PRELIMINARY AND DETAILED SITE CONTAMINATION INVESTIGATION

PROPOSED SENIORS LIVING DEVELOPMENT
669 - 683 OLD SOUTH HEAD ROAD, VAUCLUSE NSW

PREPARED FOR OSHR AT VAUCLUSE HOLDINGS PTY LTD
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EXECUTIVE SUMMARY

GEE was commissioned by OSHR at Vaucluse Holdings Pty Ltd to undertake a preliminary and detailed site contamination investigation for 669 - 683 Old South Head Road, Vaucluse NSW 2030 (herein referred to as the 'site' – **Figure 1**). A survey plan showing existing site features in provided in **Appendix A**. The site covers an approximate area of approximately 4,350m^2 and encompasses the following legal allotments:

- Lots A and B in Deposited Plan (DP) 324744
- Lot 2 in DP 10314
- Lot 1 in DP 169310
- Lot 4 in DP 192614
- Lot 1 in DP 168877
- Lot 1 in DP 167942
- Lot 1 in DP 666626
- Lot 2 in DP 316716

The investigation relates to the proposed construction of a multi-storey seniors living development and was required to support a Development Application with Waverley Council and to address the requirements of *State Environmental Planning Policy (Resilience and Hazards)* (reference 1) by determining the suitability of the site for the proposed land-use and possible constraints on the proposed development.

The investigation comprised a:

- A review of the history of the site and surrounding land, including historical land titles and historical aerial photographs,
- A review of the environmental and physical setting in which the site lies, including geology, hydrogeology and topography,
- A detailed site inspection for potential sources of contamination,
- Preparation of an initial Conceptual Site Model (CSM) including a summary of the potential sources of contamination, areas of environmental concern (AEC) and chemicals of potential concern (CoPC),
- Field investigations including:



- The drilling of nineteen boreholes (BH301 to BH317 and BH401 and BH402) in accessible areas of the site and targeting areas of environmental concern, and
- Sampling of soil from the boreholes.

◊ Laboratory analysis of selected soil samples for a broad suite of potential contaminants, and

◊ Preparation of this report including the comparison of the laboratory analytical results against relevant NSW EPA endorsed guidelines.

The review of the site's history and the site inspection revealed evidence of some potential contaminating activities that may have resulted in site contamination. Specifically:

◊ Potential for fill material to be present and when sourced from an unknown origin, the quality of the fill not known and therefore may be contaminated, and

◊ Potential use of lead-based paints and asbestos containing materials (ACM) on the existing buildings and any renovations or maintenance work over the years, may have resulted in surrounding near surface soils being impacted with lead and/or ACM.

Based on observations made during the field investigations, the sampling and analysis program conducted at the site, the proposed land-use (i.e. residential with accessible soils) and with respect to relevant statutory guidelines, GEE conclude that the near surface topsoil / fill material across the site is sporadically contaminated with lead at concentrations greater than those permissible for the proposed land-use. The site, however, can be made suitable for the proposed land-use by undertaking standard and conventional remediation measures.

In accordance with State and local planning guidelines, a Remedial Action Plan (RAP) has been prepared and sets out the proposed remediation measures and the controls that are required to ensure that the site is made suitable for the proposed development and land-use. Once the contamination has been removed and disposed from the site in accordance with the RAP, a Validation Report will be prepared detailing the remediation methods undertaken, that they have been carried out in accordance with the requirements of the RAP and confirming that the site is suitable for the proposed land-use. GEE recommends that the remediation work and subsequent validation report be completed after demolition of the existing structures and prior to the Occupation Certificate being issued.

1 PROJECT INFORMATION

1.1 INTRODUCTION AND OBJECTIVES

Geo-Environmental Engineering Pty Ltd (GEE) was commissioned by OSHR at Vaucluse Holdings Pty Ltd to undertake a preliminary and detailed site contamination investigation for 669 - 683 Old South Head Road, Vaucluse NSW 2030 (herein referred to as the 'site'). A site location map is provided as **Figure 1**.

The site covers an approximate area of approximately 4,350m^2 and encompasses the following legal allotments:

- Lot A in Deposited Plan (DP) 324744
- Lot B in DP 324744
- Lot 2 in DP 10314
- Lot 1 in DP 169310
- Lot 4 in DP 192614
- Lot 1 in DP 168877
- Lot 1 in DP 167942
- Lot 1 in DP 666626
- Lot 2 in DP 316716

The investigation relates to the proposed construction of a multi-storey seniors living development with a two-level basement for parking and general storage. Preliminary architectural plans of the proposed development are provided for reference in **Appendix A** along with a survey plan showing existing site features. The investigation was required to support a Development Application with Waverley Council and to address the requirements of *State Environmental Planning Policy (Resilience and Hazards)* (reference 1) by determining the suitability of the site for the proposed land-use and possible constraints on the proposed development.

