
Surrogate ¹³ C ₂ PFOA	%	106
Extracted ISTD ¹³ C ₃ PFBS	%	90
Extracted ISTD ¹⁸ O ₂ PFHxS	%	75
Extracted ISTD ¹³ C ₄ PFOS	%	82

PFAS in Soils Extended		
Our Reference		371160-1
Your Reference	UNITS	BH1
Depth		0.15-0.3
Date Sampled		22/01/2025
Type of sample		Soil
Extracted ISTD ¹³ C ₄ PFBA	%	84
Extracted ISTD ¹³ C ₃ PFPeA	%	94
Extracted ISTD ¹³ C ₂ PFHxA	%	95
Extracted ISTD ¹³ C ₄ PFHpA	%	79
Extracted ISTD ¹³ C ₄ PFOA	%	77
Extracted ISTD ¹³ C ₅ PFNA	%	78
Extracted ISTD ¹³ C ₂ PFDA	%	83
Extracted ISTD ¹³ C ₂ PFUnDA	%	82
Extracted ISTD ¹³ C ₂ PFDoDA	%	86
Extracted ISTD ¹³ C ₂ PFTeDA	%	81
Extracted ISTD ¹³ C ₂ 4:2FTS	%	87
Extracted ISTD ¹³ C ₂ 6:2FTS	%	85
Extracted ISTD ¹³ C ₂ 8:2FTS	%	89
Extracted ISTD ¹³ C ₈ FOSA	%	94
Extracted ISTD d ₃ N MeFOSA	%	86
Extracted ISTD d ₅ N EtFOSA	%	93
Extracted ISTD d ₇ N MeFOSE	%	79
Extracted ISTD d ₉ N EtFOSE	%	87
Extracted ISTD d ₃ N MeFOSAA	%	60
Extracted ISTD d ₅ N EtFOSAA	%	71
Total Positive PFHxS & PFOS	µg/kg	<0.1
Total Positive PFOS & PFOA	µg/kg	<0.1
Total Positive PFAS	µg/kg	<0.1

PFAS in Soils Short		
Our Reference		371160-7
Your Reference	UNITS	TB-1
Depth		-
Date Sampled		22/01/2025
Type of sample		Soil
Date prepared	-	24/01/2025
Date analysed	-	24/01/2025
Perfluorobutanesulfonic acid	µg/kg	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1
6:2 FTS	µg/kg	<0.1
8:2 FTS	µg/kg	<0.2
Surrogate ¹³ C ₈ PFOS	%	95
Surrogate ¹³ C ₂ PFOA	%	104
Extracted ISTD ¹³ C ₃ PFBS	%	97
Extracted ISTD ¹⁸ O ₂ PFHxS	%	86
Extracted ISTD ¹³ C ₄ PFOS	%	89
Extracted ISTD ¹³ C ₄ PFOA	%	86
Extracted ISTD ¹³ C ₂ 6:2FTS	%	95
Extracted ISTD ¹³ C ₂ 8:2FTS	%	102
Total Positive PFHxS & PFOS	µg/kg	<0.1
Total Positive PFOS & PFOA	µg/kg	<0.1
Total Positive PFAS	µg/kg	<0.1

vTRH(C6-C10)/BTEXN in Water		
Our Reference		371160-8
Your Reference	UNITS	FR-SPT-1
Depth		-
Date Sampled		22/01/2025
Type of sample		Water
Date extracted	-	29/01/2025
Date analysed	-	30/01/2025
TRH C ₆ - C ₉	µg/L	44
TRH C ₆ - C ₁₀	µg/L	46
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	46
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	115
Surrogate Toluene-d8	%	105
Surrogate 4-Bromofluorobenzene	%	96

svTRH (C10-C40) in Water		
Our Reference		371160-8
Your Reference	UNITS	FR-SPT-1
Depth		-
Date Sampled		22/01/2025
Type of sample		Water
Date extracted	-	28/01/2025
Date analysed	-	29/01/2025
TRH C ₁₀ - C ₁₄	µg/L	<50
TRH C ₁₅ - C ₂₈	µg/L	<100
TRH C ₂₉ - C ₃₆	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C ₁₀ - C ₁₆	µg/L	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50
TRH >C ₁₆ - C ₃₄	µg/L	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	82

PAHs in Water		
Our Reference		371160-8
Your Reference	UNITS	FR-SPT-1
Depth		-
Date Sampled		22/01/2025
Type of sample		Water
Date extracted	-	28/01/2025
Date analysed	-	29/01/2025
Naphthalene	µg/L	<0.1
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	77

Metals in Waters - Acid extractable		
Our Reference		371160-8
Your Reference	UNITS	FR-SPT-1
Depth		-
Date Sampled		22/01/2025
Type of sample		Water
Date prepared	-	23/01/2025
Date analysed	-	24/01/2025
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	0.08
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

PFAS in Waters Short		
Our Reference		371160-8
Your Reference	UNITS	FR-SPT-1
Depth		-
Date Sampled		22/01/2025
Type of sample		Water
Date prepared	-	24/01/2025
Date analysed	-	24/01/2025
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate ¹³ C ₈ PFOS	%	99
Surrogate ¹³ C ₂ PFOA	%	104
Extracted ISTD ¹³ C ₃ PFBS	%	95
Extracted ISTD ¹⁸ O ₂ PFHxS	%	93
Extracted ISTD ¹³ C ₄ PFOS	%	92
Extracted ISTD ¹³ C ₄ PFOA	%	84
Extracted ISTD ¹³ C ₂ 6:2FTS	%	95
Extracted ISTD ¹³ C ₂ 8:2FTS	%	100
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-5
Date extracted	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			28/01/2025	1	28/01/2025	28/01/2025		28/01/2025	28/01/2025
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	1	<25	<25	0	105	98
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	1	<25	<25	0	105	98
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	104	96
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	102	94
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	105	98
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	108	101
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	104	97
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	95	1	86	87	1	92	84

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-5
Date extracted	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			25/01/2025	1	25/01/2025	25/01/2025		25/01/2025	25/01/2025
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	1	<50	<50	0	102	108
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	1	<100	<100	0	96	108
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	1	<100	<100	0	86	105
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	1	<50	<50	0	102	108
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	1	<100	<100	0	96	108
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	1	<100	<100	0	86	105
Surrogate o-Terphenyl	%		Org-020	95	1	110	90	20	112	91

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-5
Date extracted	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	76
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	82
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	72
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	82
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	78
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	80
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	86
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	88	70
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	107	1	108	110	2	114	99

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-5
Date extracted	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	80
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	72	74
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	72
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	80
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	90
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	78
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	90
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	74
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	94
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	74
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	91	1	87	85	2	117	83

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-5
Date extracted	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	82
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	74
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	62
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	78
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	78
Fenthion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	60
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	80
Phosalone	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	91	1	87	85	2	117	83

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-5
Date extracted	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	96	60
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	87	1	90	88	2	108	92

QUALITY CONTROL: Misc Soil - Inorg					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	[NT]
Date analysed	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	104	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-5
Date prepared	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Arsenic	mg/kg	4	Metals-020	<4	1	10	9	11	118	98
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	113	101
Chromium	mg/kg	1	Metals-020	<1	1	16	15	6	106	95
Copper	mg/kg	1	Metals-020	<1	1	24	21	13	109	95
Lead	mg/kg	1	Metals-020	<1	1	24	27	12	109	99
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	117	104
Nickel	mg/kg	1	Metals-020	<1	1	3	3	0	111	100
Zinc	mg/kg	1	Metals-020	<1	1	32	32	0	109	87

QUALITY CONTROL: PFAS in Soils Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-1
Date prepared	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			24/01/2025	1	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	106	108
Perfluoropentanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	116	116
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	103	101
Perfluoroheptanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	104	104
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	102	101
Perfluorodecanesulfonic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	112	118
Perfluorobutanoic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	107	108
Perfluoropentanoic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	106	103
Perfluorohexanoic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	107	104
Perfluoroheptanoic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	101	99
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	104	100
Perfluorononanoic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	115	108
Perfluorodecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	108	107
Perfluoroundecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	100	99
Perfluorododecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	106	106
Perfluorotridecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	88	97
Perfluorotetradecanoic acid	µg/kg	5	Org-029	<5	1	<5	<5	0	108	109
4:2 FTS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	103	101
6:2 FTS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	101	99
8:2 FTS	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	100	96
10:2 FTS	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	103	100
Perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	1	<1	<1	0	106	108
N-Methyl perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	1	<1	<1	0	107	105
N-Ethyl perfluorooctanesulfon amide	µg/kg	1	Org-029	<1	1	<1	<1	0	97	96
N-Me perfluorooctanesulfonamid oethanol	µg/kg	1	Org-029	<1	1	<1	<1	0	114	107
N-Et perfluorooctanesulfonamid oethanol	µg/kg	5	Org-029	<5	1	<5	<5	0	93	89
MePerfluorooctanesulf- amid oacetic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	107	111
EtPerfluorooctanesulf amid oacetic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	88	86
Surrogate ¹³ C ₈ PFOS	%		Org-029	99	1	96	99	3	100	99
Surrogate ¹³ C ₂ PFOA	%		Org-029	103	1	106	105	1	102	97

QUALITY CONTROL: PFAS in Soils Extended						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-1
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	94	1	90	85	6	93	80
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	89	1	75	76	1	87	75
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	90	1	82	78	5	90	77
Extracted ISTD ¹³ C ₄ PFBA	%		Org-029	96	1	84	80	5	94	77
Extracted ISTD ¹³ C ₃ PFPeA	%		Org-029	101	1	94	89	5	100	85
Extracted ISTD ¹³ C ₂ PFHxA	%		Org-029	94	1	95	84	12	103	84
Extracted ISTD ¹³ C ₄ PFHpA	%		Org-029	88	1	79	73	8	89	71
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	86	1	77	72	7	87	74
Extracted ISTD ¹³ C ₅ PFNA	%		Org-029	86	1	78	71	9	87	71
Extracted ISTD ¹³ C ₂ PFDA	%		Org-029	89	1	83	76	9	91	73
Extracted ISTD ¹³ C ₂ PFUnDA	%		Org-029	91	1	82	74	10	88	79
Extracted ISTD ¹³ C ₂ PFDoDA	%		Org-029	87	1	86	83	4	95	80
Extracted ISTD ¹³ C ₂ PFTeDA	%		Org-029	87	1	81	77	5	87	75
Extracted ISTD ¹³ C ₂ 4:2FTS	%		Org-029	96	1	87	80	8	93	76
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	99	1	85	81	5	95	79
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	102	1	89	85	5	97	82
Extracted ISTD ¹³ C ₈ FOSA	%		Org-029	103	1	94	90	4	100	89
Extracted ISTD d ₃ N MeFOSA	%		Org-029	94	1	86	84	2	95	83
Extracted ISTD d ₅ N EtFOSA	%		Org-029	101	1	93	90	3	102	90
Extracted ISTD d ₇ N MeFOSE	%		Org-029	92	1	79	78	1	88	80

QUALITY CONTROL: PFAS in Soils Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-1
<i>Extracted ISTD d₉ N EtFOSE</i>	%		Org-029	95	1	87	87	0	96	84
<i>Extracted ISTD d₃ N MeFOSAA</i>	%		Org-029	96	1	60	52	14	93	51
<i>Extracted ISTD d₅ N EtFOSAA</i>	%		Org-029	107	1	71	63	12	103	64

QUALITY CONTROL: PFAS in Soils Short					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			24/01/2025	[NT]	[NT]	[NT]	[NT]	24/01/2025	[NT]
Date analysed	-			24/01/2025	[NT]	[NT]	[NT]	[NT]	24/01/2025	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate ¹³ C ₈ PFOS	%		Org-029	99	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate ¹³ C ₂ PFOA	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	94	[NT]	[NT]	[NT]	[NT]	93	[NT]
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	89	[NT]	[NT]	[NT]	[NT]	87	[NT]
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	90	[NT]	[NT]	[NT]	[NT]	90	[NT]
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	86	[NT]	[NT]	[NT]	[NT]	87	[NT]
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	99	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			29/01/2025	[NT]	[NT]	[NT]	[NT]	29/01/2025	[NT]
Date analysed	-			30/01/2025	[NT]	[NT]	[NT]	[NT]	30/01/2025	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	91	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	90	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	109	[NT]	[NT]	[NT]	[NT]	106	[NT]
Surrogate Toluene-d8	%		Org-023	103	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	95	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			28/01/2025	[NT]	[NT]	[NT]	[NT]	28/01/2025	[NT]
Date analysed	-			29/01/2025	[NT]	[NT]	[NT]	[NT]	29/01/2025	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	130	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	128	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	130	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	128	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	69	[NT]	[NT]	[NT]	[NT]	115	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			28/01/2025	8	28/01/2025	28/01/2025		28/01/2025	[NT]
Date analysed	-			29/01/2025	8	29/01/2025	29/01/2025		29/01/2025	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	86	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	98	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	89	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	91	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	90	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	88	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	86	[NT]
Benzo(b,j,k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	8	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	81	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	8	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	76	8	77	80	4	98	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			23/01/2025	[NT]	[NT]	[NT]	[NT]	23/01/2025	[NT]
Date analysed	-			24/01/2025	[NT]	[NT]	[NT]	[NT]	24/01/2025	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	92	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	93	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	88	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	90	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	88	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	105	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	88	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: PFAS in Waters Short					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	371160-8
Date prepared	-			24/01/2025	[NT]	[NT]	[NT]	[NT]	24/01/2025	24/01/2025
Date analysed	-			24/01/2025	[NT]	[NT]	[NT]	[NT]	24/01/2025	24/01/2025
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	104
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	100	104
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	100
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	107	108
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	96	96
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	101	99
Surrogate ¹³ C ₈ PFOS	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	100	97
Surrogate ¹³ C ₂ PFOA	%		Org-029	104	[NT]	[NT]	[NT]	[NT]	106	107
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	95	95
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	97	87
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	95	93
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	94	87
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	100	93
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	112	[NT]	[NT]	[NT]	[NT]	103	99

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Asbestos-ID in soil: NEPM

This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Vittal Boggaram

Sample Login Details

Your reference	E37264B St Leonards
Envirolab Reference	371160
Date Sample Received	23/01/2025
Date Instructions Received	23/01/2025
Date Results Expected to be Reported	31/01/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	7 Soil, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	6
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

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Jacinta Hurst

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Analysis Underway, details on the following page:



Sample ID	VTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metals in soil	Asbestos ID - soils NEPM - ASB-001	PFAS in Soils Extended	PFAS in Soils Short	VTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters -Acid extractable	PFAS in Waters Short	On Hold
BH1-0.15-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
BH1-0.5-0.9																	✓
BH1-1.8-2.0																	✓
BH1-2.5-2.7																	✓
SDUP1	✓	✓	✓	✓	✓	✓	✓	✓									
TS-1	✓																
TB-1	✓	✓	✓					✓			✓						
FR-SPT-1												✓	✓	✓	✓	✓	

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

SAMPLE AND CHAIN OF CUSTODY FORM

[illegible]

CERTIFICATE OF ANALYSIS 371160-A

Client Details

Client	JK Environments
Attention	Vittal Boggaram
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E37264B St Leonards</u>
Number of Samples	7 Soil, 1 Water
Date samples received	23/01/2025
Date completed instructions received	23/01/2025

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.
 Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	31/01/2025
Date of Issue	30/01/2025
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Diego Bigolin, Inorganics Supervisor
 Giovanni Agosti, Group Technical Manager
 Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

CEC			
Our Reference		371160-A-1	371160-A-3
Your Reference	UNITS	BH1	BH1
Depth		0.15-0.3	1.8-2.0
Date Sampled		22/01/2025	22/01/2025
Type of sample		Soil	Soil
Date prepared	-	28/01/2025	28/01/2025
Date analysed	-	28/01/2025	28/01/2025
Exchangeable Ca	meq/100g	4.5	0.6
Exchangeable K	meq/100g	0.2	0.2
Exchangeable Mg	meq/100g	0.8	0.5
Exchangeable Na	meq/100g	0.2	<0.1
Cation Exchange Capacity	meq/100g	5.8	1.2

Texture and Salinity*					
Our Reference		371160-A-1	371160-A-2	371160-A-3	371160-A-4
Your Reference	UNITS	BH1	BH1	BH1	BH1
Depth		0.15-0.3	0.5-0.9	1.8-2.0	2.5-2.7
Date Sampled		22/01/2025	22/01/2025	22/01/2025	22/01/2025
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	24/01/2025	24/01/2025	24/01/2025	24/01/2025
Date analysed	-	24/01/2025	24/01/2025	24/01/2025	24/01/2025
Electrical Conductivity 1:5 soil:water	µS/cm	140	110	55	77
Texture Value	-	8.0	7.0	9.0	7.0
Texture	-	LIGHT MEDIUM CLAY	MEDIUM CLAY	CLAY LOAM	MEDIUM CLAY
ECe	dS/m	<2	<2	<2	<2
Class	-	NON SALINE	NON SALINE	NON SALINE	NON SALINE

Misc Inorg - Soil					
Our Reference		371160-A-1	371160-A-2	371160-A-3	371160-A-4
Your Reference	UNITS	BH1	BH1	BH1	BH1
Depth		0.15-0.3	0.5-0.9	1.8-2.0	2.5-2.7
Date Sampled		22/01/2025	22/01/2025	22/01/2025	22/01/2025
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	24/01/2025	24/01/2025	24/01/2025	24/01/2025
Date analysed	-	24/01/2025	24/01/2025	24/01/2025	24/01/2025
pH 1:5 soil:water	pH Units	5.7	4.5	4.6	4.7
Chloride, Cl 1:5 soil:water	mg/kg	72	100	21	10
Sulphate, SO4 1:5 soil:water	mg/kg	170	77	61	120
Resistivity in soil*	ohm m	72	92	180	130

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA 22nd ED 2510 and Rayment & Lyons. Resistivity is calculated from Conductivity (non NATA). Resistivity (calculated) may not correlate with results otherwise obtained using Resistivity-Current method, depending on the nature of the soil being analysed.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
INORG-123	Determined using a "Texture by Feel" method.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.

QUALITY CONTROL: CEC					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			28/01/2025	[NT]	[NT]	[NT]	[NT]	28/01/2025	[NT]
Date analysed	-			28/01/2025	[NT]	[NT]	[NT]	[NT]	28/01/2025	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: Texture and Salinity*						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			24/01/2025	2	24/01/2025	24/01/2025		24/01/2025	[NT]
Date analysed	-			24/01/2025	2	24/01/2025	24/01/2025		24/01/2025	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	2	110	110	0	99	[NT]
Texture Value	-		INORG-123	[NT]	2	7.0	7.0	0	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	371160-A-4
Date prepared	-			24/01/2025	2	24/01/2025	24/01/2025		24/01/2025	24/01/2025
Date analysed	-			24/01/2025	2	24/01/2025	24/01/2025		24/01/2025	24/01/2025
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	2	4.5	4.4	2	101	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	2	100	98	2	113	108
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	2	77	71	8	118	#
Resistivity in soil*	ohm m	1	Inorg-002	<1	2	92	92	0	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

MISC_INORG_DRY: # Percent recovery is not applicable due to the high concentration of the analyte/s in the sample/s. However an acceptable recovery was obtained for the LCS.