In this regard, GEE has completed a *Preliminary Site Investigation* (PSI) and a *Detailed Site Investigation* (DSI) in accordance with the NSW Environment Protection Authority (NSW EPA, 2020) in the *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (reference 2) and NEPM 1999 (revised 2013) Schedule B(2) *Guideline on Site Characterisation* (reference 3).

It is noted that much of this investigation work undertaken and described herein was completed in 2022 for a previous version of the senior's living development that encompassed 671 – 683 Old South Head Road, Vaucluse NSW and which was the subject of a former Development Application (DA-455/2021) that was approved by Waverley Council on the 18th October 2022. However, the developer has since acquired the adjoining and corner property of 669 Old South Head Road, and therefore the investigation and this report was expanded to include this new property / allotment.

1.2 PREVIOUS INVESTIGATIONS

GEE is not aware of any previous environmental site assessments that may have been conducted at the site. However, there have been two previous geotechnical investigations completed at the site or part thereof (see below). These investigations do not provide any specific contamination information, but they do provide useful information on the subsurface conditions across the site.

Crozier Geotechnical Consultants Investigation - 2018

Crozier Geotechnical Consultant completed a geotechnical investigation across part of the site (i.e. 669 – 679 Old South Head Road) in 2018 (reference 4) which included:

- ◊ The drilling of five auger boreholes along with the performance of Dynamic Penetrometer (DCP) testing to investigate the subsurface geology, depth to bedrock and identification of ground water conditions, and
- ◊ Detailed geotechnical mapping of the site and adjacent properties including photographic record of site conditions by an experienced Geotechnical Engineer.

GEE Geotechnical Report - 2021

In August 2021, GEE completed a geotechnical investigation at the site which related to the same proposed development at this preliminary contamination investigation (reference 5). The investigation comprised:

- ◊ The drilling and logging of two boreholes (BH201 and BH202) to better assess the subsurface conditions across the site,
- ◊ The performance of SPT and DCP tests at the borehole locations to assess the consistency and/or relative density of the soil profile.

A summary of the subsurface conditions, as observed in the GEE and crozier boreholes, is provided for reference in section 4.4.2 and 4.5.2, while the borehole logs

are provided in **Appendix B** and the approximate locations of the boreholes are shown on **Figure 2**.

1.3 PROPOSED DEVELOPMENT

The proposed development comprises the demolition of an existing low-density residential properties and the construction of a multi-storey seniors living development with a two-level basement for parking and general storage.

Based on the architectural plans, a copy of which is provided in **Appendix A**, excavation to a depth of between approximately 5.0m and 12.0m will be required for the proposed basement. The outline of the proposed basement level is shown on **Figure 2** along with a copy of the survey plan and **Figure 3** along with a recent aerial photograph.

1.4 SCOPE OF WORK

To achieve the above objectives, GEE completed the following scope of works:

- A review of the history of the site and surrounding land, including historical land titles and historical aerial photographs,
- A review of the environmental and physical setting in which the site lies, including geology, hydrogeology and topography,
- A detailed site inspection for potential sources of contamination,
- Preparation of an initial Conceptual Site Model (CSM) including a summary of the potential sources of contamination, areas of environmental concern (AEC) and chemicals of potential concern (CoPC),
- Field investigations including the drilling of boreholes across the site with particular focus on areas of environmental concern,
- The collection of soil samples at regular intervals from each of the boreholes,
- Laboratory analysis of selected soil samples for a broad suite of potential contaminants, and
- Preparation of this report including the comparison of the laboratory analytical results against relevant NSW Environment Protection Authority (EPA) endorsed guidelines.

2 SITE IDENTIFICATION

A summary of the site identification details is provided below, while a site location map is provided as **Figure 1**:

Street Address:	669 - 683 Old South Head Road, Vaucluse NSW 2030
Legal Description:	Lot B and C in Deposited Plan (DP) 324744, Lot 2 in DP 10314, Lot 1 in DP 169310, Lot 4 in DP 192614, Lot 1 in DP 168877, Lot 1 in DP 167942, Lot 1 in DP 666626, Lot 2 in DP316716, Lot 1 of Section 2 in Deposited Plan (DP) 340
Coordinates (MGA 56):	340790 mE, 6251580 mN
Local Government Area:	Waverley Council
Site Area:	Approximately 4,350m^2
Current Zoning:	E1 – Local Centre and R3 – Medium Density Residential [1]
Current Use:	Residential and Retail
Proposed Zoning:	E1 – Local Centre and R3 – Medium Density Residential
Proposed Use:	Residential (Seniors Living)

[1] Waverley Local Environmental Plan 2022.