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Vittal Boggaram

Sample Login Details

Your reference	E37264B St Leonards
Envirolab Reference	371160-A
Date Sample Received	23/01/2025
Date Instructions Received	23/01/2025
Date Results Expected to be Reported	31/01/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	7 Soil, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	6
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolab.com.au	Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Envirolab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	CEC	Texture and Salinity*	Misc Inorg - Soil	On Hold
BH1-0.15-0.3	✓	✓	✓	
BH1-0.5-0.9		✓	✓	
BH1-1.8-2.0	✓	✓	✓	
BH1-2.5-2.7		✓	✓	
SDUP1				✓
TS-1				✓
TB-1				✓
FR-SPT-1				✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

CERTIFICATE OF ANALYSIS 379557

Client Details

Client	JK Environments
Attention	Vittal Boggaram
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E37264B, St Leonards</u>
Number of Samples	28 Soil
Date samples received	02/05/2025
Date completed instructions received	02/05/2025

Analysis Details

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

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

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

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

Report Details

Date results requested by	09/05/2025
Date of Issue	09/05/2025
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Asbestos Approved By

Analysed by Asbestos Approved Analyst: Nyovan Moonean, Amanda Lee

Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Amanda Chui, LC/Air Toxics Supervisor
 Diego Bigolin, Inorganics Supervisor
 Giovanni Agosti, Group Technical Manager
 Josh Williams, Senior R&D Chemist
 Loren Bardwell, Development Chemist
 Lucy Zhu, Asbestos Supervisor
 Timothy Toll, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil

Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025	07/05/2025
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTRH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	96	108	105	111

vTRH(C6-C10)/BTEXN in Soil

Our Reference		379557-18	379557-19	379557-28
Your Reference	UNITS	SDUP2	TB-1	TS-1
Depth		-	-	-
Date Sampled		30/04/2025	30/04/2025	30/04/2025
Type of sample		Soil	Soil	Soil
Date extracted	-	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025
TRH C ₆ - C ₉	mg/kg	<25	<25	[NA]
TRH C ₆ - C ₁₀	mg/kg	<25	<25	[NA]
vTRH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	101%
Toluene	mg/kg	<0.5	<0.5	99%
Ethylbenzene	mg/kg	<1	<1	106%
m+p-xylene	mg/kg	<2	<2	105%
o-Xylene	mg/kg	<1	<1	105%
Naphthalene	mg/kg	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	105	117	102

svTRH (C10-C40) in Soil						
Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025	07/05/2025
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	720	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	600	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	1,300	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ -C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	1,100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	540	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	1,600	<50
Surrogate o-Terphenyl	%	95	93	89	114	76

svTRH (C10-C40) in Soil			
Our Reference		379557-18	379557-19
Your Reference	UNITS	SDUP2	TB-1
Depth		-	-
Date Sampled		30/04/2025	30/04/2025
Type of sample		Soil	Soil
Date extracted	-	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50
TRH >C ₁₀ -C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	93	84

PAHs in Soil						
Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025	07/05/2025
Naphthalene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	2.2	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	0.8	<0.1
Phenanthrene	mg/kg	0.7	<0.1	<0.1	12	<0.1
Anthracene	mg/kg	0.2	<0.1	<0.1	3.9	<0.1
Fluoranthene	mg/kg	1.8	0.2	0.3	21	<0.1
Pyrene	mg/kg	1.7	0.1	0.3	22	<0.1
Benzo(a)anthracene	mg/kg	1.1	0.1	0.2	15	<0.1
Chrysene	mg/kg	0.7	<0.1	0.1	8.3	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	2	0.2	0.3	19	<0.2
Benzo(a)pyrene	mg/kg	1.4	0.1	0.2	15	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.8	<0.1	<0.1	5.7	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	1.6	<0.1
Benzo(g,h,i)perylene	mg/kg	0.8	<0.1	0.1	4.9	<0.1
Total +ve PAH's	mg/kg	11	0.82	1.5	130	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.8	<0.5	<0.5	21	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.8	<0.5	<0.5	21	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.9	<0.5	<0.5	21	<0.5
Surrogate <i>p</i> -Terphenyl-d14	%	80	84	82	81	80

PAHs in Soil			
Our Reference		379557-18	379557-19
Your Reference	UNITS	SDUP2	TB-1
Depth		-	-
Date Sampled		30/04/2025	30/04/2025
Type of sample		Soil	Soil
Date extracted	-	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1
Pyrene	mg/kg	0.2	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.2	<0.2
Benzo(a)pyrene	mg/kg	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	0.88	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate <i>p</i> -Terphenyl-d14	%	86	85

Organochlorine Pesticides in soil						
Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025	07/05/2025
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	79	83	81	80	78

Organochlorine Pesticides in soil		
Our Reference		379557-18
Your Reference	UNITS	SDUP2
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date extracted	-	06/05/2025
Date analysed	-	07/05/2025
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Mirex	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	83

Organophosphorus Pesticides in Soil						
Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025	07/05/2025
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	79	83	81	80	78

Organophosphorus Pesticides in Soil		
Our Reference		379557-18
Your Reference	UNITS	SDUP2
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date extracted	-	06/05/2025
Date analysed	-	07/05/2025
Dichlorvos	mg/kg	<0.1
Mevinphos	mg/kg	<0.1
Phorate	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Disulfoton	mg/kg	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1
Parathion-Methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Fenthion	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Methidathion	mg/kg	<0.1
Fenamiphos	mg/kg	<0.1
Ethion	mg/kg	<0.1
Phosalone	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Coumaphos	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	83

PCBs in Soil						
Our Reference	UNITS	379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference		BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025	07/05/2025
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	78	81	82	79	77

PCBs in Soil		
Our Reference	UNITS	379557-18
Your Reference		SDUP2
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date extracted	-	06/05/2025
Date analysed	-	07/05/2025
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate 2-Fluorobiphenyl	%	83

Misc Soil - Inorg

Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025	07/05/2025
Date analysed	-	08/05/2025	08/05/2025	08/05/2025	08/05/2025	08/05/2025
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Misc Soil - Inorg

Our Reference		379557-18
Your Reference	UNITS	SDUP2
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date prepared	-	07/05/2025
Date analysed	-	08/05/2025
Total Phenolics (as Phenol)	mg/kg	<5

Acid Extractable metals in soil

Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Arsenic	mg/kg	7	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	65	10	15	15	7
Copper	mg/kg	42	24	34	86	24
Lead	mg/kg	200	46	46	17	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	7	5	9	6
Zinc	mg/kg	130	88	61	31	37

Acid Extractable metals in soil

Our Reference		379557-18	379557-19	379557-29
Your Reference	UNITS	SDUP2	TB-1	BH4 - [TRIPLICATE]
Depth		-	-	0-0.1
Date Sampled		30/04/2025	30/04/2025	30/04/2025
Type of sample		Soil	Soil	Soil
Date prepared	-	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	06/05/2025	06/05/2025	06/05/2025
Arsenic	mg/kg	5	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	12	3	13
Copper	mg/kg	28	1	43
Lead	mg/kg	59	3	250
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	8	<1	10
Zinc	mg/kg	88	4	170

Moisture						
Our Reference	UNITS	379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference		BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025	07/05/2025
Moisture	%	14	30	19	20	12

Moisture			
Our Reference	UNITS	379557-18	379557-19
Your Reference		SDUP2	TB-1
Depth		-	-
Date Sampled		30/04/2025	30/04/2025
Type of sample		Soil	Soil
Date prepared	-	06/05/2025	06/05/2025
Date analysed	-	07/05/2025	07/05/2025
Moisture	%	27	0.2

PFAS in Soils Extended						
Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Date analysed	-	06/05/2025	06/05/2025	06/05/2025	06/05/2025	06/05/2025
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.2	<0.1	0.1	<0.1	<0.1
Perfluoroheptanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	5.8	2.6	12	0.3	<0.1
Perfluorodecanesulfonic acid	µg/kg	0.2	<0.2	2.2	<0.2	<0.2
Perfluorobutanoic acid	µg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Perfluoropentanoic acid	µg/kg	1	0.3	0.4	<0.2	<0.2
Perfluorohexanoic acid	µg/kg	0.7	0.1	0.3	<0.1	<0.1
Perfluoroheptanoic acid	µg/kg	0.3	<0.1	0.2	<0.1	<0.1
Perfluorooctanoic acid PFOA	µg/kg	0.8	0.2	0.8	<0.1	<0.1
Perfluorononanoic acid	µg/kg	0.6	<0.1	0.3	<0.1	<0.1
Perfluorodecanoic acid	µg/kg	2	0.6	0.9	<0.5	<0.5
Perfluoroundecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorododecanoic acid	µg/kg	0.9	<0.5	<0.5	<0.5	<0.5
Perfluorotridecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorotetradecanoic acid	µg/kg	<5	<5	<5	<5	<5
4:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
10:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorooctane sulfonamide	µg/kg	<1	<1	<1	<1	<1
N-Methyl perfluorooctane sulfonamide	µg/kg	<1	<1	<1	<1	<1
N-Ethyl perfluorooctanesulfonamide	µg/kg	<1	<1	<1	<1	<1
N-Me perfluorooctanesulfonamid oethanol	µg/kg	<1	<1	<1	<1	<1
N-Et perfluorooctanesulfonamid oethanol	µg/kg	<5	<5	<5	<5	<5
MePerfluorooctanesulf- amid oacetic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EtPerfluorooctanesulf amid oacetic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate ¹³ C ₈ PFOS	%	103	107	105	98	102
Surrogate ¹³ C ₂ PFOA	%	98	101	102	102	101
Extracted ISTD ¹³ C ₃ PFBS	%	92	93	96	91	94
Extracted ISTD ¹⁸ O ₂ PFHxS	%	98	90	90	90	97
Extracted ISTD ¹³ C ₄ PFOS	%	93	86	89	92	96

PFAS in Soils Extended						
Our Reference		379557-1	379557-6	379557-10	379557-13	379557-17
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.13-0.2	0.4-0.5
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Extracted ISTD ¹³ C ₄ PFBA	%	100	90	93	90	95
Extracted ISTD ¹³ C ₃ PFPeA	%	99	91	93	94	100
Extracted ISTD ¹³ C ₂ PFHxA	%	98	88	90	99	96
Extracted ISTD ¹³ C ₄ PFHpA	%	97	92	95	93	99
Extracted ISTD ¹³ C ₄ PFOA	%	104	94	95	96	100
Extracted ISTD ¹³ C ₅ PFNA	%	102	92	89	92	102
Extracted ISTD ¹³ C ₂ PFDA	%	102	91	83	102	109
Extracted ISTD ¹³ C ₂ PFUnDA	%	105	102	63	104	112
Extracted ISTD ¹³ C ₂ PFDoDA	%	109	110	75	113	124
Extracted ISTD ¹³ C ₂ PFTeDA	%	128	106	98	113	126
Extracted ISTD ¹³ C ₂ 4:2FTS	%	114	116	116	120	103
Extracted ISTD ¹³ C ₂ 6:2FTS	%	146	151	155	180	125
Extracted ISTD ¹³ C ₂ 8:2FTS	%	192	174	117	#	137
Extracted ISTD ¹³ C ₈ FOSA	%	98	92	74	86	103
Extracted ISTD d ₃ N MeFOSA	%	95	91	74	82	97
Extracted ISTD d ₅ N EtFOSA	%	93	88	78	78	100
Extracted ISTD d ₇ N MeFOSE	%	101	95	86	75	103
Extracted ISTD d ₉ N EtFOSE	%	92	98	87	73	99
Extracted ISTD d ₃ N MeFOSAA	%	194	176	124	#	156
Extracted ISTD d ₅ N EtFOSAA	%	#	168	83	#	138
Total Positive PFHxS & PFOS	µg/kg	6.0	2.6	12	0.3	<0.1
Total Positive PFOS & PFOA	µg/kg	6.7	2.8	13	0.3	<0.1
Total Positive PFAS	µg/kg	13	3.8	17	0.3	<0.1

Asbestos ID - soils NEPM - ASB-001

Our Reference		379557-1	379557-6	379557-10	379557-14	379557-16
Your Reference	UNITS	BH4	BH5	BH6	BH7	BH8
Depth		0-0.1	0-0.1	0.3-0.5	0.2-0.4	0.15-0.4
Date Sampled		30/04/2025	30/04/2025	30/04/2025	02/05/2025	02/05/2025
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	08/05/2025	08/05/2025	08/05/2025	08/05/2025	08/05/2025
Sample mass tested	g	629.44	632.29	220.46	463.94	653.18
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—	—	—	—
FA and AF Estimation*	g	—	—	—	—	—
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

PFAS in Soils Short		
Our Reference		379557-18
Your Reference	UNITS	SDUP2
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date prepared	-	06/05/2025
Date analysed	-	06/05/2025
Perfluorobutanesulfonic acid	µg/kg	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	2.1
Perfluorooctanoic acid PFOA	µg/kg	0.2
6:2 FTS	µg/kg	<0.1
8:2 FTS	µg/kg	<0.2
Surrogate ¹³ C ₈ PFOS	%	102
Surrogate ¹³ C ₂ PFOA	%	102
Extracted ISTD ¹³ C ₃ PFBS	%	93
Extracted ISTD ¹⁸ O ₂ PFHxS	%	93
Extracted ISTD ¹³ C ₄ PFOS	%	89
Extracted ISTD ¹³ C ₄ PFOA	%	93
Extracted ISTD ¹³ C ₂ 6:2FTS	%	159
Extracted ISTD ¹³ C ₂ 8:2FTS	%	184
Total Positive PFHxS & PFOS	µg/kg	2.1
Total Positive PFOS & PFOA	µg/kg	2.3
Total Positive PFAS	µg/kg	2.3

Misc Inorg - Soil					
Our Reference		379557-21	379557-23	379557-25	379557-27
Your Reference	UNITS	BH4	BH4	BH4	BH4
Depth		0-0.1	0.7-1	1.8-2	4.5-4.6
Date Sampled		30/04/2025	30/04/2025	30/04/2025	30/04/2025
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	05/05/2025	05/05/2025	05/05/2025	05/05/2025
Date analysed	-	05/05/2025	05/05/2025	05/05/2025	05/05/2025
pH 1:5 soil:water	pH Units	8.2	5.8	6.9	5.6
Electrical Conductivity 1:5 soil:water	µS/cm	200	67	43	42
Chloride, Cl 1:5 soil:water	mg/kg	93	24	<10	<10
Sulphate, SO4 1:5 soil:water	mg/kg	46	48	56	58
Resistivity in soil*	ohm m	49	150	230	240

Texture and Salinity*					
Our Reference		379557-21	379557-23	379557-25	379557-27
Your Reference	UNITS	BH4	BH4	BH4	BH4
Depth		0-0.1	0.7-1	1.8-2	4.5-4.6
Date Sampled		30/04/2025	30/04/2025	30/04/2025	30/04/2025
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025
Date analysed	-	07/05/2025	07/05/2025	07/05/2025	07/05/2025
Electrical Conductivity 1:5 soil:water	µS/cm	200	67	42	42
Texture Value	-	9.0	9.0	8.0	8.0
Texture	-	CLAY LOAM	CLAY LOAM	LIGHT MEDIUM CLAY	LIGHT MEDIUM CLAY
ECe	dS/m	<2	<2	<2	<2
Class	-	NON SALINE	NON SALINE	NON SALINE	NON SALINE

CEC		
Our Reference		379557-21
Your Reference	UNITS	BH4
Depth		0-0.1
Date Sampled		30/04/2025
Type of sample		Soil
Date prepared	-	09/05/2025
Date analysed	-	09/05/2025
Exchangeable Ca	meq/100g	16
Exchangeable K	meq/100g	0.2
Exchangeable Mg	meq/100g	0.8
Exchangeable Na	meq/100g	<0.1
Cation Exchange Capacity	meq/100g	17

vTRH(C6-C10)/BTEXN in Water		
Our Reference		379557-20
Your Reference	UNITS	FR-HA-1
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date extracted	-	06/05/2025
Date analysed	-	07/05/2025
TRH C ₆ - C ₉	µg/L	68
TRH C ₆ - C ₁₀	µg/L	72
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	72
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	104
Surrogate Toluene-d8	%	99
Surrogate 4-Bromofluorobenzene	%	100

svTRH (C10-C40) in Water		
Our Reference		379557-20
Your Reference	UNITS	FR-HA-1
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date extracted	-	06/05/2025
Date analysed	-	06/05/2025
TRH C ₁₀ - C ₁₄	µg/L	<50
TRH C ₁₅ - C ₂₈	µg/L	<100
TRH C ₂₉ - C ₃₆	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C ₁₀ - C ₁₆	µg/L	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50
TRH >C ₁₆ - C ₃₄	µg/L	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	103

PAHs in Water		
Our Reference		379557-20
Your Reference	UNITS	FR-HA-1
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date extracted	-	06/05/2025
Date analysed	-	07/05/2025
Naphthalene	µg/L	<0.1
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	105

Metals in Waters - Acid extractable		
Our Reference		379557-20
Your Reference	UNITS	FR-HA-1
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date prepared	-	06/05/2025
Date analysed	-	06/05/2025
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	1
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	0.2

PFAS in Waters Short		
Our Reference		379557-20
Your Reference	UNITS	FR-HA-1
Depth		-
Date Sampled		30/04/2025
Type of sample		Soil
Date prepared	-	05/05/2025
Date analysed	-	05/05/2025
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate ¹³ C ₈ PFOS	%	112
Surrogate ¹³ C ₂ PFOA	%	102
Extracted ISTD ¹³ C ₃ PFBS	%	84
Extracted ISTD ¹⁸ O ₂ PFHxS	%	131
Extracted ISTD ¹³ C ₄ PFOS	%	113
Extracted ISTD ¹³ C ₄ PFOA	%	124
Extracted ISTD ¹³ C ₂ 6:2FTS	%	103
Extracted ISTD ¹³ C ₂ 8:2FTS	%	111
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "---" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-001	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA 22nd ED 2510 and Rayment & Lyons. Resistivity is calculated from Conductivity (non NATA). Resistivity (calculated) may not correlate with results otherwise obtained using Resistivity-Current method, depending on the nature of the soil being analysed.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.

Method ID	Methodology Summary
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
INORG-123	Determined using a "Texture by Feel" method.
Metals-020	Determination of various metals by ICP-AES. Total Phosphate determined stoichiometrically from Phosphorus (assumed to be present as Phosphate). Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Date analysed	-			07/05/2025	1	07/05/2025	07/05/2025		07/05/2025	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	1	<25	<25	0	106	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	1	<25	<25	0	106	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	105	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	108	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	100	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	108	[NT]
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	109	[NT]
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	112	1	103	110	7	111	[NT]

Client Reference: E37264B, St Leonards

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Date analysed	-			06/05/2025	1	07/05/2025	07/05/2025		06/05/2025	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	1	<50	<50	0	113	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	1	<100	<100	0	99	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	1	<100	<100	0	86	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	1	<50	<50	0	113	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	1	<100	110	10	99	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	1	<100	<100	0	86	[NT]
Surrogate o-Terphenyl	%		Org-020	78	1	95	88	8	91	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Date analysed	-			07/05/2025	1	07/05/2025	07/05/2025		07/05/2025	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.2	67	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	0.7	0.9	25	96	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.3	40	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	1.8	2.4	29	94	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	1.7	2.3	30	92	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	1.1	1.5	31	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	0.7	1	35	64	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	2	2.6	26	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	1.4	1.9	30	94	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.8	1.0	22	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	0.8	1.1	32	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	85	1	80	81	1	90	[NT]

Client Reference: E37264B, St Leonards

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Date analysed	-			07/05/2025	1	07/05/2025	07/05/2025		07/05/2025	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	90	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	86	1	79	77	3	89	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Date analysed	-			07/05/2025	1	07/05/2025	07/05/2025		07/05/2025	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	126	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	130	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	138	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	[NT]
Fenthion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	[NT]
Phosalone	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	86	1	79	77	3	89	[NT]

Client Reference: E37264B, St Leonards

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Date analysed	-			07/05/2025	1	07/05/2025	07/05/2025		07/05/2025	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	92	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	85	1	78	78	0	86	[NT]

Client Reference: E37264B, St Leonards

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	379557-6
Date prepared	-			07/05/2025	1	07/05/2025	07/05/2025		07/05/2025	07/05/2025
Date analysed	-			08/05/2025	1	08/05/2025	08/05/2025		08/05/2025	08/05/2025
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	110	95

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Date analysed	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Arsenic	mg/kg	4	Metals-020	<4	1	7	8	13	114	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	106	[NT]
Chromium	mg/kg	1	Metals-020	<1	1	65	12	138	110	[NT]
Copper	mg/kg	1	Metals-020	<1	1	42	49	15	118	[NT]
Lead	mg/kg	1	Metals-020	<1	1	200	220	10	108	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	100	[NT]
Nickel	mg/kg	1	Metals-020	<1	1	8	8	0	108	[NT]
Zinc	mg/kg	1	Metals-020	<1	1	130	140	7	112	[NT]

QUALITY CONTROL: PFAS in Soils Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Date analysed	-			06/05/2025	1	06/05/2025	06/05/2025		06/05/2025	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	93	[NT]
Perfluoropentanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	101	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	1	0.2	0.1	67	99	[NT]
Perfluoroheptanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	99	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	1	5.8	5.5	5	100	[NT]
Perfluorodecanesulfonic acid	µg/kg	0.2	Org-029	<0.2	1	0.2	0.2	0	105	[NT]
Perfluorobutanoic acid	µg/kg	0.2	Org-029	<0.2	1	0.2	0.2	0	94	[NT]
Perfluoropentanoic acid	µg/kg	0.2	Org-029	<0.2	1	1	1	0	102	[NT]
Perfluorohexanoic acid	µg/kg	0.1	Org-029	<0.1	1	0.7	0.7	0	105	[NT]
Perfluoroheptanoic acid	µg/kg	0.1	Org-029	<0.1	1	0.3	0.4	29	98	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	1	0.8	0.7	13	95	[NT]
Perfluorononanoic acid	µg/kg	0.1	Org-029	<0.1	1	0.6	0.6	0	96	[NT]
Perfluorodecanoic acid	µg/kg	0.5	Org-029	<0.5	1	2	2	0	103	[NT]
Perfluoroundecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	92	[NT]
Perfluorododecanoic acid	µg/kg	0.5	Org-029	<0.5	1	0.9	0.8	12	89	[NT]
Perfluorotridecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	88	[NT]
Perfluorotetradecanoic acid	µg/kg	5	Org-029	<5	1	<5	<5	0	96	[NT]
4:2 FTS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	101	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	97	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	102	[NT]
10:2 FTS	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	107	[NT]
Perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	1	<1	<1	0	102	[NT]
N-Methyl perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	1	<1	<1	0	103	[NT]
N-Ethyl perfluorooctanesulfonamide	µg/kg	1	Org-029	<1	1	<1	<1	0	99	[NT]
N-Me perfluorooctanesulfonamidethanol	µg/kg	1	Org-029	<1	1	<1	<1	0	105	[NT]
N-Et perfluorooctanesulfonamidethanol	µg/kg	5	Org-029	<5	1	<5	<5	0	102	[NT]
MePerfluorooctanesulfonamidacetic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	100	[NT]
EtPerfluorooctanesulfonamidacetic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	96	[NT]
Surrogate ¹³ C ₈ PFOS	%		Org-029	102	1	103	100	3	103	[NT]
Surrogate ¹³ C ₂ PFOA	%		Org-029	95	1	98	97	1	106	[NT]

QUALITY CONTROL: PFAS in Soils Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	101	1	92	100	8	104	[NT]
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	100	1	98	97	1	98	[NT]
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	99	1	93	95	2	96	[NT]
Extracted ISTD ¹³ C ₄ PFBA	%		Org-029	103	1	100	96	4	102	[NT]
Extracted ISTD ¹³ C ₃ PFPeA	%		Org-029	102	1	99	95	4	103	[NT]
Extracted ISTD ¹³ C ₂ PFHxA	%		Org-029	101	1	98	95	3	97	[NT]
Extracted ISTD ¹³ C ₄ PFHpA	%		Org-029	101	1	97	98	1	101	[NT]
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	106	1	104	103	1	101	[NT]
Extracted ISTD ¹³ C ₅ PFNA	%		Org-029	100	1	102	101	1	103	[NT]
Extracted ISTD ¹³ C ₂ PFDA	%		Org-029	102	1	102	100	2	102	[NT]
Extracted ISTD ¹³ C ₂ PFUnDA	%		Org-029	105	1	105	106	1	118	[NT]
Extracted ISTD ¹³ C ₂ PFDoDA	%		Org-029	124	1	109	114	4	117	[NT]
Extracted ISTD ¹³ C ₂ PFTeDA	%		Org-029	124	1	128	119	7	119	[NT]
Extracted ISTD ¹³ C ₂ 4:2FTS	%		Org-029	117	1	114	111	3	107	[NT]
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	120	1	146	138	6	118	[NT]
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	128	1	192	186	3	120	[NT]
Extracted ISTD ¹³ C ₈ FOSA	%		Org-029	108	1	98	98	0	104	[NT]
Extracted ISTD d ₃ N MeFOSA	%		Org-029	105	1	95	96	1	104	[NT]
Extracted ISTD d ₅ N EtFOSA	%		Org-029	109	1	93	95	2	106	[NT]
Extracted ISTD d ₇ N MeFOSE	%		Org-029	106	1	101	99	2	104	[NT]

QUALITY CONTROL: PFAS in Soils Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Extracted ISTD d ₉ N EtFOSE	%		Org-029	109	1	92	97	5	104	[NT]
Extracted ISTD d ₃ N MeFOSAA	%		Org-029	144	1	194	194	0	137	[NT]
Extracted ISTD d ₅ N EtFOSAA	%		Org-029	123	1	#	192		119	[NT]

QUALITY CONTROL: PFAS in Soils Short					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			06/05/2025	[NT]	[NT]	[NT]	[NT]	06/05/2025	[NT]
Date analysed	-			06/05/2025	[NT]	[NT]	[NT]	[NT]	06/05/2025	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate ¹³ C ₈ PFOS	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate ¹³ C ₂ PFOA	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	106	[NT]
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	104	[NT]
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	[NT]
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	99	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	120	[NT]	[NT]	[NT]	[NT]	118	[NT]
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	128	[NT]	[NT]	[NT]	[NT]	120	[NT]

QUALITY CONTROL: Misc Inorg - Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			05/05/2025	23	05/05/2025	05/05/2025		05/05/2025	[NT]
Date analysed	-			05/05/2025	23	05/05/2025	05/05/2025		05/05/2025	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	23	5.8	5.6	4	99	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	23	67	55	20	102	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	23	24	20	18	98	[NT]
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	23	48	41	16	104	[NT]
Resistivity in soil*	ohm m	1	Inorg-002	<1	23	150	180	18	[NT]	[NT]

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QUALITY CONTROL: Texture and Salinity*					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			07/05/2025	[NT]	[NT]	[NT]	[NT]	07/05/2025	[NT]
Date analysed	-			07/05/2025	[NT]	[NT]	[NT]	[NT]	07/05/2025	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: CEC					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	379557-21
Date prepared	-			09/05/2025	[NT]	[NT]	[NT]	[NT]	09/05/2025	09/05/2025
Date analysed	-			09/05/2025	[NT]	[NT]	[NT]	[NT]	09/05/2025	09/05/2025
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	99	#
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	104	95
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	100	104
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	103	102

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/05/2025	[NT]	[NT]	[NT]	[NT]	06/05/2025	[NT]
Date analysed	-			07/05/2025	[NT]	[NT]	[NT]	[NT]	07/05/2025	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	109	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	111	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	102	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/05/2025	[NT]	[NT]	[NT]	[NT]	06/05/2025	[NT]
Date analysed	-			06/05/2025	[NT]	[NT]	[NT]	[NT]	06/05/2025	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
Surrogate o-Terphenyl	%		Org-020	88	[NT]	[NT]	[NT]	[NT]	114	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			06/05/2025	[NT]	[NT]	[NT]	[NT]	06/05/2025	[NT]
Date analysed	-			07/05/2025	[NT]	[NT]	[NT]	[NT]	07/05/2025	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	65	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	76	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	66	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	104	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			07/05/2025	[NT]	[NT]	[NT]	[NT]	07/05/2025	[NT]
Date analysed	-			07/05/2025	[NT]	[NT]	[NT]	[NT]	07/05/2025	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	97	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	107	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	103	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	106	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: PFAS in Waters Short					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			05/05/2025	[NT]	[NT]	[NT]	[NT]	05/05/2025	[NT]
Date analysed	-			05/05/2025	[NT]	[NT]	[NT]	[NT]	05/05/2025	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	109	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	100	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	118	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	130	[NT]
Surrogate ¹³ C ₈ PFOS	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	111	[NT]
Surrogate ¹³ C ₂ PFOA	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	106	[NT]
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	91	[NT]	[NT]	[NT]	[NT]	88	[NT]
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	119	[NT]	[NT]	[NT]	[NT]	121	[NT]
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	116	[NT]	[NT]	[NT]	[NT]	108	[NT]
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	115	[NT]	[NT]	[NT]	[NT]	114	[NT]
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	103	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

Asbestos-ID in soil: NEPM

This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Note: All samples analysed as received. However, sample 379557-10 was below the minimum recommended 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 379557-1 for Cr. Therefore a triplicate result has been issued as laboratory sample number 379557-29.

CEC - # Poor spike recovery was obtained for this sample. The sample was re-extracted and re-spiked and the poor recovery was confirmed. This is due to matrix interferences. However, an acceptable recovery was obtained for the LCS.

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Vittal Boggaram

Sample Login Details

Your reference	E37264B, St Leonards
Envirolab Reference	379557
Date Sample Received	02/05/2025
Date Instructions Received	02/05/2025
Date Results Expected to be Reported	09/05/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	28 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	9
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Envirolab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

ph 02 9910 6200 fax 02 9910 6201

customerservice@envirolab.com.au

www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metals in soil	PFAS in Soils Extended	Asbestos ID - soils NEPM - ASB-001	PFAS in Soils Short	Misc Inorg - Soil	Texture and Salinity*	CEC	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters - Acid extractable	PFAS in Waters Short	On Hold
BH4-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
BH4-0.2-0.4																				✓
BH4-0.7-1																				✓
BH4-1.3-1.5																				✓
BH4-1.8-2																				✓
BH5-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
BH5-0.4-0.6																				✓
BH5-0.6-0.7																				✓
BH6-0-0.1																				✓
BH6-0.3-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
BH6-0.6-0.8																				✓
BH6-0.9-1.1																				✓
BH7-0.13-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
BH7-0.2-0.4																				✓
BH7-0.4-0.55																				✓
BH8-0.15-0.4																				✓
BH8-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
SDUP2	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓									
TB-1	✓	✓	✓					✓												
FR-HA-1															✓	✓	✓	✓	✓	



Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metals in soil	PFAS in Soils Extended	Asbestos ID - soils NEPM - ASB-001	PFAS in Soils Short	Misc Inorg - Soil	Texture and Salinity*	CEC	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters -Acid extractable	PFAS in Waters Short	On Hold
BH4-0-0.1												✓	✓	✓						
BH4-0.2-0.4																				✓
BH4-0.7-1												✓	✓							
BH4-1.3-1.5																				✓
BH4-1.8-2												✓	✓							
BH4-3.4-3.5																				✓
BH4-4.5-4.6												✓	✓							
TS-1	✓																			

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen						JKE Job Number: E37264B Date Results Required: STANDARD Page: 1 of 2						FROM: JK Environments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Vittal Boggarram vboggarram@jkenvironments.com.au							
Location:		St Leonards, NSW						Sample Preserved in Esky on Ice											
Sampler:		VR						Tests Required											
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 8a NEPM	Combo 8	Combo 6a	Combo 3	Asbestos (detection)	BTEX	PFAS (Extended)	PFAS (Short)					
30/04/2025	1	BH4	0-0.1	G, A, PFAS	0	F: Silty Sandy Clay	X						X						
30/04/2025	2	BH4	0.2-0.4	G, A, PFAS	0	F: Silty Sandy Clay													
30/04/2025	3	BH4	0.7-1	G, A, PFAS	0	Silty Clay													
30/04/2025	4	BH4	1.3-1.5	G, A, PFAS	0	Silty Clay													
30/04/2025	5	BH4	1.8-2	G, PFAS	0	Silty Clay													
30/04/2025	6	BH5	0-0.1	G, A, PFAS	0.1	F: Silty Clay	X						X						
30/04/2025	7	BH5	0.4-0.6	G, PFAS	0.1	F: Silty Sandy Clay													
30/04/2025	8	BH5	0.6-0.7	G, PFAS	0	F: Silty Clayey Gravel													
30/04/2025	9	BH6	0-0.1	G, A, PFAS	0	F: Silty Sandy Clay													
30/04/2025	10	BH6	0.3-0.5	G, A, PFAS	0.1	F: Silty Sandy Clay	X						X						
30/04/2025	11	BH6	0.6-0.8	G, A, PFAS	0	Silty Sandy Clay													
30/04/2025	12	BH6	0.9-1.1	G, A, PFAS	0	Silty Sandy Clay													
2/05/2025	13	BH7	0.13-0.2	G, A, PFAS	0.1	F: Silty Clayey Gravel	X						X						
2/05/2025	14	BH7	0.2-0.4	G, A, PFAS	0.1	F: Silty Clay													
2/05/2025	15	BH7	0.4-0.55	G, PFAS	0	F: Silty Clay													
2/05/2025	16	BH8	0.15-0.4	G, A, PFAS	0	F: Silty Sand													
2/05/2025	17	BH8	0.4-0.5	G, PFAS	0	F: Silty Clayey Gravel	X						X						
30/04/2025	18	SDUP2	-	G, PFAS	-	Duplicate		X							X				
30/04/2025	NK	TS-1	-	V	-	Trip Spike						X							
30/04/2025	19	TB-1	-	V, PFAS	-	Trip Blank				X									
2/05/2025	20	FR-HA-1	-	#3, PFAS	-	Rinsate				X				X					
Remarks (comments/detection limits required):							Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag PFAS - PFAS Jar												
							Relinquished By: VB				Date: 2.05.25				Time: 13:00				Received By: O. Wilson



Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 379557 Ph: (0

Date Received: 2/5/15

Time Received: 1520

Received By: *CL*

Temp: Cool/Ambient

Cooling: Ice/Acepack

Security: Intact/Broken/None

[illegible]

CERTIFICATE OF ANALYSIS 380087

Client Details

Client	JK Environments
Attention	Vittal Boggaram
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E37264B, St Leonards NSW</u>
Number of Samples	10 Soil
Date samples received	08/05/2025
Date completed instructions received	08/05/2025

Analysis Details

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

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

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

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

Report Details

Date results requested by	15/05/2025
Date of Issue	15/05/2025
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Amanda Lee
 Authorised by Asbestos Approved Signatory: Lucy Zhu

Authorised By

Nancy Zhang, Laboratory Manager

Results Approved By

Diego Bigolin, Inorganics Supervisor
 Dragana Tomas, Senior Chemist
 Giovanni Agosti, Group Technical Manager
 Jack Wallis, Senior Chemist
 Lucy Zhu, Asbestos Supervisor
 Sean McAlary, Senior Chemist
 Timothy Toll, Senior Chemist

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date extracted	-	09/05/2025	09/05/2025
Date analysed	-	12/05/2025	12/05/2025
TRH C ₆ - C ₉	mg/kg	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25
vTRH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	85	88

svTRH (C10-C40) in Soil			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date extracted	-	09/05/2025	09/05/2025
Date analysed	-	10/05/2025	10/05/2025
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50
TRH >C ₁₀ -C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	140
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	140
Surrogate o-Terphenyl	%	80	83

PAHs in Soil			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date extracted	-	09/05/2025	09/05/2025
Date analysed	-	09/05/2025	09/05/2025
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	0.3
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	0.5	2.5
Anthracene	mg/kg	<0.1	0.6
Fluoranthene	mg/kg	1.7	8.1
Pyrene	mg/kg	1.7	7.6
Benzo(a)anthracene	mg/kg	1.1	3.4
Chrysene	mg/kg	1	3.5
Benzo(b,j+k)fluoranthene	mg/kg	2	5.0
Benzo(a)pyrene	mg/kg	0.97	3.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	1.6
Dibenzo(a,h)anthracene	mg/kg	0.2	0.6
Benzo(g,h,i)perylene	mg/kg	0.6	2.1
Total +ve PAH's	mg/kg	10	39
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.5	4.9
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.5	4.9
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.5	4.9
Surrogate <i>p</i> -Terphenyl-d14	%	97	88

Organochlorine Pesticides in soil			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date extracted	-	09/05/2025	09/05/2025
Date analysed	-	09/05/2025	09/05/2025
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	80	88

Organophosphorus Pesticides in Soil			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date extracted	-	09/05/2025	09/05/2025
Date analysed	-	09/05/2025	09/05/2025
Dichlorvos	mg/kg	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	80	88

PCBs in Soil			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date extracted	-	09/05/2025	09/05/2025
Date analysed	-	09/05/2025	09/05/2025
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	90	91

Misc Soil - Inorg			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date prepared	-	09/05/2025	09/05/2025
Date analysed	-	12/05/2025	12/05/2025
Total Phenolics (as Phenol)	mg/kg	<5	<5

Acid Extractable metals in soil				
Our Reference		380087-1	380087-4	380087-11
Your Reference	UNITS	BH2	BH3	BH2 - [TRIPLICATE]
Depth		0.15-0.3	0.11-0.2	0.15-0.3
Date Sampled		05/05/2025	07/05/2025	05/05/2025
Type of sample		Soil	Soil	Soil
Date prepared	-	09/05/2025	09/05/2025	09/05/2025
Date analysed	-	12/05/2025	12/05/2025	12/05/2025
Arsenic	mg/kg	10	7	7
Cadmium	mg/kg	<0.4	0.6	<0.4
Chromium	mg/kg	22	11	17
Copper	mg/kg	330	130	160
Lead	mg/kg	470	260	620
Mercury	mg/kg	0.1	0.1	0.2
Nickel	mg/kg	9	21	8
Zinc	mg/kg	790	340	330

Moisture			
Our Reference	UNITS	380087-1	380087-4
Your Reference		BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date prepared	-	09/05/2025	09/05/2025
Date analysed	-	12/05/2025	12/05/2025
Moisture	%	20	19

Misc Inorg - Soil					
Our Reference		380087-6	380087-7	380087-8	380087-9
Your Reference	UNITS	BH2	BH2	BH2	BH2
Depth		0.15-0.3	0.8-1	1.4-1.5	1.7-1.9
Date Sampled		05/05/2025	05/05/2025	05/05/2025	05/05/2025
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	12/05/2025	12/05/2025	12/05/2025	12/05/2025
Date analysed	-	12/05/2025	12/05/2025	12/05/2025	12/05/2025
pH 1:5 soil:water	pH Units	6.8	4.7	4.6	4.5
Chloride, Cl 1:5 soil:water	mg/kg	<10	20	10	10
Sulphate, SO4 1:5 soil:water	mg/kg	36	100	71	81
Resistivity in soil*	ohm m	71	88	130	130

Texture and Salinity*					
Our Reference		380087-6	380087-7	380087-8	380087-9
Your Reference	UNITS	BH2	BH2	BH2	BH2
Depth		0.15-0.3	0.8-1	1.4-1.5	1.7-1.9
Date Sampled		05/05/2025	05/05/2025	05/05/2025	05/05/2025
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	09/05/2025	09/05/2025	09/05/2025	09/05/2025
Date analysed	-	09/05/2025	09/05/2025	09/05/2025	09/05/2025
Electrical Conductivity 1:5 soil:water	µS/cm	140	110	77	75
Texture Value	-	9.0	7.0	9.0	9.0
Texture	-	CLAY LOAM	MEDIUM CLAY	CLAY LOAM	CLAY LOAM
ECe	dS/m	<2	<2	<2	<2
Class	-	NON SALINE	NON SALINE	NON SALINE	NON SALINE

CEC		
Our Reference		380087-6
Your Reference	UNITS	BH2
Depth		0.15-0.3
Date Sampled		05/05/2025
Type of sample		Soil
Date prepared	-	15/05/2025
Date analysed	-	15/05/2025
Exchangeable Ca	meq/100g	20
Exchangeable K	meq/100g	0.9
Exchangeable Mg	meq/100g	1.2
Exchangeable Na	meq/100g	0.1
Cation Exchange Capacity	meq/100g	23

Asbestos ID - soils NEPM - ASB-001

Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date analysed	-	14/05/2025	14/05/2025
Sample mass tested	g	241.99	776.12
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—
FA and AF Estimation*	g	—	—
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001
Asbestos comments	-	Nil	Nil

PFAS in Soils Extended			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Date prepared	-	09/05/2025	09/05/2025
Date analysed	-	09/05/2025	09/05/2025
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1
Perfluoropentanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1
Perfluoroheptanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	<0.1	0.2
Perfluorodecanesulfonic acid	µg/kg	<0.2	<0.2
Perfluorobutanoic acid	µg/kg	<0.2	<0.2
Perfluoropentanoic acid	µg/kg	<0.2	0.4
Perfluorohexanoic acid	µg/kg	<0.1	<0.1
Perfluoroheptanoic acid	µg/kg	<0.1	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1	<0.1
Perfluorononanoic acid	µg/kg	<0.1	<0.1
Perfluorodecanoic acid	µg/kg	<0.5	<0.5
Perfluoroundecanoic acid	µg/kg	<0.5	<0.5
Perfluorododecanoic acid	µg/kg	<0.5	<0.5
Perfluorotridecanoic acid	µg/kg	<0.5	<0.5
Perfluorotetradecanoic acid	µg/kg	<5	<5
4:2 FTS	µg/kg	<0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2
10:2 FTS	µg/kg	<0.2	<0.2
Perfluorooctane sulfonamide	µg/kg	<1	<1
N-Methyl perfluorooctane sulfonamide	µg/kg	<1	<1
N-Ethyl perfluorooctanesulfonamide	µg/kg	<1	<1
N-Me perfluorooctanesulfonamid ethanol	µg/kg	<1	<1
N-Et perfluorooctanesulfonamid ethanol	µg/kg	<5	<5
MePerfluorooctanesulf- amid oacetic acid	µg/kg	<0.2	<0.2
EtPerfluorooctanesulf amid oacetic acid	µg/kg	<0.2	<0.2
Surrogate ¹³ C ₈ PFOS	%	105	103
Surrogate ¹³ C ₂ PFOA	%	102	98
Extracted ISTD ¹³ C ₃ PFBS	%	82	83
Extracted ISTD ¹⁸ O ₂ PFHxS	%	89	85
Extracted ISTD ¹³ C ₄ PFOS	%	86	87

PFAS in Soils Extended			
Our Reference		380087-1	380087-4
Your Reference	UNITS	BH2	BH3
Depth		0.15-0.3	0.11-0.2
Date Sampled		05/05/2025	07/05/2025
Type of sample		Soil	Soil
Extracted ISTD ¹³ C ₄ PFBA	%	88	86
Extracted ISTD ¹³ C ₃ PFPeA	%	87	88
Extracted ISTD ¹³ C ₂ PFHxA	%	89	88
Extracted ISTD ¹³ C ₄ PFHpA	%	87	90
Extracted ISTD ¹³ C ₄ PFOA	%	105	95
Extracted ISTD ¹³ C ₅ PFNA	%	92	100
Extracted ISTD ¹³ C ₂ PFDA	%	104	102
Extracted ISTD ¹³ C ₂ PFUnDA	%	106	93
Extracted ISTD ¹³ C ₂ PFDoDA	%	115	102
Extracted ISTD ¹³ C ₂ PFTeDA	%	140	136
Extracted ISTD ¹³ C ₂ 4:2FTS	%	109	103
Extracted ISTD ¹³ C ₂ 6:2FTS	%	118	131
Extracted ISTD ¹³ C ₂ 8:2FTS	%	162	189
Extracted ISTD ¹³ C ₈ FOSA	%	100	96
Extracted ISTD d ₃ N MeFOSA	%	102	95
Extracted ISTD d ₅ N EtFOSA	%	108	104
Extracted ISTD d ₇ N MeFOSE	%	99	86
Extracted ISTD d ₉ N EtFOSE	%	92	92
Extracted ISTD d ₃ N MeFOSAA	%	138	186
Extracted ISTD d ₅ N EtFOSAA	%	145	#
Total Positive PFHxS & PFOS	µg/kg	<0.1	0.2
Total Positive PFOS & PFOA	µg/kg	<0.1	0.2
Total Positive PFAS	µg/kg	<0.1	0.6

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "---" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-001	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA 22nd ED 2510 and Rayment & Lyons. Resistivity is calculated from Conductivity (non NATA). Resistivity (calculated) may not correlate with results otherwise obtained using Resistivity-Current method, depending on the nature of the soil being analysed.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.

Method ID	Methodology Summary
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
INORG-123	Determined using a "Texture by Feel" method.
Metals-020	Determination of various metals by ICP-AES. Total Phosphate determined stoichiometrically from Phosphorus (assumed to be present as Phosphate). Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	380087-4
Date extracted	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Date analysed	-			12/05/2025	1	12/05/2025	12/05/2025		12/05/2025	12/05/2025
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	1	<25	<25	0	109	104
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	1	<25	<25	0	109	104
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	111	108
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	108	103
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	104	100
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	111	105
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	111	105
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	85	1	85	88	3	98	88

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	380087-4
Date extracted	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Date analysed	-			10/05/2025	1	10/05/2025	10/05/2025		10/05/2025	10/05/2025
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	1	<50	<50	0	84	90
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	1	<100	<100	0	79	108
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	1	<100	<100	0	114	119
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	1	<50	<50	0	84	90
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	1	<100	<100	0	79	108
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	1	<100	<100	0	114	119
Surrogate o-Terphenyl	%		Org-020	83	1	80	83	4	79	94

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	380087-4
Date extracted	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Date analysed	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	87
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.2	67	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	85
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	83
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	0.5	0.9	57	92	128
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	0.3	100	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	1.7	3.0	55	96	129
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	1.7	3.2	61	102	119
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	1.1	2.2	67	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	1	2.0	67	98	89
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	2	2.9	37	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	0.97	2.0	69	80	73
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.5	0.9	57	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.4	67	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	0.6	1.2	67	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	110	1	97	87	11	92	91

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	380087-4
Date extracted	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Date analysed	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	86
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	90
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	72
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	98
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	100
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	88	88
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	120	94
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	88
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	110
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	68
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	95	1	80	93	15	102	90

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	380087-4
Date extracted	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Date analysed	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	102
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	92
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	94
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	106
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	104
Fenthion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	98
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	104
Phosalone	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	95	1	80	93	15	102	90

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	380087-4
Date extracted	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Date analysed	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	89	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	89	1	90	96	6	97	94

QUALITY CONTROL: Misc Soil - Inorg					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	[NT]
Date analysed	-			12/05/2025	1	12/05/2025	12/05/2025		12/05/2025	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	106	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	380087-4
Date prepared	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Date analysed	-			12/05/2025	1	12/05/2025	12/05/2025		12/05/2025	12/05/2025
Arsenic	mg/kg	4	Metals-020	<4	1	10	9	11	107	106
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	93	89
Chromium	mg/kg	1	Metals-020	<1	1	22	20	10	98	97
Copper	mg/kg	1	Metals-020	<1	1	330	83	120	106	#
Lead	mg/kg	1	Metals-020	<1	1	470	770	48	100	78
Mercury	mg/kg	0.1	Metals-021	<0.1	1	0.1	0.3	100	103	103
Nickel	mg/kg	1	Metals-020	<1	1	9	7	25	101	84
Zinc	mg/kg	1	Metals-020	<1	1	790	340	80	102	#

QUALITY CONTROL: Misc Inorg - Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			12/05/2025	[NT]	[NT]	[NT]	[NT]	12/05/2025	[NT]
Date analysed	-			12/05/2025	[NT]	[NT]	[NT]	[NT]	12/05/2025	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	99	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	90	[NT]
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	[NT]	[NT]	[NT]	[NT]	91	[NT]
Resistivity in soil*	ohm m	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: Texture and Salinity*					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			09/05/2025	[NT]	[NT]	[NT]	[NT]	09/05/2025	[NT]
Date analysed	-			09/05/2025	[NT]	[NT]	[NT]	[NT]	09/05/2025	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			15/05/2025	6	15/05/2025	15/05/2025		15/05/2025	[NT]
Date analysed	-			15/05/2025	6	15/05/2025	15/05/2025		15/05/2025	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	6	20	21	5	98	[NT]
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	6	0.9	0.9	0	101	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	6	1.2	1.2	0	97	[NT]
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	6	0.1	0.1	0	95	[NT]

QUALITY CONTROL: PFAS in Soils Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	380087-4
Date prepared	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Date analysed	-			09/05/2025	1	09/05/2025	09/05/2025		09/05/2025	09/05/2025
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	111	100
Perfluoropentanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	115	107
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	115	106
Perfluoroheptanesulfonic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	106	104
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	104	94
Perfluorodecanesulfonic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	116	105
Perfluorobutanoic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	105	103
Perfluoropentanoic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	115	110
Perfluorohexanoic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	107	124
Perfluoroheptanoic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	94	94
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	97	97
Perfluorononanoic acid	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	117	105
Perfluorodecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	118	113
Perfluoroundecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	91	85
Perfluorododecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	106	99
Perfluorotridecanoic acid	µg/kg	0.5	Org-029	<0.5	1	<0.5	<0.5	0	98	92
Perfluorotetradecanoic acid	µg/kg	5	Org-029	<5	1	<5	<5	0	96	85
4:2 FTS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	97	98
6:2 FTS	µg/kg	0.1	Org-029	<0.1	1	<0.1	<0.1	0	114	108
8:2 FTS	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	102	100
10:2 FTS	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	105	117
Perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	1	<1	<1	0	108	104
N-Methyl perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	1	<1	<1	0	106	101
N-Ethyl perfluorooctanesulfonamide	µg/kg	1	Org-029	<1	1	<1	<1	0	95	94
N-Me perfluorooctanesulfonamidethanol	µg/kg	1	Org-029	<1	1	<1	<1	0	106	96
N-Et perfluorooctanesulfonamidethanol	µg/kg	5	Org-029	<5	1	<5	<5	0	115	108
MePerfluorooctanesulfonamidacetic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	92	99
EtPerfluorooctanesulfonamidacetic acid	µg/kg	0.2	Org-029	<0.2	1	<0.2	<0.2	0	106	105
Surrogate ¹³ C ₈ PFOS	%		Org-029	102	1	105	104	1	104	97
Surrogate ¹³ C ₂ PFOA	%		Org-029	92	1	102	90	12	94	100

QUALITY CONTROL: PFAS in Soils Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	380087-4
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	95	1	82	87	6	91	87
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	96	1	89	90	1	93	87
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	98	1	86	91	6	97	93
Extracted ISTD ¹³ C ₄ PFBA	%		Org-029	99	1	88	94	7	99	89
Extracted ISTD ¹³ C ₃ PFPeA	%		Org-029	95	1	87	91	4	96	87
Extracted ISTD ¹³ C ₂ PFHxA	%		Org-029	109	1	89	99	11	111	88
Extracted ISTD ¹³ C ₄ PFHpA	%		Org-029	102	1	87	95	9	103	102
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	111	1	105	101	4	111	98
Extracted ISTD ¹³ C ₅ PFNA	%		Org-029	113	1	92	113	20	101	94
Extracted ISTD ¹³ C ₂ PFDA	%		Org-029	103	1	104	111	7	98	104
Extracted ISTD ¹³ C ₂ PFUnDA	%		Org-029	108	1	106	116	9	107	111
Extracted ISTD ¹³ C ₂ PFDoDA	%		Org-029	121	1	115	113	2	113	110
Extracted ISTD ¹³ C ₂ PFTeDA	%		Org-029	160	1	140	142	1	131	141
Extracted ISTD ¹³ C ₂ 4:2FTS	%		Org-029	113	1	109	103	6	115	112
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	96	1	118	106	11	97	132
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	104	1	162	123	27	105	#
Extracted ISTD ¹³ C ₈ FOSA	%		Org-029	111	1	100	103	3	103	96
Extracted ISTD d ₃ N MeFOSA	%		Org-029	112	1	102	105	3	106	99
Extracted ISTD d ₅ N EtFOSA	%		Org-029	122	1	108	111	3	120	104
Extracted ISTD d ₇ N MeFOSE	%		Org-029	113	1	99	110	11	106	97

QUALITY CONTROL: PFAS in Soils Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	380087-4
Extracted ISTD d ₉ N EtFOSE	%		Org-029	117	1	92	107	15	108	93
Extracted ISTD d ₃ N MeFOSAA	%		Org-029	112	1	138	116	17	108	186
Extracted ISTD d ₅ N EtFOSAA	%		Org-029	102	1	145	125	15	97	#

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of sample 380087-1.

Acid Extractable Metals in Soil:

- The laboratory RPD acceptance criteria has been exceeded for 380087-1 for Cu, Pb & Zn. Therefore a triplicate result has been issued as laboratory sample number 380087-11.
- # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos-ID in soil: NEPM

This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Note: All samples analysed as received. However, sample 380087-1 is below the minimum recommended 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Vittal Boggaram

Sample Login Details

Your reference	E37264B, St Leonards NSW
Envirolab Reference	380087
Date Sample Received	08/05/2025
Date Instructions Received	08/05/2025
Date Results Expected to be Reported	15/05/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	10 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Sample #1: 1 x asbestos NEPM bag received ~300g of sample; may be insufficient.

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Sample ID	VTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metals in soil	Misc Inorg - Soil	Texture and Salinity*	CEC	Asbestos ID - soils NEPM - ASB-001	PFAS in Soils Extended	On Hold
BH2-0.15-0.3	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	
BH2-0.8-1														✓
BH2-1.7-1.9														✓
BH3-0.11-0.2	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	
BH3-0.3-0.5														✓
BH2-0.15-0.3									✓	✓	✓			
BH2-0.8-1									✓	✓				
BH2-1.4-1.5									✓	✓				
BH2-1.7-1.9									✓	✓				
BH3-0.3-0.5														✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

SAMPLE AND CHAIN OF CUSTODY FORM

[illegible]

#380087
8/5 KW

CERTIFICATE OF ANALYSIS 384374

Client Details

Client	JK Environments
Attention	Vittal Boggaram
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	<u>E37264B St Leonards</u>
Number of Samples	6 Water
Date samples received	26/06/2025
Date completed instructions received	26/06/2025

Analysis Details

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

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

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

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

Report Details

Date results requested by	03/07/2025
Date of Issue	03/07/2025
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Giovanni Agosti, Group Technical Manager
 Jack Wallis, Senior Chemist
 Jenny He, Inorganic Team Leader
 Liam Timmins, Organics Supervisor
 Sean McAlary, Senior Chemist
 Stuart Chen, Asbestos Approved Identifier/Report coordinator
 Tabitha Roberts, Senior Chemist
 Timothy Toll, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

VOCs in water					
Our Reference		384374-1	384374-2	384374-3	384374-4
Your Reference	UNITS	MW1	MW2	MW4	WDUP1
Date Sampled		25/06/2025	25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water	Water
Date Extracted	-	30/06/2025	30/06/2025	30/06/2025	30/06/2025
Date Analysed	-	01/07/2025	01/07/2025	01/07/2025	01/07/2025
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1
Chloroform	µg/L	3	<1	3	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1
1,3-dichloropropane	µg/L	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1

VOCs in water					
Our Reference		384374-1	384374-2	384374-3	384374-4
Your Reference	UNITS	MW1	MW2	MW4	WDUP1
Date Sampled		25/06/2025	25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water	Water
Bromoform	µg/L	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	98	99	98	99
Surrogate Toluene-d8	%	99	99	98	99
Surrogate 4-Bromofluorobenzene	%	97	97	94	94

vTRH(C6-C10)/BTEXN in Water						
Our Reference		384374-1	384374-2	384374-3	384374-4	384374-5
Your Reference	UNITS	MW1	MW2	MW4	WDUP1	TB-1
Date Sampled		25/06/2025	25/06/2025	25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	30/06/2025	30/06/2025	30/06/2025	30/06/2025	30/06/2025
Date analysed	-	01/07/2025	01/07/2025	01/07/2025	01/07/2025	01/07/2025
TRH C ₆ - C ₉	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	98	99	98	99	98
Surrogate Toluene-d8	%	99	99	98	99	100
Surrogate 4-Bromofluorobenzene	%	97	97	94	94	95

vTRH(C6-C10)/BTEXN in Water		
Our Reference		384374-6
Your Reference	UNITS	TS-1
Date Sampled		25/06/2025
Type of sample		Water
Date extracted	-	30/06/2025
Date analysed	-	01/07/2025
Benzene	µg/L	98%
Toluene	µg/L	95%
Ethylbenzene	µg/L	95%
m+p-xylene	µg/L	97%
o-xylene	µg/L	95%
Surrogate Dibromofluoromethane	%	98
Surrogate Toluene-d8	%	99
Surrogate 4-Bromofluorobenzene	%	96

svTRH (C10-C40) in Water						
Our Reference	UNITS	384374-1	384374-2	384374-3	384374-4	384374-5
Your Reference		MW1	MW2	MW4	WDUP1	TB-1
Date Sampled		25/06/2025	25/06/2025	25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	27/06/2025	27/06/2025	27/06/2025	27/06/2025	27/06/2025
Date analysed	-	28/06/2025	28/06/2025	28/06/2025	28/06/2025	28/06/2025
TRH C ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	110	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	110	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆	µg/L	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH >C ₁₆ - C ₃₄	µg/L	130	<100	100	<100	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	130	<50	100	<50	<50
Surrogate o-Terphenyl	%	99	89	98	94	98

PAHs in Water						
Our Reference		384374-1	384374-2	384374-3	384374-4	384374-5
Your Reference	UNITS	MW1	MW2	MW4	WDUP1	TB-1
Date Sampled		25/06/2025	25/06/2025	25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	27/06/2025	27/06/2025	27/06/2025	27/06/2025	27/06/2025
Date analysed	-	30/06/2025	30/06/2025	30/06/2025	30/06/2025	30/06/2025
Naphthalene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	0.13	<0.1	<0.1	<0.1	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	94	89	98	93	97

All metals in water-dissolved						
Our Reference	UNITS	384374-1	384374-2	384374-3	384374-4	384374-5
Your Reference		MW1	MW2	MW4	WDUP1	TB-1
Date Sampled		25/06/2025	25/06/2025	25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	27/06/2025	27/06/2025	27/06/2025	27/06/2025	27/06/2025
Date analysed	-	27/06/2025	27/06/2025	27/06/2025	27/06/2025	27/06/2025
Arsenic-Dissolved	µg/L	<1	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	<1	2	<1	2	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	100	74	6	77	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Zinc-Dissolved	µg/L	290	370	10	380	<1
Aluminium-Dissolved	µg/L	100	80	10	[NA]	[NA]
Silver-Dissolved	µg/L	<1	<1	<1	[NA]	[NA]
Antimony-Dissolved	µg/L	<1	<1	<1	[NA]	[NA]
Barium-Dissolved	µg/L	120	47	110	[NA]	[NA]
Beryllium-Dissolved	µg/L	<0.5	<0.5	<0.5	[NA]	[NA]
Boron-Dissolved	µg/L	50	40	30	[NA]	[NA]
Cobalt-Dissolved	µg/L	97	2	4	[NA]	[NA]
Iron-Dissolved	µg/L	4,900	21,000	1,700	[NA]	[NA]
Lithium-Dissolved	µg/L	48	16	18	[NA]	[NA]
Manganese-Dissolved	µg/L	1,300	650	710	[NA]	[NA]
Molybdenum-Dissolved	µg/L	2	<1	<1	[NA]	[NA]
Selenium-Dissolved	µg/L	<1	<1	<1	[NA]	[NA]
Strontium-Dissolved	µg/L	190	26	94	[NA]	[NA]
Uranium-Dissolved	µg/L	<0.5	<0.5	<0.5	[NA]	[NA]
Vanadium-Dissolved	µg/L	<1	<1	<1	[NA]	[NA]

Metals in Waters - Acid extractable				
Our Reference		384374-1	384374-2	384374-3
Your Reference	UNITS	MW1	MW2	MW4
Date Sampled		25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water
Date prepared	-	30/06/2025	30/06/2025	30/06/2025
Date analysed	-	02/07/2025	02/07/2025	02/07/2025
Phosphorus - Total	mg/L	0.79	0.4	<0.05

Miscellaneous Inorganics				
Our Reference		384374-1	384374-2	384374-3
Your Reference	UNITS	MW1	MW2	MW4
Date Sampled		25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water
Date prepared	-	26/06/2025	26/06/2025	26/06/2025
Date analysed	-	26/06/2025	26/06/2025	26/06/2025
Acidity as CaCO ₃	mg/L	500	630	53
pH	pH Units	6.0	5.5	6.7
Electrical Conductivity	µS/cm	2,100	1,300	1,300
Redox Potential*	mV	103	100	74
Dissolved Oxygen*	mg/L	7.3	7.2	7.2
Turbidity	NTU	83	56	270
Total Dissolved Solids (grav)	mg/L	1,100	700	750
Total Suspended Solids	mg/L	11,000	72	120
Total Organic Carbon	mg/L	3	1	2
Sodium Adsorption Ratio	-	7.3	10	7.6
Silica (Reactive - SiO ₂)	mg/L	7.7	7.3	7.9
Ammonia as N in water	mg/L	0.005	0.03	0.088
Nitrate as N in water	mg/L	<0.005	0.009	0.080
Nitrite as N in water	mg/L	<0.005	0.01	<0.005
NOx as N in water	mg/L	<0.005	0.02	0.082
Total Nitrogen in water	mg/L	<0.1	<0.1	0.2
TKN in water	mg/L	<0.1	<0.1	<0.1
Phosphate as P in water	mg/L	<0.005	<0.005	<0.005
Organic Nitrogen as N	mg/L	<0.2	<0.2	<0.2

Ion Balance				
Our Reference		384374-1	384374-2	384374-3
Your Reference	UNITS	MW1	MW2	MW4
Date Sampled		25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water
Date prepared	-	27/06/2025	27/06/2025	27/06/2025
Date analysed	-	27/06/2025	27/06/2025	27/06/2025
Calcium - Dissolved	mg/L	37	5.6	13
Potassium - Dissolved	mg/L	7.6	3	5
Sodium - Dissolved	mg/L	300	200	190
Magnesium - Dissolved	mg/L	53	14	20
Hardness (calc) equivalent CaCO ₃	mg/L	310	71	110
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	<5	<5	<5
Bicarbonate Alkalinity as CaCO ₃	mg/L	270	86	56
Carbonate Alkalinity as CaCO ₃	mg/L	<5	<5	<5
Total Alkalinity as CaCO ₃	mg/L	270	86	56
Sulphate, SO ₄	mg/L	60	55	35
Chloride, Cl	mg/L	400	250	280
Ionic Balance	%	4.0	2.0	5.0

Microbiological Testing				
Our Reference		384374-1	384374-2	384374-3
Your Reference	UNITS	MW1	MW2	MW4
Date Sampled		25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water
Date of testing	-	27/06/2025	27/06/2025	27/06/2025
E. coli	MPN/100mL	20	<18	<18
Thermotolerant Coliforms	MPN/100mL	20	<18	<18

PFAS in Waters Trace Extended

Our Reference		384374-1	384374-2	384374-3	384374-4	384374-5
Your Reference	UNITS	MW1	MW2	MW4	WDUP1	TB-1
Date Sampled		25/06/2025	25/06/2025	25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	02/07/2025	02/07/2025	02/07/2025	02/07/2025	02/07/2025
Date analysed	-	02/07/2025	02/07/2025	02/07/2025	02/07/2025	02/07/2025
Perfluorobutanesulfonic acid	µg/L	<0.0004	<0.0004	0.001	<0.0004	<0.0004
Perfluoropentanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.0002	<0.0002	0.0009	<0.0002	<0.0002
Perfluoroheptanesulfonic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorooctanesulfonic acid PFOS	µg/L	<0.0002	<0.0002	0.0007	<0.0002	<0.0002
Perfluorodecanesulfonic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorobutanoic acid	µg/L	<0.004	<0.004	<0.004	<0.01	<0.002
Perfluoropentanoic acid	µg/L	0.005	<0.002	0.006	<0.002	<0.002
Perfluorohexanoic acid	µg/L	0.0004	<0.0004	0.0081	<0.0004	<0.0004
Perfluoroheptanoic acid	µg/L	<0.0004	<0.0004	0.002	<0.0004	<0.0004
Perfluorooctanoic acid PFOA	µg/L	0.0002	<0.0002	0.002	<0.0002	<0.0002
Perfluorononanoic acid	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluorodecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluoroundecanoic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorododecanoic acid	µg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Perfluorotridecanoic acid	µg/L	<0.02	<0.01	<0.01	<0.01	<0.02
Perfluorotetradecanoic acid	µg/L	<0.1	<0.05	<0.05	<0.05	<0.1
4:2 FTS	µg/L	<0.001	<0.001	<0.001	<0.001	<0.001
6:2 FTS	µg/L	0.0065	0.0004	0.019	0.0004	<0.0004
8:2 FTS	µg/L	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
10:2 FTS	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonamide	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctanesulfonamide	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
MePerfluorooctanesulf- amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Surrogate ¹³ C ₈ PFOS	%	92	96	103	100	103
Surrogate ¹³ C ₂ PFOA	%	117	114	97	98	103
Extracted ISTD ¹³ C ₃ PFBS	%	62	66	87	96	88
Extracted ISTD ¹⁸ O ₂ PFHxS	%	89	99	94	102	89
Extracted ISTD ¹³ C ₄ PFOS	%	69	85	101	103	92
Extracted ISTD ¹³ C ₄ PFBA	%	32	39	39	27	93

PFAS in Waters Trace Extended						
Our Reference		384374-1	384374-2	384374-3	384374-4	384374-5
Your Reference	UNITS	MW1	MW2	MW4	WDUP1	TB-1
Date Sampled		25/06/2025	25/06/2025	25/06/2025	25/06/2025	25/06/2025
Type of sample		Water	Water	Water	Water	Water
Extracted ISTD ¹³ C ₃ PFPeA	%	45	53	81	86	104
Extracted ISTD ¹³ C ₂ PFHxA	%	84	96	80	95	88
Extracted ISTD ¹³ C ₄ PFHpA	%	54	65	90	97	88
Extracted ISTD ¹³ C ₄ PFOA	%	83	94	101	106	90
Extracted ISTD ¹³ C ₅ PFNA	%	75	88	104	110	95
Extracted ISTD ¹³ C ₂ PFDA	%	77	88	100	103	93
Extracted ISTD ¹³ C ₂ PFUnDA	%	69	88	93	94	90
Extracted ISTD ¹³ C ₂ PFDoDA	%	45	66	82	83	77
Extracted ISTD ¹³ C ₂ PFTeDA	%	28	51	46	73	36
Extracted ISTD ¹³ C ₂ 4:2FTS	%	49	58	101	109	102
Extracted ISTD ¹³ C ₂ 6:2FTS	%	79	92	113	109	101
Extracted ISTD ¹³ C ₂ 8:2FTS	%	88	101	113	109	99
Extracted ISTD ¹³ C ₈ FOSA	%	42	107	71	94	87
Extracted ISTD d ₃ N MeFOSA	%	102	103	104	106	107
Extracted ISTD d ₅ N EtFOSA	%	104	102	98	107	103
Extracted ISTD d ₇ N MeFOSE	%	97	98	96	100	98
Extracted ISTD d ₉ N EtFOSE	%	96	95	94	96	94
Extracted ISTD d ₃ N MeFOSAA	%	67	90	84	95	82
Extracted ISTD d ₅ N EtFOSAA	%	66	95	95	94	87
Total Positive PFHxS & PFOS	µg/L	<0.0002	<0.0002	0.002	<0.0002	<0.0002
Total Positive PFOS & PFOA	µg/L	0.0002	<0.0002	0.0023	<0.0002	<0.0002
Total Positive PFAS	µg/L	0.012	0.0004	0.039	0.0004	<0.0002

Method ID	Methodology Summary
Ext-008	Subcontracted to Sonic Food & Water Testing. NATA Accreditation No. 4034.
Inorg-001	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell.
Inorg-005	Acidity - determined titrimetrically in accordance with APHA latest Edition, 2310-B.
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-018	Total Dissolved Solids - determined gravimetrically. The solids are dried at 180+/-10°C. NOTE: Where the EC of the sample is <100µS/cm, the TDS will typically be below 70mg/L (as the sample is very likely to be at least drinking water quality). Therefore to ensure data quality for TDS, the TDS is typically calculated as per the equation below:- $\text{TDS} = \text{EC} * 0.6$
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.
Inorg-022	Turbidity - measured nephelometrically using a turbidimeter, in accordance with APHA latest edition, 2130-B.
Inorg-035	Analysed using an electrode. Please note that the results for water analyses are indicative only, samples are ideally analysed on collection.
Inorg-040	The concentrations of the major ions (mg/L) are converted to milliequivalents and summed. The ionic balance should be within +/- 15% ie total anions = total cations +/-15%.
Inorg-055	Nitrate - determined colourimetrically. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055	Nitrite - determined colourimetrically based on APHA latest edition NO2- B. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-055/062/127	Total Nitrogen - Calculation sum of TKN and oxidised Nitrogen. Alternatively analysed by combustion and chemiluminescence.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Waters samples are filtered on receipt prior to analysis. Soils are analysed following a water extraction.
Inorg-062	TKN - determined colourimetrically based on APHA latest edition 4500 Norg. Alternatively, TKN can be derived from calculation (Total N - NOx).
Inorg-079	TOC determined using a TOC analyser using the combustion method. Dissolved requires filtering prior to determination. Analysis using APHA latest edition 5310B.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
Inorg-112	Dissolved Oxygen using membrane electrode. Note this analysis should ideally be carried out immediately after sampling.
INORG-120	Reactive Silica (SiO2) determined colorimetrically. Waters samples are filtered on receipt prior to analysis.

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES. Total Phosphate determined stoichiometrically from Phosphorus (assumed to be present as Phosphate). Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation. Submission of low masses of sample e.g. for dust samples, may result in raised PQLs.
Metals-020	Calcium and Magnesium analysed by ICP-AES and SAR calculated.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date Extracted	-			30/06/2025	1	30/06/2025	30/06/2025		30/06/2025	[NT]
Date Analysed	-			01/07/2025	1	01/07/2025	01/07/2025		01/07/2025	[NT]
Dichlorodifluoromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Chloromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Bromomethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Chloroethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-023	<10	1	<10	<10	0	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	102	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloroform	µg/L	1	Org-023	<1	1	3	3	0	107	[NT]
2,2-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	101	[NT]
1,1,1-trichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	106	[NT]
1,1-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Cyclohexane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	117	[NT]
Dibromomethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trichloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	99	[NT]
Bromodichloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	99	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	101	[NT]
1,3-dichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-023	<1	1	<1	<1	0	92	[NT]
1,2-dibromoethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-023	<1	1	<1	<1	0	106	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	94	[NT]
Bromoform	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	95	[NT]
Styrene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	95	[NT]
1,2,3-trichloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	96	1	98	99	1	112	[NT]
Surrogate Toluene-d8	%		Org-023	99	1	99	99	0	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	97	1	97	98	1	93	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			30/06/2025	1	30/06/2025	30/06/2025		30/06/2025	[NT]
Date analysed	-			01/07/2025	1	01/07/2025	01/07/2025		01/07/2025	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	1	<10	<10	0	100	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	1	<10	<10	0	100	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	117	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	101	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	94	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	95	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	95	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	96	1	98	99	1	112	[NT]
Surrogate Toluene-d8	%		Org-023	99	1	99	99	0	99	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	97	1	97	98	1	93	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			27/06/2025	[NT]	[NT]	[NT]	[NT]	27/06/2025	[NT]
Date analysed	-			28/06/2025	[NT]	[NT]	[NT]	[NT]	28/06/2025	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
Surrogate o-Terphenyl	%		Org-020	99	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			27/06/2025	[NT]	[NT]	[NT]	[NT]	27/06/2025	[NT]
Date analysed	-			30/06/2025	[NT]	[NT]	[NT]	[NT]	30/06/2025	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	96	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: All metals in water-dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	384374-2
Date prepared	-			27/06/2025	1	27/06/2025	27/06/2025		27/06/2025	27/06/2025
Date analysed	-			27/06/2025	1	27/06/2025	27/06/2025		27/06/2025	27/06/2025
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	90	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	92	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	89	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	90	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	101	93
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	100	100	0	89	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	93	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	290	280	4	88	[NT]
Aluminium-Dissolved	µg/L	10	Metals-022	<10	1	100	100	0	98	[NT]
Silver-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	84	[NT]
Antimony-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	93	[NT]
Barium-Dissolved	µg/L	1	Metals-022	<1	1	120	110	9	90	[NT]
Beryllium-Dissolved	µg/L	0.5	Metals-022	<0.5	1	<0.5	<0.5	0	92	[NT]
Boron-Dissolved	µg/L	20	Metals-022	<20	1	50	60	18	92	[NT]
Cobalt-Dissolved	µg/L	1	Metals-022	<1	1	97	95	2	88	[NT]
Iron-Dissolved	µg/L	10	Metals-022	<10	1	4900	5000	2	89	[NT]
Lithium-Dissolved	µg/L	1	Metals-022	<1	1	48	48	0	93	[NT]
Manganese-Dissolved	µg/L	5	Metals-022	<5	1	1300	1200	8	90	[NT]
Molybdenum-Dissolved	µg/L	1	Metals-022	<1	1	2	2	0	86	[NT]
Selenium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	90	[NT]
Strontium-Dissolved	µg/L	1	Metals-022	<1	1	190	190	0	87	[NT]
Uranium-Dissolved	µg/L	0.5	Metals-022	<0.5	1	<0.5	<0.5	0	91	[NT]
Vanadium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	88	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			30/06/2025	2	30/06/2025	30/06/2025		30/06/2025	[NT]
Date analysed	-			02/07/2025	2	02/07/2025	02/07/2025		02/07/2025	[NT]
Phosphorus - Total	mg/L	0.05	Metals-020	<0.05	2	0.4	0.4	0	111	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			26/06/2025	1	26/06/2025	26/06/2025		26/06/2025	[NT]
Date analysed	-			26/06/2025	1	26/06/2025	26/06/2025		26/06/2025	[NT]
Acidity as CaCO ₃	mg/L	5	Inorg-005	<5	1	500	[NT]		98	[NT]
pH	pH Units		Inorg-001	[NT]	1	6.0	[NT]		99	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	1	2100	[NT]		98	[NT]
Redox Potential*	mV		Inorg-035	[NT]	1	103	[NT]		99	[NT]
Dissolved Oxygen*	mg/L	0.1	Inorg-112	<0.1	1	7.3	[NT]		[NT]	[NT]
Turbidity	NTU	0.1	Inorg-022	<0.1	1	83	[NT]		103	[NT]
Total Dissolved Solids (grav)	mg/L	5	Inorg-018	<5	1	1100	[NT]		90	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	11000	[NT]		93	[NT]
Total Organic Carbon	mg/L	1	Inorg-079	<1	1	3	[NT]		102	[NT]
Sodium Adsorption Ratio	-	0.01	Metals-020	[NT]	1	7.3	7.2	1	93	[NT]
Silica (Reactive - SiO ₂)	mg/L	0.1	INORG-120	<0.1	1	7.7	[NT]		103	[NT]
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	1	0.005	[NT]		96	[NT]
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	[NT]		91	[NT]
Nitrite as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	[NT]		98	[NT]
NOx as N in water	mg/L	0.005	Inorg-055	<0.005	1	<0.005	[NT]		93	[NT]
Total Nitrogen in water	mg/L	0.1	Inorg-055/062/127	<0.1	1	<0.1	[NT]		88	[NT]
TKN in water	mg/L	0.1	Inorg-062	<0.1	1	<0.1	[NT]		[NT]	[NT]
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	1	<0.005	[NT]		94	[NT]
Organic Nitrogen as N	mg/L	0.2	Inorg-055/062/127	<0.2	1	<0.2	[NT]		[NT]	[NT]

QUALITY CONTROL: Ion Balance					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	384374-1
Date prepared	-			27/06/2025	1	27/06/2025	27/06/2025		27/06/2025	27/06/2025
Date analysed	-			27/06/2025	1	27/06/2025	27/06/2025		27/06/2025	27/06/2025
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	37	37	0	99	[NT]
Potassium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	7.6	7.4	3	97	[NT]
Sodium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	300	290	3	92	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	1	53	52	2	97	[NT]
Hardness (calc) equivalent CaCO ₃	mg/L	3	Metals-020	[NT]	1	310	310	0	[NT]	[NT]
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	5	Inorg-006	<5	1	<5	[NT]		[NT]	[NT]
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	270	[NT]		[NT]	[NT]
Carbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	<5	[NT]		[NT]	[NT]
Total Alkalinity as CaCO ₃	mg/L	5	Inorg-006	<5	1	270	[NT]		111	[NT]
Sulphate, SO ₄	mg/L	1	Inorg-081	<1	1	60	[NT]		109	#
Chloride, Cl	mg/L	1	Inorg-081	<1	1	400	[NT]		99	#
Ionic Balance	%		Inorg-040	[NT]	1	4.0	[NT]		[NT]	[NT]

QUALITY CONTROL: Ion Balance					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	3	27/06/2025	27/06/2025		[NT]	[NT]
Date analysed	-			[NT]	3	27/06/2025	27/06/2025		[NT]	[NT]
Calcium - Dissolved	mg/L	0.5	Metals-020	[NT]	3	13	[NT]		[NT]	[NT]
Potassium - Dissolved	mg/L	0.5	Metals-020	[NT]	3	5	[NT]		[NT]	[NT]
Sodium - Dissolved	mg/L	0.5	Metals-020	[NT]	3	190	[NT]		[NT]	[NT]
Magnesium - Dissolved	mg/L	0.5	Metals-020	[NT]	3	20	[NT]		[NT]	[NT]
Hardness (calc) equivalent CaCO ₃	mg/L	3	Metals-020	[NT]	3	110	[NT]		[NT]	[NT]
Hydroxide Alkalinity (OH ⁻) as CaCO ₃	mg/L	5	Inorg-006	[NT]	3	<5	<5	0	[NT]	[NT]
Bicarbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	3	56	57	2	[NT]	[NT]
Carbonate Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	3	<5	<5	0	[NT]	[NT]
Total Alkalinity as CaCO ₃	mg/L	5	Inorg-006	[NT]	3	56	57	2	[NT]	[NT]
Sulphate, SO ₄	mg/L	1	Inorg-081	[NT]	3	35	[NT]		[NT]	[NT]
Chloride, Cl	mg/L	1	Inorg-081	[NT]	3	280	[NT]		[NT]	[NT]
Ionic Balance	%		Inorg-040	[NT]	3	5.0	[NT]		[NT]	[NT]

QUALITY CONTROL: PFAS in Waters Trace Extended					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			02/07/2025	[NT]	[NT]	[NT]	[NT]	02/07/2025	[NT]
Date analysed	-			02/07/2025	[NT]	[NT]	[NT]	[NT]	02/07/2025	[NT]
Perfluorobutanesulfonic acid	µg/L	0.0004	Org-029	<0.0004	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluoropentanesulfonic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.0002	Org-029	<0.0002	[NT]	[NT]	[NT]	[NT]	92	[NT]
Perfluoroheptanesulfonic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	89	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.0002	Org-029	<0.0002	[NT]	[NT]	[NT]	[NT]	92	[NT]
Perfluorodecanesulfonic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	85	[NT]
Perfluorobutanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	91	[NT]
Perfluoropentanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	90	[NT]
Perfluorohexanoic acid	µg/L	0.0004	Org-029	<0.0004	[NT]	[NT]	[NT]	[NT]	92	[NT]
Perfluoroheptanoic acid	µg/L	0.0004	Org-029	<0.0004	[NT]	[NT]	[NT]	[NT]	92	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.0002	Org-029	<0.0002	[NT]	[NT]	[NT]	[NT]	86	[NT]
Perfluorononanoic acid	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	90	[NT]
Perfluorodecanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	96	[NT]
Perfluoroundecanoic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorododecanoic acid	µg/L	0.005	Org-029	<0.005	[NT]	[NT]	[NT]	[NT]	88	[NT]
Perfluorotridecanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	123	[NT]
Perfluorotetradecanoic acid	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	91	[NT]
4:2 FTS	µg/L	0.001	Org-029	<0.001	[NT]	[NT]	[NT]	[NT]	98	[NT]
6:2 FTS	µg/L	0.0004	Org-029	<0.0004	[NT]	[NT]	[NT]	[NT]	98	[NT]
8:2 FTS	µg/L	0.0004	Org-029	<0.0004	[NT]	[NT]	[NT]	[NT]	97	[NT]
10:2 FTS	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	80	[NT]
Perfluorooctane sulfonamide	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	91	[NT]
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	85	[NT]
N-Ethyl perfluorooctanesulfon amide	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
N-Me perfluorooctanesulfonamid oethanol	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	86	[NT]
N-Et perfluorooctanesulfonamid oethanol	µg/L	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	92	[NT]
MePerfluorooctanesulf- amid oacetic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	77	[NT]
EtPerfluorooctanesulf- amid oacetic acid	µg/L	0.002	Org-029	<0.002	[NT]	[NT]	[NT]	[NT]	80	[NT]
Surrogate ¹³ C ₈ PFOS	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate ¹³ C ₂ PFOA	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	102	[NT]

QUALITY CONTROL: PFAS in Waters Trace Extended						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD ¹³ C ₃ PFBS	%		Org-029	77	[NT]	[NT]	[NT]	[NT]	80	[NT]
Extracted ISTD ¹⁸ O ₂ PFHxS	%		Org-029	86	[NT]	[NT]	[NT]	[NT]	93	[NT]
Extracted ISTD ¹³ C ₄ PFOS	%		Org-029	82	[NT]	[NT]	[NT]	[NT]	87	[NT]
Extracted ISTD ¹³ C ₄ PFBA	%		Org-029	89	[NT]	[NT]	[NT]	[NT]	94	[NT]
Extracted ISTD ¹³ C ₃ PFPeA	%		Org-029	80	[NT]	[NT]	[NT]	[NT]	89	[NT]
Extracted ISTD ¹³ C ₂ PFHxA	%		Org-029	78	[NT]	[NT]	[NT]	[NT]	85	[NT]
Extracted ISTD ¹³ C ₄ PFHpA	%		Org-029	76	[NT]	[NT]	[NT]	[NT]	85	[NT]
Extracted ISTD ¹³ C ₄ PFOA	%		Org-029	77	[NT]	[NT]	[NT]	[NT]	87	[NT]
Extracted ISTD ¹³ C ₅ PFNA	%		Org-029	83	[NT]	[NT]	[NT]	[NT]	89	[NT]
Extracted ISTD ¹³ C ₂ PFDA	%		Org-029	79	[NT]	[NT]	[NT]	[NT]	84	[NT]
Extracted ISTD ¹³ C ₂ PFUnDA	%		Org-029	76	[NT]	[NT]	[NT]	[NT]	82	[NT]
Extracted ISTD ¹³ C ₂ PFDoDA	%		Org-029	76	[NT]	[NT]	[NT]	[NT]	85	[NT]
Extracted ISTD ¹³ C ₂ PFTeDA	%		Org-029	42	[NT]	[NT]	[NT]	[NT]	45	[NT]
Extracted ISTD ¹³ C ₂ 4:2FTS	%		Org-029	78	[NT]	[NT]	[NT]	[NT]	86	[NT]
Extracted ISTD ¹³ C ₂ 6:2FTS	%		Org-029	82	[NT]	[NT]	[NT]	[NT]	89	[NT]
Extracted ISTD ¹³ C ₂ 8:2FTS	%		Org-029	86	[NT]	[NT]	[NT]	[NT]	92	[NT]
Extracted ISTD ¹³ C ₈ FOSA	%		Org-029	83	[NT]	[NT]	[NT]	[NT]	90	[NT]
Extracted ISTD d ₃ N MeFOSA	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	107	[NT]
Extracted ISTD d ₅ N EtFOSA	%		Org-029	107	[NT]	[NT]	[NT]	[NT]	108	[NT]
Extracted ISTD d ₇ N MeFOSE	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: PFAS in Waters Trace Extended						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD d ₉ N EtFOSE	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD d ₃ N MeFOSAA	%		Org-029	77	[NT]	[NT]	[NT]	[NT]	85	[NT]
Extracted ISTD d ₅ N EtFOSAA	%		Org-029	76	[NT]	[NT]	[NT]	[NT]	84	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volumes) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

For Dust Deposit Gauge (DDG) analysis the sampling, sampling period and funnel exposure area do not fall under Envirolab's NATA accreditation (unless the Newcastle laboratory where responsible for the sampling), hence the annotation on the DDG units of reporting.

Urine Analysis - The BEI values listed are taken from the 2022 edition of "TLVs and BEIs Threshold Limits" by ACGIH.

Report Comments

ION_BALANCE: # Percent recovery is not applicable due to the high concentration of the analyte/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Microbiology analysed by Sonic Food & Water Testing. Report No. W2514502.

The time between collection and the commencement of testing should not exceed 24 hours. Samples tested outside this time may have their results compromised

For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen		JKE Job Number: E372648 Date Results Required: STANDARD Page: 1 of 1		FROM:  REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 Attention: Vittal Boggarram vboggarram@jkenvironments.com.au															
Location: St Leonards, NSW Sampler: VR		Sample Preserved in Esky on Ice Tests Required																	
Date Sampled	Lab Ref:	Sample Number	Sample Containers	PID	Sample Description	Alkalinity suite + Acidity	EC, pH, redox, DO	Turbidity	TDS, TSS, TOC, SAR	Ionic balance, including hardness	#3L	Additional metals: Al, Ag, Sb, Ba, Be, B, Co, Fe, Li, Mn, Mo, Se, Sr, U, V	Silica (reactive) dissolved silica	Nutrient suite	Faecal coliforms + Escherichia (E) coli	VOCs	PFAS (Trace Level Extended)	BTEX	
25/06/2025	1	MW1	## & 2x PFAS	0.2	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X		
25/06/2025	2	MW2	## & 2x PFAS	0.3	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X		
25/06/2025	3	MW4	## & 2x PFAS	0.1	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X		
25/06/2025	4	WDUP1	#3 & 2x PFAS	-	Duplicate						X					X	X		
25/06/2025	5/0	WDUP2	#3 & 2x PFAS	-	Duplicate	PLEASE SEND TO VIC						X				X	X		
25/06/2025	5	TB-1	#3 & PFAS	-	Trip Blank						X						X		
25/06/2025	6	TS-1	V	-	Trip Spike													X	
 Envirolab Services 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 6200 Job No: 384374 Date Received: 26/6/25 Time Received: 1445 Received By: KJW Temp: Cool/Ambient Cooling: Ice/icepack 3°C Security: Intact/Broken/None																			
Remarks (comments/detection limits required):						Sample Containers: ## Each sample includes: x2 amber bottles, x2 HCl preserved glass vials, x2 unpreserved plastic bottles, x2 nitric acid preserved bottles (1 is field filtered), x1 sulphuric acid preserved bottle and x1 sterile container													
Relinquished By: VB		Date: 26.06.25		Time: 12:00		Received By: Koby Wayne ELS SHD				Date: 26/6/25 1445									

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Vittal Boggaram

Sample Login Details

Your reference	E37264B St Leonards
Envirolab Reference	384374
Date Sample Received	26/06/2025
Date Instructions Received	26/06/2025
Date Results Expected to be Reported	03/07/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	6 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: ahie@envirolab.com.au

Jacinta Hurst

Phone: 02 9910 6200
Fax: 02 9910 6201
Email: jhurst@envirolab.com.au

Analysis Underway, details on the following page:



Sample ID	VOCs in water	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	All metals in water-dissolved	Metals in Waters -Acid extractable	Acidity as CaCO3	pH	Electrical Conductivity	Redox Potential*	Dissolved Oxygen*	Turbidity	Total Dissolved Solids(grav)	Total Suspended Solids	Total Organic Carbon	Sodium Adsorption Ratio	Silica (Reactive - SiO2)	Ammonia as N in water	Nitrate as N in water	Nitrite as N in water	NOx as N in water	Total Nitrogen in water	TKN in water	Phosphate as P in water	Organic Nitrogen as N	Calcium - Dissolved	Potassium - Dissolved	Sodium - Dissolved	Magnesium - Dissolved	Hardness (calc) equivalent CaCO3	Hydroxide Alkalinity (OH-) as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Total Alkalinity as CaCO3	Sulphate, SO4	Chloride, Cl	Ionic Balance				
MW1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
MW2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
MW4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
WDUP1	✓	✓	✓	✓	✓																																				
TB-1		✓	✓	✓	✓																																				
TS-1		✓																																							

Sample ID	Microbiological Testing	PFAS in Waters Trace Extended
MW1	✓	✓
MW2	✓	✓
MW4	✓	✓
WDUP1		✓
TB-1		✓
TS-1		

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.

TAT for Micro is dependent on incubation. This varies from 3 to 6 days.



Envirolab Services Pty Ltd

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melbourne@envirolab.com.au

www.envirolab.com.au

Sample Receipt Advice MGG0018

Client Details

Client	JK Environments
Attention	Vittal Boggaram

Sample Login Details

Your Reference	E37264B
Envirolab Reference	MGG0018
Date Sample Received	01/07/2025
Date Instructions Received	01/07/2025
Date Final Results Expected	09/07/2025

Sample Condition

Samples received in appropriate condition for analysis	Yes
Number of Samples	1 Water
Turnaround Time	6 Days
Temperatures / Cooling Methods	9.4°C Ice Pack

Additional Info

Sample storage - waters are routinely disposed at approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Where no sampling date has been supplied for some or all samples, the date of sample receipt has been used as the associated sampling date. The sampling dates are used to assess compliance to recommended Technical Holding Times.

Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default).

Please direct any queries to:

Chris De Luca

Phone 03 9763 2500
Email cdeluca@envirolab.com.au

Tianna Milburn

Phone 03 9763 2500
Email tmilburn@envirolab.com.au

Analysis underway, details on the following page

Sample Receipt Advice MGG0018

Analysis Grid

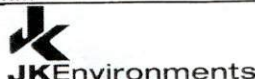
The • indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

	Combination 3 (D)	PFAS - Extended (TR)	VOC Suite
MGG0018-01	•	•	•
Water 25/06/2025			
WDUP2			

Suite Details

Suite Name	Suite Analyses
Combination 3 (D) Water	vTRH&MBTEXN, sTRH, PAH, As - Dissolved (LL), Cd - Dissolved (LL), Cr - Dissolved (LL), Cu - Dissolved (LL), Hg - Dissolved, Ni - Dissolved (LL), Pb - Dissolved (LL), Zn - Dissolved (LL)
PFAS - Extended (TR) Water	PFAS EXT TR -ISTD, PFAS-Extended TR
VOC Suite Water	Fumigants, VOC - MAH, Halogenated Aliphatics, Halogenated Aromatics, Other VOC, VOC - Surrogates

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen		JKE Job Number: E37264B Date Results Required: STANDARD Page: 1 of 1		FROM:  REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 Attention: Vital Boggarram vboggarram@jkenvironments.com.au															
Location: St Leonards, NSW		Sample Preserved in Esky on Ice																	
Sampler: VR		Tests Required																	
Date Sampled	Lab Ref:	Sample Number	Sample Containers	PID	Sample Description	Alkalinity suite + Acidity	EC, pH, redox, DO	Turbidity	TDS, TSS, TOC, SAR	Ionic balance, including hardness	#3L	Additional metals: Al, Ag, Sb, Ba, Be, B, Co, Fe, Li, Mn, Mo, Se, Sr, U, V	Silica (reactive) dissolved silica	Nutrient suite	Faecal coliforms + Escherichia (E) coli	VOCs	PFAS (Trace Level Extended)	BTEX	
25/06/2025	1	MW1	## & 2x PFAS	0.2	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X		
25/06/2025	2	MW2	## & 2x PFAS	0.3	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X		
25/06/2025	3	MW4	## & 2x PFAS	0.1	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X		
25/06/2025	4	WDUP1	#3 & 2x PFAS	-	Duplicate						X					X	X		
25/06/2025	5/0	WDUP2	#3 & 2x PFAS	-	Duplicate	PLEASE SEND TO VIC					X					X	X		
25/06/2025	5	TB-1	#3 & PFAS	-	Trip Blank						X						X		
25/06/2025	6	TS-1	V	-	Trip Spike													X	
 Envirolab Services 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 6200																			
Job No: 384574																			
Date Received: 26/6/25																			
Time Received: 1445																			
Received By: KKW																			
Temp: Cool/Ambient																			
Cooling: Ice/Icepack																			
Security: Intact/Broken/None																			
Remarks (comments/detection limits required):						Sample Containers: ## Each sample includes: x2 amber bottles, x2 HCl preserved glass vials, x2 unpreserved plastic bottles, x2 nitric acid preserved bottles (1 is field filtered), x1 sulphuric acid preserved bottle and x1 sterile container													
Relinquished By: VB		Date: 26.06.25		Time: 12:00		Received By: Koby Wayne ELS 540		Date: 26/6/25 1445											

Relinquished by
 ELS SD
 O. WILCZAK
 30/6/25


Envirolab Services
 25 Research Drive
 Croydon South VIC 3136
 Ph: (03) 9765 2500

Job No: MAG0018

Date Received: 11/7/25

Time Received: 1:35

Received By: SS

Temp: Cool/Ambient

Cooling: Ice/Icepack

Security: Intact/Broken/None

9.4°C

Certificate of Analysis MGG0018

Client Details

Client	JK Environments
Contact	Vittal Boggaram
Address	115 Wicks Road, Macquarie Park, NSW, 2113

Sample Details

Your Reference	E37264B
Number of Samples	1 Water
Date Samples Received	01/07/2025
Date Instructions Received	01/07/2025

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for soils and on an as received basis for other matrices.

Report Details

Date Final Results Expected	09/07/2025
Date of Issue	09/07/2025

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025. Tests not covered by NATA are denoted with *.

Authorisation Details

Results Approved By	Azrin Akram, Senior Chemist Maggie Hu, Organics Supervisor Tara White, Metals Supervisor
Laboratory Manager	Chris De Luca

Certificate of Analysis MGG0018

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
MGG0018-01	WDUP2	Water	25/06/2025	01/07/2025

Certificate of Analysis MGG0018

Volatile Organic Compounds - Fumigants (Water)

Envirolab ID	Units	PQL	MGG0018-01
Your Reference			WDUP2
Date Sampled			25/06/2025
2,2-Dichloropropane	µg/L	1.0	<1.0
1,2-Dichloropropane	µg/L	1.0	<1.0
cis-1,3-Dichloropropene	µg/L	1.0	<1.0
trans-1,3-Dichloropropene	µg/L	1.0	<1.0
1,2-Dibromoethane	µg/L	1.0	<1.0

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Volatile Organic Compounds - MAH (Water)

Envirolab ID Your Reference Date Sampled	Units	PQL	MGG0018-01 WDUP2 25/06/2025
Benzene	µg/L	1.0	<1.0
Toluene	µg/L	1.0	<1.0
Ethylbenzene	µg/L	1.0	<1.0
meta+para Xylene	µg/L	2.0	<2.0
Styrene	µg/L	1.0	<1.0
ortho-Xylene	µg/L	1.0	<1.0
Isopropylbenzene	µg/L	1.0	<1.0
n-Propylbenzene	µg/L	1.0	<1.0
1,3,5-Trimethylbenzene	µg/L	1.0	<1.0
tert-Butylbenzene	µg/L	1.0	<1.0
1,2,4-Trimethylbenzene	µg/L	1.0	<1.0
sec-Butylbenzene	µg/L	1.0	<1.0
4-Isopropyltoluene	µg/L	1.0	<1.0
n-Butyl benzene	µg/L	1.0	<1.0

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Volatile Organic Compounds - Halogenated Aliphatics (Water)

Envirolab ID Your Reference Date Sampled	Units	PQL	MGG0018-01 WDUP2 25/06/2025
Dichlorodifluoromethane (Freon-12)	µg/L	10	<10
Chloromethane	µg/L	10	<10
Vinyl chloride	µg/L	10	<10
Bromomethane	µg/L	10	<10
Chloroethane	µg/L	10	<10
Trichlorofluoromethane (Freon-11)	µg/L	10	<10
1,1-Dichloroethene	µg/L	1.0	<1.0
trans-1,2-Dichloroethene	µg/L	1.0	<1.0
1,1-Dichloroethane	µg/L	1.0	<1.0
cis-1,2-Dichloroethene	µg/L	1.0	<1.0
Bromochloromethane	µg/L	1.0	<1.0
Chloroform	µg/L	1.0	3.1
1,1,1-Trichloroethane	µg/L	1.0	<1.0
1,1-Dichloropropene	µg/L	1.0	<1.0
Carbon Tetrachloride	µg/L	1.0	<1.0
1,2-Dichloroethane	µg/L	1.0	<1.0
Trichloroethene	µg/L	1.0	<1.0
Dibromomethane	µg/L	1.0	<1.0
Bromodichloromethane	µg/L	1.0	<1.0
1,1,2-Trichloroethane	µg/L	1.0	<1.0
1,3-Dichloropropane	µg/L	1.0	<1.0
Tetrachloroethene	µg/L	1.0	<1.0
Dibromochloromethane	µg/L	1.0	<1.0
1,1,1,2-Tetrachloroethane	µg/L	1.0	<1.0
Bromoform	µg/L	1.0	<1.0
1,1,2,2-Tetrachloroethane	µg/L	1.0	<1.0
1,2,3-Trichloropropane	µg/L	1.0	<1.0
1,2-Dibromo-3-chloropropane	µg/L	1.0	<1.0
Hexachlorobutadiene	µg/L	1.0	<1.0

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Volatile Organic Compounds - Halogenated Aromatics (Water)

Envirolab ID	Units	PQL	MGG0018-01
Your Reference			WDUP2
Date Sampled			25/06/2025
Chlorobenzene	µg/L	1.0	<1.0
Bromobenzene	µg/L	1.0	<1.0
2-Chlorotoluene	µg/L	1.0	<1.0
4-Chlorotoluene	µg/L	1.0	<1.0
1,3-Dichlorobenzene	µg/L	1.0	<1.0
1,4-Dichlorobenzene	µg/L	1.0	<1.0
1,2-Dichlorobenzene	µg/L	1.0	<1.0
1,2,4-Trichlorobenzene	µg/L	1.0	<1.0
1,2,3-Trichlorobenzene	µg/L	1.0	<1.0

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Volatile Organic Compounds - Other VOCs (Water)

Envirolab ID	Units	PQL	MGG0018-01
Your Reference			WDUP2
Date Sampled			25/06/2025
Cyclohexane	µg/L	1.0	<1.0

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Volatile Organic Compounds - Surrogates (Water)

Envirolab ID	Units	PQL	MGG0018-01
Your Reference			WDUP2
Date Sampled			25/06/2025
Surrogate Dibromofluoromethane	%		117
Surrogate Toluene-D8	%		128
Surrogate 4-Bromofluorobenzene	%		103

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Volatile TRH and BTEX (Water)

Envirolab ID	Units	PQL	MGG0018-01
Your Reference			WDUP2
Date Sampled			25/06/2025
TRH C6-C9	µg/L	10	<10
TRH C6-C10	µg/L	10	<10
TRH C6-C10 less BTEX (F1)	µg/L	10	<10
Methyl tert butyl ether (MTBE)	µg/L	1.0	<1.0
Benzene	µg/L	1.0	<1.0
Toluene	µg/L	1.0	<1.0
Ethylbenzene	µg/L	1.0	<1.0
meta+para Xylene	µg/L	2.0	<2.0
ortho-Xylene	µg/L	1.0	<1.0
Total +ve Xylenes	µg/L	1.0	<1.0
Naphthalene (value used in F2 calc)	µg/L	1.0	<1.0
Total +ve BTEX	µg/L	1.0	<1.0
Surrogate Dibromofluoromethane	%		117
Surrogate Toluene-D8	%		128
Surrogate 4-Bromofluorobenzene	%		103

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Semi-volatile TRH (Water)

Envirolab ID	Units	PQL	MGG0018-01
Your Reference			WDUP2
Date Sampled			25/06/2025
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	100	<100
TRH C29-C36	µg/L	100	<100
Total +ve TRH C10-C36	µg/L	50	<50
TRH >C10-C16	µg/L	50	<50
TRH >C10-C16 less Naphthalene F2	µg/L	50	<50
TRH >C16-C34 (F3)	µg/L	100	<100
TRH >C34-C40 (F4)	µg/L	100	<100
Total +ve TRH >C10-C40	µg/L	50	<50
Surrogate o-Terphenyl	%		74.8

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Polycyclic Aromatic Hydrocarbons (Water)

Envirolab ID Your Reference Date Sampled	Units	PQL	MGG0018-01 WDUP2 25/06/2025
Naphthalene	µg/L	0.10	<0.10
Acenaphthylene	µg/L	0.10	<0.10
Acenaphthene	µg/L	0.10	<0.10
Fluorene	µg/L	0.10	<0.10
Phenanthrene	µg/L	0.10	<0.10
Anthracene	µg/L	0.10	<0.10
Fluoranthene	µg/L	0.10	<0.10
Pyrene	µg/L	0.10	<0.10
Benzo(a)anthracene	µg/L	0.10	<0.10
Chrysene	µg/L	0.10	<0.10
Benzo(b,j,k)fluoranthene	µg/L	0.20	<0.20
Benzo(a)pyrene	µg/L	0.10	<0.10
Indeno(1,2,3-c,d)pyrene	µg/L	0.10	<0.10
Dibenzo(a,h)anthracene	µg/L	0.10	<0.10
Benzo(g,h,i)perylene	µg/L	0.10	<0.10
Total +ve PAH	µg/L	0.10	<0.10
Surrogate p-Terphenyl-D14	%		109

Certificate of Analysis MGG0018

Dissolved Low Level Metals (Water)

Envirolab ID	Units	PQL	MGG0018-01
Your Reference			WDUP2
Date Sampled			25/06/2025
Arsenic	µg/L	1.0	<1.0
Cadmium	µg/L	0.10	<0.10
Chromium	µg/L	1.0	<1.0
Copper	µg/L	1.0	<1.0
Mercury	µg/L	0.050	<0.050
Nickel	µg/L	1.0	130
Lead	µg/L	1.0	<1.0
Zinc	µg/L	1.0	370

Certificate of Analysis MGG0018

PFAS Extended List - Trace Level (Water)

Envirolab ID Your Reference Date Sampled	Units	PQL	MGG0018-01 WDUP2 25/06/2025
Perfluorobutanesulfonic acid (PFBS)	µg/L	0.00040	<0.050 [3]
Perfluoropentanesulfonic acid (PFPeS)	µg/L	0.0010	<0.0010
Perfluorohexanesulfonic acid (PFHxS)	µg/L	0.00020	<0.00020
Perfluoroheptanesulfonic acid (PFHpS)	µg/L	0.0010	<0.0010
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.00020	0.00037
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.0020	<0.0020
Perfluorobutanoic acid (PFBA)	µg/L	0.0020	<0.010
Perfluoropentanoic acid (PFPeA)	µg/L	0.0020	0.0031
Perfluorohexanoic acid (PFHxA)	µg/L	0.00040	0.00064
Perfluoroheptanoic acid (PFHpA)	µg/L	0.00040	<0.00040
Perfluorooctanoic acid (PFOA)	µg/L	0.00020	<0.00020
Perfluorononanoic acid (PFNA)	µg/L	0.0010	<0.0010
Perfluorodecanoic acid (PFDA)	µg/L	0.0020	<0.0020
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.0020	<0.0020
Perfluorododecanoic acid (PFDoDA)	µg/L	0.0050	<0.0050
Perfluorotridecanoic acid (PFTriDA)	µg/L	0.010	<0.020
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.050	<0.10
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.0010	<0.0010
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.00040	0.0053
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.00040	<0.00040
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.0020	<0.0020
Perfluorooctane sulfonamide (FOSA)	µg/L	0.010	<0.020
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.050	<0.050
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.10	<0.10
N-Methyl perfluorooctane sulfonamidoethanol	µg/L	0.050	<0.050
N-Ethyl perfluorooctane sulfonamidoethanol	µg/L	0.50	<0.50
N-Methyl perfluorooctane sulfonamidoacetic acid	µg/L	0.0020	<0.0020
N-Ethyl perfluorooctane sulfonamidoacetic acid	µg/L	0.0020	<0.0020
Surrogate 13C8 PFOS	%		103
Surrogate 13C2 PFOA	%		102
Total +ve PFHxS+PFOS	µg/L	0.00020	0.00037
Total +ve PFOA+PFOS	µg/L	0.00020	0.00037
Total +ve PFAS	µg/L	0.00020	0.0094
Extraction Internal Standard 13C3 PFBS	%		82.0
Extraction Internal Standard 18O2 PFHxS	%		79.0
Extraction Internal Standard 13C4 PFOS	%		76.0
Extraction Internal Standard 13C4 PFBA	%		## [2]
Extraction Internal Standard 13C3 PFPeA	%		## [2]
Extraction Internal Standard 13C2 PFHxA	%		84.0
Extraction Internal Standard 13C4 PFHpA	%		95.0
Extraction Internal Standard 13C4 PFOA	%		102
Extraction Internal Standard 13C5 PFNA	%		100
Extraction Internal Standard 13C2 PFDA	%		98.0

Your Reference:

E37264B

Revision: R-00

Certificate of Analysis Generated: 09/07/2025 14:49

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Certificate of Analysis MGG0018

PFAS Extended List - Trace Level (Water)

Envirolab ID	Units	PQL	MGG0018-01
Your Reference			WDUP2
Date Sampled			25/06/2025
Extraction Internal Standard 13C2 PFUnDA	%		91.0
Extraction Internal Standard 13C2 PFDoDA	%		69.0
Extraction Internal Standard 13C2 PFTeDA	%		## [2]
Extraction Internal Standard 13C2 4:2FTS	%		193 [2]
Extraction Internal Standard 13C2 6:2FTS	%		190 [2]
Extraction Internal Standard 13C2 8:2FTS	%		## [2]
Extraction Internal Standard 13C8 FOSA	%		## [2]
Extraction Internal Standard d3 N MeFOSA	%		86.0
Extraction Internal Standard d5 N EtFOSA	%		83.0
Extraction Internal Standard d7 N MeFOSE	%		88.0
Extraction Internal Standard d9 N EtFOSE	%		83.0
Extraction Internal Standard d3 N MeFOSAA	%		125
Extraction Internal Standard d5 N EtFOSAA	%		128

Certificate of Analysis MGG0018

Result Comments

Identifier	Description
[2]	For PFAS Extracted Internal Standards denoted with ## or being outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).
[3]	PQL(s) has/have been raised due to matrix interference.

Certificate of Analysis MGG0018

Method Summary

Method ID	Methodology Summary
METALS-021	Determination of Mercury by Cold Vapour AAS.
METALS-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Where salts (oxides, chlorides etc.) are calculated from the element concentration stoichiometrically there is no guarantee that the salt form is completely soluble in the acids used in the preparation.
ORG-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
ORG-022_PAH	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and solids using DCM/Acetone/Methanol. For PAHs:- Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, for Total +ve calculations, the PQL is reflective of the lowest individual PQL and therefore, for example, "Total +ve PAHs" is simply a sum of the positive individual PAHs.
ORG-023	Determination of volatile organic compounds (VOCs) by P&T-GC-MS. Water samples are analysed directly by purge and trap GC-MS. Soils are extracted with Methanol, diluted and analysed by purge and trap GC-MS.
ORG-023_F1_TOT	Determination of volatile organic compounds (VOCs) by P&T-GC-MS. Water samples are analysed directly by purge and trap GC-MS. Solids are extracted with Methanol, diluted and analysed by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
ORG-029	Soil/solid and sorbent samples are extracted with basified Methanol. Waters and soil/sorbent extracts are directly injected and/or concentrated/extracted using SPE. TCLP/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MSMS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

Certificate of Analysis MGG0018

Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

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

Surrogate Spike

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

LCS (Laboratory Control Sample)

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

Matrix Spike

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

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

Certificate of Analysis MGG0018

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria. Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction. Spikes for Physical and Aggregate Tests are not applicable. For VOCs in water samples, three vials are required for duplicate or spike analysis.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% - see ELN-P05 QAQC tables for details (available on request); <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase. Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

Miscellaneous Information

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

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH*.

Air volumes are typically provided by customers (often as flow rate(s) and sampling time(s) and/or simply volume(s) sampled or exposure times (determines 'volume' passive badges are exposed to)). Hence in such circumstances the volume measurement is inevitably not covered by Envirolab's NATA accreditation. An exception may occur where Envirolab Newcastle does the sampling where accreditation exists for certain types of sampling and hence volume determination(s). Note air volumes are often used to determine concentrations for dust and/or analyses on filters, sorbents and in impingers. For canister sampling, the air volume is covered by Envirolab's NATA accreditation.

Data Quality Assessment Summary MGG0018

Client Details

Client	JK Environments
Your Reference	E37264B
Date Issued	09/07/2025

Recommended Holding Time Compliance

No recommended holding time exceedances

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	Yes	No Outliers
Matrix Spike	No	Matrix Spike Outliers Exist - See detailed list below
Surrogates / Extracted Internal Standards	No	Surrogates / Extracted ISTD Outliers Exist - See detailed list below
QC Frequency	No	QC Frequency Outliers Exist - See detailed list below

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary MGG0018

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
Fumigants Water	1	25/06/2025	01/07/2025	03/07/2025	Yes
VOC - MAH Water	1	25/06/2025	01/07/2025	03/07/2025	Yes
Halogenated Aliphatics Water	1	25/06/2025	01/07/2025	03/07/2025	Yes
Halogenated Aromatics Water	1	25/06/2025	01/07/2025	03/07/2025	Yes
Other VOC Water	1	25/06/2025	01/07/2025	03/07/2025	Yes
VOC - Surrogates Water	1	25/06/2025	01/07/2025	03/07/2025	Yes
vTRH&MBTEXN Water	1	25/06/2025	01/07/2025	03/07/2025	Yes
sTRH Water	1	25/06/2025	02/07/2025	02/07/2025	Yes
PAH Water	1	25/06/2025	02/07/2025	02/07/2025	Yes
Dissolved Metals (LL) Water	1	25/06/2025	01/07/2025	03/07/2025	Yes
Dissolved Metals (LL)-Hg Water	1	25/06/2025	02/07/2025	03/07/2025	Yes
PFAS EXT TR -ISTD Water	1	25/06/2025	02/07/2025	09/07/2025	Yes
PFAS-Extended TR Water	1	25/06/2025	02/07/2025	09/07/2025	Yes

Outliers: Matrix Spike

ORG-020 | Semi-volatile TRH (Water) | Batch BGG0260

Sample ID	Analyte	% Limits	% Recovery
BGG0260-MS1#	TRH >C10-C16	60 - 140	##[1]
BGG0260-MS1#	TRH >C34-C40 (F4)	60 - 140	##[1]
BGG0260-MS1#	TRH C10-C14	60 - 140	##[1]

Outliers: Surrogate / Extracted Internal Standards

ORG-029 | PFAS Extended List - Trace Level (Matrix) | Batch BGG0241

Sample ID	Analyte	% Limits	% Recovery
MGG0018-01	Extraction Internal Standard 13C4 PFBA	50 - 150	## [2]
	Extraction Internal Standard 13C3 PFPeA	50 - 150	## [2]
	Extraction Internal Standard 13C2 PFTeDA	50 - 150	## [2]
	Extraction Internal Standard 13C2 8:2FTS	50 - 150	## [2]
	Extraction Internal Standard 13C2 6:2FTS	50 - 150	190 [2]
	Extraction Internal Standard 13C2 4:2FTS	50 - 150	193 [2]

Data Quality Assessment Summary MGG0018

Outliers: QC Frequency

ORG-029 | PFAS Extended List - Trace Level (Water) | Batch BGG0241

Analysis	QC Type	Expected	Reported
PFAS EXT TR -ISTD	Duplicate	1	0
	Matrix Spike	1	0
PFAS-Extended TR	Duplicate	1	0
	Matrix Spike	1	0

Quality Control MGG0018

ORG-023 | Volatile Organic Compounds - Fumigants (Water) | Batch BGG0139

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %	Spike %
				BGG0139-DUP1#	BGG0139-DUP2#		
				Samp QC RPD %	Samp QC RPD %		
2,2-Dichloropropane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
1,2-Dichloropropane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	109	103
cis-1,3-Dichloropropene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	104	93.6
trans-1,3-Dichloropropene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	104	92.0
1,2-Dibromoethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	138	102

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-023_F1_TOT | Volatile Organic Compounds - MAH (Water) | Batch BGG0139

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %	Spike %
				BGG0139-DUP1#	BGG0139-DUP2#		
				Samp QC RPD %	Samp QC RPD %		
Benzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	106	104
Toluene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	119	106
Ethylbenzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	117	105
meta+para Xylene	µg/L	2.0	<2.0	<2.0 <2.0 [NA]	<2.0 <2.0 [NA]	118	105
Styrene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
ortho-Xylene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	118	109
Isopropylbenzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
n-Propylbenzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
1,3,5-Trimethylbenzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
tert-Butylbenzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
1,2,4-Trimethylbenzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
sec-Butylbenzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
4-Isopropyltoluene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
n-Butyl benzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control MGG0018

ORG-023 | Volatile Organic Compounds - Halogenated Aliphatics (Water) | Batch BGG0139

Analyte	Units	PQL	Blank	DUP1		DUP2		LCS %	Spike % BGG0139-MS1#
				BGG0139-DUP1#		BGG0139-DUP2#			
				Samp	QC RPD %	Samp	QC RPD %		
Dichlorodifluoromethane (Freon-12)	µg/L	10	<10	<10 <10 [NA]	<10 <10 [NA]	[NA]	[NA]		
Chloromethane	µg/L	10	<10	<10 <10 [NA]	<10 <10 [NA]	[NA]	[NA]		
Vinyl chloride	µg/L	10	<10	<10 <10 [NA]	<10 <10 [NA]	[NA]	[NA]		
Bromomethane	µg/L	10	<10	<10 <10 [NA]	<10 <10 [NA]	[NA]	[NA]		
Chloroethane	µg/L	10	<10	<10 <10 [NA]	<10 <10 [NA]	[NA]	[NA]		
Trichlorofluoromethane (Freon-11)	µg/L	10	<10	<10 <10 [NA]	<10 <10 [NA]	[NA]	[NA]		
1,1-Dichloroethene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
trans-1,2-Dichloroethene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
1,1-Dichloroethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	118	98.2		
cis-1,2-Dichloroethene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
Bromochloromethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
Chloroform	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	101	103		
1,1,1-Trichloroethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	103	102		
1,1-Dichloropropene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
Carbon Tetrachloride	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
1,2-Dichloroethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	96.1	96.3		
Trichloroethene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	115	110		
Dibromomethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
Bromodichloromethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	103	97.0		
1,1,2-Trichloroethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
1,3-Dichloropropane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
Tetrachloroethene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	119	110		
Dibromochloromethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	114	101		
1,1,1,2-Tetrachloroethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
Bromoform	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	87.6	97.4		
1,1,2,2-Tetrachloroethane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
1,2,3-Trichloropropane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
1,2-Dibromo-3-chloropropane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		
Hexachlorobutadiene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]		

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-023 | Volatile Organic Compounds - Halogenated Aromatics (Water) | Batch BGG0139

Analyte	Units	PQL	Blank	DUP1		DUP2		LCS %	Spike %
				BGG0139-DUP1#		BGG0139-DUP2#			
				Samp	QC RPD %	Samp	QC RPD %		
Chlorobenzene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	[NA]	[NA]
Bromobenzene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	[NA]	[NA]
2-Chlorotoluene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	[NA]	[NA]
4-Chlorotoluene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	[NA]	[NA]
1,3-Dichlorobenzene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	[NA]	[NA]
1,4-Dichlorobenzene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	100	98.3
1,2-Dichlorobenzene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	[NA]	[NA]
1,2,4-Trichlorobenzene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	88.6	95.2
1,2,3-Trichlorobenzene	µg/L	1.0	<1.0	<1.0	<1.0 [NA]	<1.0	<1.0 [NA]	[NA]	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-023 | Volatile Organic Compounds - Other VOCs (Water) | Batch BGG0139

Analyte	Units	PQL	Blank	DUP1		DUP2		LCS %	Spike %
				BGG0139-DUP1#		BGG0139-DUP2#			
				Samp QC RPD %		Samp QC RPD %			
Cyclohexane	µg/L	1.0	<1.0	<1.0 <1.0 [NA]		<1.0 <1.0 [NA]		103	101

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control MGG0018

ORG-023 | Volatile Organic Compounds - Surrogates (Water) | Batch BGG0139

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %	Spike %
				BGG0139-DUP1#	BGG0139-DUP2#		BGG0139-MS1#
				Samp QC RPD %	Samp QC RPD %		
Surrogate Dibromofluoromethane	%		139	107 103	107 108	95.3	99.0
Surrogate Toluene-D8	%		136	106 98.2	103 104	109	95.1
Surrogate 4-Bromofluorobenzene	%		112	103 105	103 102	95.2	93.9

Analyte	Units	PQL	Blank			LCS %	Spike %
Surrogate Dibromofluoromethane	%					95.8	98.2
Surrogate Toluene-D8	%					112	99.4
Surrogate 4-Bromofluorobenzene	%					72.5	99.2

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-023_F1_TOT | Volatile TRH and BTEX (Water) | Batch BGG0139

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %	Spike %
				BGG0139-DUP1# Samp QC RPD %	BGG0139-DUP2# Samp QC RPD %		
TRH C6-C9	µg/L	10	<10	<10 <10 [NA]	<10 <10 [NA]	118	124
TRH C6-C10	µg/L	10	<10	<10 <10 [NA]	<10 <10 [NA]	115	123
Methyl tert butyl ether (MTBE)	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
Benzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	100	115
Toluene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	113	118
Ethylbenzene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	104	123
meta+para Xylene	µg/L	2.0	<2.0	<2.0 <2.0 [NA]	<2.0 <2.0 [NA]	81.3	122
ortho-Xylene	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	80.2	129
Naphthalene (value used in F2 calc)	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	<1.0 <1.0 [NA]	[NA]	[NA]
Surrogate Dibromofluoromethane	%		139	107 / 103	107 / 108	95.8	98.2
Surrogate Toluene-D8	%		136	106 / 98.2	103 / 104	112	99.4
Surrogate 4-Bromofluorobenzene	%		112	103 / 105	103 / 102	72.5	99.2

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-020 | Semi-volatile TRH (Water) | Batch BGG0260

Analyte	Units	PQL	Blank	DUP1	LCS %	Spike %
				BGG0260-DUP1# Samp QC RPD %		
TRH C10-C14	µg/L	50	<50	<50 <50 [NA]	110	##[1]
TRH C15-C28	µg/L	100	<100	<100 <100 [NA]	97.9	70.6
TRH C29-C36	µg/L	100	<100	<100 <100 [NA]	98.5	94.1
TRH >C10-C16	µg/L	50	<50	<50 <50 [NA]	88.5	##[1]
TRH >C16-C34 (F3)	µg/L	100	<100	<100 <100 [NA]	101	73.4
TRH >C34-C40 (F4)	µg/L	100	<100	<100 <100 [NA]	96.6	##[1]
Surrogate o-Terphenyl	%		73.0	84.0 / 70.6	94.6	80.6

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control MGG0018

ORG-022_PAH | Polycyclic Aromatic Hydrocarbons (Water) | Batch BGG0260

Analyte	Units	PQL	Blank	DUP1	LCS %	Spike %
				BGG0260-DUP1#		
				Samp QC RPD %		
Naphthalene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	62.9	82.3
Acenaphthylene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	[NA]	[NA]
Acenaphthene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	67.6	89.9
Fluorene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	69.8	94.0
Phenanthrene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	79.3	94.4
Anthracene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	[NA]	[NA]
Fluoranthene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	86.2	103
Pyrene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	90.9	110
Benzo(a)anthracene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	[NA]	[NA]
Chrysene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	77.3	90.4
Benzo(b,j,k)fluoranthene	µg/L	0.20	<0.20	<0.20 <0.20 [NA]	[NA]	[NA]
Benzo(a)pyrene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	90.0	91.9
Indeno(1,2,3-c,d)pyrene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	[NA]	[NA]
Dibenzo(a,h)anthracene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	[NA]	[NA]
Benzo(g,h,i)perylene	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	[NA]	[NA]
Surrogate p-Terphenyl-D14	%		82.5	104 / 99.9	92.5	112

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

METALS-022 | Dissolved Low Level Metals (Water) | Batch BGG0105

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %	Spike %
				BGG0105-DUP1#	BGG0105-DUP2#		
				Samp QC RPD %	Samp QC RPD %		
Arsenic	µg/L	1.0	<1.0	244 232 5.04	<1.0 <1.0 [NA]	107	100
Cadmium	µg/L	0.10	<0.10	<0.10 <0.10 [NA]	<0.10 <0.10 [NA]	103	93.5
Chromium	µg/L	1.0	<1.0	1.84 1.85 [NA]	<1.0 <1.0 [NA]	107	94.9
Copper	µg/L	1.0	<1.0	2.20 2.13 [NA]	13.4 13.5 0.891	106	93.7
Lead	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	3.07 3.07 [NA]	108	93.5
Nickel	µg/L	1.0	<1.0	24.3 22.5 7.73	37.9 37.9 0.105	108	97.5
Zinc	µg/L	1.0	<1.0	<1.0 <1.0 [NA]	329 334 1.61	104	93.9

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

METALS-021 | Dissolved Low Level Metals (Water) | Batch BGG0374

Analyte	Units	PQL	Blank	DUP1	DUP2	LCS %	Spike %
				MGG0018-01	BGG0374-DUP2#		
				Samp QC RPD %	Samp QC RPD %		
Mercury	µg/L	0.050	<0.050	<0.050 <0.050 [NA]	<0.050 <0.050 [NA]	108	105

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control MGG0018

ORG-029 | PFAS Extended List - Trace Level (Water) | Batch BGG0241

Analyte	Units	PQL	Blank	LCS %
Perfluorobutanesulfonic acid (PFBS)	µg/L	0.00040	<0.00040	85.5
Perfluoropentanesulfonic acid (PFPeS)	µg/L	0.0010	<0.0010	88.6
Perfluorohexanesulfonic acid (PFHxS)	µg/L	0.00020	<0.00020	85.6
Perfluoroheptanesulfonic acid (PFHpS)	µg/L	0.0010	<0.0010	85.6
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.00020	<0.00020	88.7
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.0020	<0.0020	73.0
Perfluorobutanoic acid (PFBA)	µg/L	0.0020	<0.0020	89.4
Perfluoropentanoic acid (PFPeA)	µg/L	0.0020	<0.0020	101
Perfluorohexanoic acid (PFHxA)	µg/L	0.00040	<0.00040	82.6
Perfluoroheptanoic acid (PFHpA)	µg/L	0.00040	<0.00040	77.0
Perfluorooctanoic acid (PFOA)	µg/L	0.00020	<0.00020	80.4
Perfluorononanoic acid (PFNA)	µg/L	0.0010	<0.0010	73.1
Perfluorodecanoic acid (PFDA)	µg/L	0.0020	<0.0020	77.8
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.0020	<0.0020	90.7
Perfluorododecanoic acid (PFDoDA)	µg/L	0.0050	<0.0050	99.6
Perfluorotridecanoic acid (PFTriDA)	µg/L	0.010	<0.020	81.2
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.050	<0.10	90.9
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.0010	<0.0010	92.0
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/L	0.00040	<0.00040	93.2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.00040	<0.00040	90.0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.0020	<0.0020	70.6
Perfluorooctane sulfonamide (FOSA)	µg/L	0.010	<0.010	89.3
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.050	<0.050	129
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.10	<0.10	131
N-Methyl perfluorooctane sulfonamidoethanol	µg/L	0.050	<0.050	140
N-Ethyl perfluorooctane sulfonamidoethanol	µg/L	0.50	<0.50	126
N-Methyl perfluorooctane sulfonamidoacetic acid	µg/L	0.0020	<0.0020	88.4
N-Ethyl perfluorooctane sulfonamidoacetic acid	µg/L	0.0020	<0.0020	83.8
Surrogate 13C8 PFOS	%		100	98.5
Surrogate 13C2 PFOA	%		104	103
Extraction Internal Standard 13C3 PFBS	%		69.0	[NA]
Extraction Internal Standard 18O2 PFHxS	%		67.0	[NA]
Extraction Internal Standard 13C4 PFOS	%		64.0	[NA]
Extraction Internal Standard 13C4 PFBA	%		77.0	[NA]
Extraction Internal Standard 13C3 PFPeA	%		75.0	[NA]
Extraction Internal Standard 13C2 PFHxA	%		86.0	[NA]
Extraction Internal Standard 13C4 PFHpA	%		83.0	[NA]
Extraction Internal Standard 13C4 PFOA	%		85.0	[NA]
Extraction Internal Standard 13C5 PFNA	%		88.0	[NA]
Extraction Internal Standard 13C2 PFDA	%		85.0	[NA]
Extraction Internal Standard 13C2 PFUnDA	%		79.0	[NA]
Extraction Internal Standard 13C2 PFDoDA	%		64.0	[NA]
Extraction Internal Standard 13C2 PFTeDA	%		36.0 [2]	[NA]
Extraction Internal Standard 13C2 4:2FTS	%		189 [2]	[NA]
Extraction Internal Standard 13C2 6:2FTS	%		123	[NA]
Extraction Internal Standard 13C2 8:2FTS	%		169 [2]	[NA]
Extraction Internal Standard 13C8 FOSA	%		73.0	[NA]
Extraction Internal Standard d3 N MeFOSA	%		80.0	[NA]
Extraction Internal Standard d5 N EtFOSA	%		83.0	[NA]
Extraction Internal Standard d7 N MeFOSE	%		89.0	[NA]
Extraction Internal Standard d9 N EtFOSE	%		85.0	[NA]
Extraction Internal Standard d3 N MeFOSAA	%		119	[NA]
Extraction Internal Standard d5 N EtFOSAA	%		112	[NA]

Quality Control MGG0018

QC Comments

Identifier	Description
[1]	Spike recovery is outside routine acceptance criteria (60-140%), this may be due to suspected non-homogeneity and/or matrix interference effects. However, an acceptable recovery was achieved for the LCS.
[2]	For PFAS Extracted Internal Standards denoted with ## or being outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).



Appendix I: Report Explanatory Notes

Standard Sampling Procedure (SSP)

These protocols specify the basic procedures to be used when sampling soils or groundwater for environmental site assessments undertaken by JKE. The purpose of these protocols is to provide standard methods for: sampling, decontamination procedures for sampling equipment, sample preservation, sample storage and sample handling. Deviations from these procedures must be recorded.

A. Soil Sampling:

- Prepare a borehole/test pit log or made a note of the sample description for stockpiles.
- Layout sampling equipment on clean plastic sheeting to prevent direct contact with ground surface. The work area should be at a distance from the drill rig/excavator such that the machine can operate in a safe manner.
- Ensure all sampling equipment has been decontaminated prior to use.
- Remove any surface debris from the immediate area of the sampling location.
- Collect samples and place in appropriate sampling containers provided by the lab.
- Label the sampling containers with the JKE job number, sample location (eg. BH1), sampling depth interval and date. If more than one sample container is used, this should also be indicated (eg. 2 = Sample jar 1 of 2 jars).
- Record the lithology of the sample and sample depth on the borehole/test pit log generally in accordance with AS1726-1993¹⁸.
- Store the sample in a sample container cooled with ice. On completion of the sampling the sample container should be delivered to the lab immediately or stored in the refrigerator prior to delivery to the lab. All samples are preserved in accordance with the standards outlined in the report.
- Check for the presence of groundwater after completion of each borehole using an electronic dip metre or water whistle. Boreholes should be left open until the end of fieldwork. All groundwater levels in the boreholes should be rechecked on the completion of the fieldwork.
- Backfill the boreholes/test pits with the excavation cuttings or clean sand prior to leaving the site.

B. Groundwater Sampling

Groundwater samples are more sensitive than soil samples and therefore adherence to this protocol is particularly important to obtain reliable, reproducible results. The recommendations detailed in AS/NZS 5667.1:1998 are considered to form a minimum standard. The basis of this protocol is to maintain the security of the borehole and obtain accurate and representative groundwater samples. The following procedure should be used for collection of groundwater samples from previously installed groundwater monitoring wells.

- After monitoring well installation, at least three bore volumes should be pumped from the monitoring wells (well development) to remove any water introduced during the drilling process and/or the water that is disturbed during installation of the monitoring well. This should be completed prior to purging and sampling.
- Groundwater monitoring wells should then be left to recharge for at least three days before purging and sampling. Prior to purging or sampling, the condition of each well should be observed and any anomalies recorded on the field data sheets. The following information should be noted: the condition of the well, noting any signs of damage, tampering or complete destruction; the condition and operation of the well lock; the condition of the protective casing and the cement footing (raised or cracked); and, the presence of water between protective casing and well.
- Take the groundwater level from the collar of the piezometer/monitoring well using an electronic dip meter. The collar level should be taken (if required) during the site visit using a dumpy level and staff.

¹⁸ Standards Australia, (1993), *Geotechnical Site Investigations*. (AS1726-1993)

- Purging and sampling of piezometers/monitoring wells is done on the same site visit when using micro-purge (or other low flow) techniques.
- Layout and organize all equipment associated with groundwater sampling in a location where they will not interfere with the sampling procedure and will not pose a risk of contaminating samples. Equipment generally required includes:
 - Micropore filtration system or Stericup single-use filters (for heavy metals samples);
 - Filter paper for Micropore filtration system; Bucket with volume increments;
 - Sample containers: teflon bottles with 1 ml nitric acid, 75mL glass vials with 1 mL hydrochloric acid, 1 L amber glass bottles;
 - Bucket with volume increments;
 - Flow cell;
 - pH/EC/Eh/T meters;
 - Plastic drums used for transportation of purged water;
 - Esky and ice;
 - Nitrile gloves;
 - Distilled water (for cleaning);
 - Electronic dip meter;
 - MicroPurge pump pack and associated tubing; and
 - Groundwater sampling forms.
- If single-use stericup filtration is not used, clean the Micropore filtration system thoroughly with distilled water prior to use and between each sample. Filter paper should be changed between samples. 0.45um filter paper should be placed below the glass fibre filter paper in the filtration system.
- Ensure all non-disposable sampling equipment is decontaminated or that new disposable equipment is available prior to any work commencing at a new location. The procedure for decontamination of groundwater equipment is outlined at the end of this section.
- Disposable gloves should be used whenever samples are taken to protect the sampler and to assist in avoidance of contamination.
- Groundwater samples are obtained from the monitoring wells using low flow/micro-purge sampling equipment to reduce the disturbance of the water column and loss of volatiles.
- During pumping to purge the well, the pH, temperature, conductivity, dissolved oxygen, redox potential and groundwater levels are monitored (where possible) using calibrated field instruments to assess the development of steady state conditions. Steady state conditions are generally considered to have been achieved when the difference in the pH measurements was less than 0.2 units and the difference in conductivity was less than 10%.
- All measurements are recorded on specific data sheets.
- Once steady state conditions are considered to have been achieved, groundwater samples are obtained directly from the pump tubing and placed in appropriate glass bottles or plastic bottles.
- All samples are preserved in accordance with water sampling requirements detailed in the NEPM 2013 and placed in an insulated container with ice. Groundwater samples are preserved by immediate storage in an insulated sample container with ice as outlined in the report text.
- Record the sample on the appropriate log in accordance with AS1726:1993. At the end of each water sampling complete a chain of custody form.



Appendix J: Groundwater Field Records

Client:	Coronation Property	Job No.:	E372648
Project:	Proposed Mixed-use Development	Well No.:	mw2
Location:	46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW	Depth (m):	24.4m

WELL FINISH DETAILS

	Gatic Cover ☒	Standpipe ☐	Other (describe) ☐
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WELL DEVELOPMENT DETAILS	
1	2
3	4
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7	8
9	10
11	12
13	14
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67	68
69	70
71	72
73	74
75	76
77	78
79	80
81	82
83	84
85	86
87	88
89	90
91	92
93	94
95	96
97	98
99	100

Method:	Font Valve Pump	SWL - Before (m):	12.49m
Date:	7/5/25	Time - Before:	10.10am
Undertaken By:	VR	SWL - After (m):	23.53m
Total Vol. Removed:	Approx 50L	Time - After:	11.43am
PID Reading (ppm):	1.2		

Comments:

DEVELOPMENT MEASUREMENTS

[illegible]

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

YSI Used:

45:1

Pumped unbl effectively dry. Medium to High silt load

Tested By:	VR	Remarks: - Steady state conditions - Difference in the pH less than 0.2 units, difference in the conductivity less than 10% and SWL stable/not in drawdown - Minimum 3 monitoring well volumes purged, unless well purged until it is effectively dry
Date Tested:	7/5/25	
Checked By:	VB	
Date:	30.07.2025	

JK Environments



Client:	Coronation Property	Job No.:	E37264B
Project:	Proposed Mixed-use Development	Well No.:	MW4
Location:	46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW	Depth (m):	25m

WELL FINISH DETAILS

Gatic Cover ☒	Standpipe ☐	Other (describe) ☐
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WELL DEVELOPMENT DETAILS

Method:	Dev Pump / Foot Valve	SWL - Before (m):	6.31m
Date:	05/05/25	Time - Before:	9.50am
Undertaken By:	VR	SWL - After (m):	21.65m
Total Vol. Removed:	Approx 85L	Time - After:	12.27pm
PID Reading (ppm):	0.3		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	SWL	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
0.75L / Baile		19.2	8.03	273.2	6.69	129.0
5		19.2	8.39	252.2	7.25	86.0
10	10.62m	19.2	8.54	253.1	7.31	81.8
15		19.4	7.60	282.8	6.87	80.9
20	7.35m	19.7	6.63	340.1	5.74	52.9
25		19.3	0.86	364.3	5.42	79.9
30	10.44m	19.2	0.89	364.9	5.44	87.5
35		19.2	0.29	365.4	5.46	85.3
40		19.2	0.3	368.2	5.48	80.2
45		19.2	0.37	366.4	5.48	73.9
50		19.2	0.65	365.6	5.46	78.2
55		19.2	0.69	367.0	5.46	79.9
60		19.2	0.56	370.8	5.48	78.8
65		19.2	0.80	365.8	5.46	81.0
70		19.2	1.23	364.8	5.48	80.7
75		19.2	1.49	370.2	5.57	72.9
80	20.53m	19.2	1.52	377.7	5.59	72.1
85	21.65m	19.2	1.61	378.1	5.59	72.6
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100						

Comments: Odours (YES / NO) NAPL/PSH (YES / NO) Sheen (YES / NO) Steady State Achieved (YES / NO)

YSI Used:

YSI 1

High Silt load

Pumped until effectively dry, high silt load at base prevented further development.

Tested By:	VR	Remarks:
Date Tested:	05/05/25	- Steady state conditions - Difference in the pH less than 0.2 units, difference in the conductivity less than 10% and SWL stable/not in drawdown - Minimum 3 monitoring well volumes purged, unless well purged until it is effectively dry
Checked By:	VB	
Date:	30.07.2025	

$$25 - 6.31m = 18.69$$

$$\times 3 = 56.07$$

$$\times 3 = 168.21L$$

- Slow recharge

Switch to foot valve pump.

Client:	Coronation Property	Job No.:	E37264B
Project:	Proposed Mixed-use Development	Well No.:	mwl
Location:	46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW	Depth (m):	18.29m

WELL FINISH

☒	Gatic Cover		Standpipe		Other (describe)
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WELL PURGE DETAILS:

Method:	Micro Purge	SWL – Before:	12.70m
Date:	25/01/25	Time – Before:	12.03pm
Undertaken By:	VR	Total Vol Removed:	~77 litres
Pump Program No:	CPMU	PID (ppm):	0.2

PURGING / SAMPLING MEASUREMENTS	
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87	88
89	90
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93	94
95	96
97	98
99	100

[illegible]

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

Sampling Containers Used: 4 x glass amber, 4 x BTEX vials, 2 x HNO₃ plastic, 1 x H₂SO₄ plastic, 1 x unpreserved plastic, 1 x Sterile Jar.

YSI used:

YSI 1

Very Silty

$$WOLVP2 = \#3 + 2 \times PFAS.$$

1 x PFAS.

Tested By: VR

Date Tested: 25/6/25

Checked By: VB

Date: 30.07.25

Remarks:

Remarks:

- Steady state conditions

- Steady state conditions
- difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown

Tested By: <u>VO</u>	Remarks: - Steady state conditions - difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown
Date Tested: <u>25/6/15</u>	
Checked By: <u>VB</u>	
Date: <u>30.07.25</u>	

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO) Sampling Containers Used: 4x glass amber, 4x BTEX vials, 2 x HNO3 plastic, 1 x H2SO4 plastic, 1 x unpreserved plastic, 1x Sterile jar, 2x PP YSI used: 1x field filtered YSI 1 Slightly Silty	
Tested By: J VR Date Tested: 25/6/25 Checked By: VB Date: 30 07 25	Remarks: - Steady state conditions - difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown

Small bailer used due to obstruction approx. 12m down which prevented a standard bailer and micropurge from passing through.



PID FIELD CALIBRATION FORM

Client: Coronation Property			
Project: Proposed Mixed-use Development			
Location: 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW			
Job Number: E37264B			
PID			
Make: <u>RAE Systems</u>	Model: <u>PGM7350</u>	Unit: <u>PID2</u>	Date of last factory calibration: <u>21/01/25</u>
Date of calibration: <u>22/1/25</u>		Name of Calibrator: <u>VR</u>	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: <u>100.1</u> ppm		Error in measured reading: $\pm$ <u>0.1</u> ppm	
Measured reading Acceptable (Yes/No): <u>(Yes)</u>			
PID			
Make: <u>RAE Systems</u>	Model: <u>PGM7350</u>	Unit: <u>PID 2</u>	Date of last factory calibration: <u>21/01/25</u>
Date of calibration: <u>29/1/25</u>		Name of Calibrator: <u>VR</u>	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: <u>100.1</u> ppm		Error in measured reading: $\pm$ <u>0.1</u> ppm	
Measured reading Acceptable (Yes/No): <u>(Yes)</u>			
PID			
Make: <u>RAE Systems</u>	Model: <u>PGM7350</u>	Unit: <u>PID2</u>	Date of last factory calibration: <u>21/01/25</u>
Date of calibration: <u>11/5/25</u>		Name of Calibrator: <u>VR</u>	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: <u>100.1</u> ppm		Error in measured reading: $\pm$ <u>0.1</u> ppm	
Measured reading Acceptable (Yes/No): <u>(Yes)</u>			
PID			
Make: <u>RAE Systems</u>	Model: <u>PGM7350</u>	Unit: <u>PID2</u>	Date of last factory calibration: <u>21/01/25</u>
Date of calibration: <u>2/5/25</u>		Name of Calibrator: <u>VR</u>	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: <u>100.7</u> ppm		Error in measured reading: $\pm$ <u>0.7</u> ppm	
Measured reading Acceptable (Yes/No): <u>(Yes)</u>			
PID			
Make: <u>RAE Systems</u>	Model: <u>PGM7350</u>	Unit: <u>PID2</u>	Date of last factory calibration: <u>21/01/25</u>
Date of calibration: <u>5/5/25</u>		Name of Calibrator: <u>VR</u>	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: <u>100.2</u> ppm		Error in measured reading: $\pm$ <u>0.2</u> ppm	
Measured reading Acceptable (Yes/No): <u>(Yes)</u>			



PID FIELD CALIBRATION FORM

Client: Coronation Property			
Project: Proposed Mixed-use Development			
Location: 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW			
Job Number: E37264B			
PID			
Make: <u>EAE Systems</u>	Model: <u>PGM 7350</u>	Unit: <u>PID2</u>	Date of last factory calibration: <u>21/01/25</u>
Date of calibration: <u>6/5/25</u>		Name of Calibrator: <u>VR</u>	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: <u>100.3</u> ppm		Error in measured reading: $\pm$ <u>0.3</u> ppm	
Measured reading Acceptable (Yes/No): <u>(Yes)</u>			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: $\pm$ ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: $\pm$ ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: $\pm$ ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: $\pm$ ppm	
Measured reading Acceptable (Yes/No):			



PID FIELD CALIBRATION FORM

Client: Coronation Property			
Project: Proposed Mixed-use Development			
Location: 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW			
Job Number: E37264B			
PID			
Make: Mini RAE Lite +	Model: PGM7350	Unit: PID 2	Date of last factory calibration: 21/01/2025
Date of calibration: 24/04/2025		Name of Calibrator: VV2	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 98.9 ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			



WATER QUALITY METER CALIBRATION FORM

Client: Coronation Property		
Project: Proposed Mixed-use Development		
Location: 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW		
Job Number: E37264B		
DISSOLVED OXYGEN		
Make: YSI	Model: YSI 1	
Date of calibration: 01/05/25	Name of Calibrator: VR	
Span value: 70% to 130%		
Measured value: 88.1		
Measured reading Acceptable (Yes/No):		
pH		
Make: YSI	Model: YSI 9	
Date of calibration: 01/05/25	Name of Calibrator: VR	
Buffer 1: Theoretical pH = 7.01 ± 0.01	Expiry date: 10/25	Lot No: DH130924
Buffer 2: Theoretical pH = 4.01 ± 0.01	Expiry date: 10/25	Lot No: CE150824
Measured reading of Buffer 1: 6.99		
Measured reading of Buffer 2: 3.99		
Slope: ✓	Measured reading Acceptable (Yes/No):	
EC		
Make: YSI	Model: YSI 1	
Date: 01/05/25	Name of Calibrator: VR	Temperature: 18 °C
Calibration solution: Rowe Scientific	Expiry date: 09/25	Lot No: CB130824
Theoretical conductivity at temperature (see solution container): 1224 µS/cm		
Measured conductivity: 1221 µS/cm	Measured reading Acceptable (Yes/No):	
REDOX		
Make: YSI	Model: YSI 1	
Date of calibration: 01/05/25	Name of Calibrator: VR	
Calibration solution: Hanna ORP	Expiry date: 09/25	Lot No: 0675
Theoretical redox value: 240mV		
Measured redox reading: 241 mV	Measured reading Acceptable (Yes/No):	



WATER QUALITY METER CALIBRATION FORM

Client: Coronation Property		
Project: Proposed Mixed-use Development		
Location: 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW		
Job Number: E37264B		
DISSOLVED OXYGEN		
Make: YSI	Model: YSI 1	
Date of calibration: 05/05/25	Name of Calibrator: VR	
Span value: 70% to 130%		
Measured value: 101%		
Measured reading Acceptable (Yes/No):		
pH		
Make: YSI	Model: YSI 1	
Date of calibration: 05/05/25	Name of Calibrator: VR	
Buffer 1: Theoretical pH = 7.01 ± 0.01	Expiry date: 10/25	Lot No: DH130924
Buffer 2: Theoretical pH = 4.01 ± 0.01	Expiry date: 10/25	Lot No: CE150824
Measured reading of Buffer 1: 6.99		
Measured reading of Buffer 2: 3.98		
Slope: NA	Measured reading Acceptable (Yes/No):	
EC		
Make: YSI	Model: YSI 1	
Date: 05/05/25	Name of Calibrator: VR	Temperature: 19 °C
Calibration solution: Rowe Scientific	Expiry date: 09/25	Lot No: CB130824
Theoretical conductivity at temperature (see solution container): 1251 µS/cm		
Measured conductivity: 1252 µS/cm	Measured reading Acceptable (Yes/No):	
REDOX		
Make: YSI	Model: YSI 1	
Date of calibration: 05/05/25	Name of Calibrator: VR	
Calibration solution: Hanna 240 ORP	Expiry date: 09/25	Lot No: 0675
Theoretical redox value: 240mV		
Measured redox reading: 242.1 mV	Measured reading Acceptable (Yes/No):	



WATER QUALITY METER CALIBRATION FORM

Client: Coronation Property		
Project: Proposed Mixed-use Development		
Location: 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW		
Job Number: E37264B		
DISSOLVED OXYGEN		
Make: YSI	Model: YSI 1	
Date of calibration: 7/5/25	Name of Calibrator: VR	
Span value: 70% to 130%		
Measured value: 95%		
Measured reading Acceptable (Yes/No): ☒ Yes ☐ No		
pH		
Make: YSI	Model: YSI 1	
Date of calibration: 7/5/25	Name of Calibrator: VR	
Buffer 1: Theoretical pH = 7.01 ± 0.01	Expiry date: 10/25	Lot No: DH130924
Buffer 2: Theoretical pH = 4.01 ± 0.01	Expiry date: 10/25	Lot No: CE150824
Measured reading of Buffer 1: 7.00		
Measured reading of Buffer 2: 3.98		
Slope: NA	Measured reading Acceptable (Yes/No): ☒ Yes ☐ No	
EC		
Make: YSI	Model: YSI 1	
Date: 7/5/25	Name of Calibrator: VR	Temperature: 20 °C
Calibration solution: Rowe Scientific	Expiry date: 09/25	Lot No: CB130824
Theoretical conductivity at temperature (see solution container): 1278 µS/cm		
Measured conductivity: 1271 µS/cm	Measured reading Acceptable (Yes/No): ☒ Yes ☐ No	
REDOX		
Make: YSI	Model: YSI 1	
Date of calibration: 7/5/25	Name of Calibrator: VR	
Calibration solution: Hanna 240 ORP	Expiry date: 11/25	Lot No: 0567
Theoretical redox value: 240mV		
Measured redox reading: 242.2 mV	Measured reading Acceptable (Yes/No): ☒ Yes ☐ No	



WATER QUALITY METER CALIBRATION FORM

Client: Coronation Property			
Project: Proposed Mixed-use Development			
Location: 46-52 Nicholson Street and 59-67 Christie Street, St Leonards, NSW			
Job Number: E37264B			
DISSOLVED OXYGEN			
Make: YSI		Model: YSI 1	
Date of calibration: 24/6/25		Name of Calibrator: VM	
Span value: 70% to 130%			
Measured value: 99.1%			
Measured reading Acceptable (Yes/No): ☒ Yes			
pH			
Make: YSI		Model: YSI 1	
Date of calibration: 24/6/25		Name of Calibrator: VM	
Buffer 1: Theoretical pH = 7.01 ± 0.01		Expiry date: 01/26	Lot No: CC291024
Buffer 2: Theoretical pH = 4.01 ± 0.01		Expiry date: 08/25	Lot No: CE150824
Measured reading of Buffer 1: 6.99			
Measured reading of Buffer 2: 3.98			
Slope:		Measured reading Acceptable (Yes/No): ☒ Yes	
EC			
Make: YSI		Model: YSI 1	
Date: 24/6/25	Name of Calibrator: VM		Temperature: 18 °C
Calibration solution: Rowe Scientific		Expiry date: 12/25	Lot No: CW161024
Theoretical conductivity at temperature (see solution container): 1224 µS/cm			
Measured conductivity: 1224 µS/cm		Measured reading Acceptable (Yes/No): ☒ Yes	
REDOX			
Make: YSI		Model: YSI 1	
Date of calibration: 24/6/25		Name of Calibrator: VM	
Calibration solution: Hanna ORP		Expiry date: 12/25	Lot No: 0675
Theoretical redox value: 240mV			
Measured redox reading: 240.4 mV		Measured reading Acceptable (Yes/No): ☒ Yes	