3 SITE HISTORY

The history of the site was researched to provide an understanding of past and present site activities which in turn may indicate sources and areas of potential contamination.

Information obtained and reviewed included:

- ◊ Historical aerial photographs dating back to 1930, as supplied by the NSW Land and Property Information, or online sources such as Google Earth, and obtained by Lotsearch Pty Ltd.
- ◊ Historical title information obtained from InfoTrack.
- ◊ Available business directory records from between 1950 and 1991 which is provided in the Lotsearch Report.
- ◊ An internet search for any relevant historical information about the site.
- ◊ Council records of past development applications and approvals.
- ◊ A search of the contaminated land database, which is available on the NSW EPA website, was conducted which reveals if there have been any records of written notices issued on the site by EPA under the Contaminated Land Management Act 1997 (CLM Act), including preliminary investigation orders. Additionally, the search can reveal if the site has ever been notified to the EPA under Section 60 duty to report contaminated sites, of the CLM Act.
- ◊ A search of records under the PFAS investigation program.
- ◊ A search of the NSW EPA Protection of the Environment Act public register of licences, applications and notices that are maintained under Section 308 of the Protection of the Environment Operations (POEO) Act 1997.
- ◊ A search of local and state heritage registers.

3.1 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs were examined for the years 1930, 1943, 1951, 1955, 1961, 1965, 1970, 1978, 1982, 1986, 1991, 1994, 2000, 2005, 2011, 2016 and 2021. A description of the site and surrounding development as depicted in each photograph is provided below, while a copy of the aerial photography is provided in the Lotsearch report in **Appendix C**:

Year	**Site**	**Surrounding Land**
1930	Note: This photograph is not particularly clear, but an attempt has been made to make out structures on the site. *No. 669* The existing shop/dwelling and detached garage appears to be present. *No. 671* The original part of the existing house is present, along with the existing garage in the rear north-eastern corner. The shed shown in the rear yard of the 1943 photo is possibly present. *No. 673* The original part of the existing house is present, along with the existing garage along the northern boundary. *No. 675* The original part of the existing house is present, along with a detached garage in the front, north-western corner. *No. 677* The original part of the existing house is present, along with a detached garage at the rear and along the northern boundary. *No. 679* The original part of the existing house is present, along with two attached sheds in the rear yard (fibro). *No. 681* The original part of the existing house is present, along with a shed midway along the northern boundary. *No. 683*	Surrounding streets are formed, and the surrounding land is developed with predominately low-density residential properties.

	The original part of the existing house is present, along with a shed midway along the northern boundary.	
1943	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* No significant changes.	No significant changes.
1951	*No. 669* No significant changes. *No. 671* Veranda added to the rear of the house. And small shed that was in the rear yard has been demolished. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes.	No significant changes.

	No. 679 No significant changes. *No. 681* No significant changes. *No. 683* A small shed was added to the centre of the rear yard.	
1955/56	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* There was an addition to the rear of the house. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* New addition to the rear of the original dwelling and the shed that was recently added to the middle of the rear yard has been cleared.	No significant changes.
1961	*No. 669* No significant changes. *No. 671* No significant changes.	No significant changes.

	No. 673 No significant changes. *No. 675* The detached garage in the north-eastern corner was extended at the rear. *No. 677* No significant changes. *No. 679* There appears to be additions to the rear of the dwelling and southern side. *No. 681* Small structure (likely shed) that was midway along the northern boundary has been cleared/demolished. *No. 683* No significant changes.	
1965	*No. 669* No significant changes. *No. 671* The rear of the house has been extended and a new garage added to the rear south-eastern corner. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* House was extended at the front. *No. 683*	No significant changes.

	No significant changes.	
1970	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* No significant changes.	Former low density residential property to the east has been redeveloped into a residential unit building.
1978	*No. 669* No significant changes. *No. 671* Existing metal carport added to the south-eastern corner. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679*	No significant changes.

	A shed (or similar) structure was added to the rear yard. *No. 681* No significant changes. *No. 683* A small shed in the rear yard was demolished.	
1982	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* No significant changes.	No significant changes.
1986	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* Existing metal shed was added behind the garage. *No. 675*	No significant changes.

	No significant changes *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* No significant changes.	
1991	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* Existing metal carport was added on the northern side of the house. *No. 675* No significant changes. *No. 677* changes. *No. 681* Rear of the house extended. *No. 683* No significant changes.	No significant changes.
1994	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* No significant changes.	No significant changes.

	No. 675 No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* No significant changes.	
2000	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* No significant changes. *No. 675* There has been significant alterations and additions to the original house changes. The garage in the rear, north-east corner has been demolished. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* No significant changes.	No significant changes.
2005	*No. 669* No significant changes.	No significant changes.

	No. 671 No significant changes. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* No significant changes.	
2011	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* In-ground Pool added to the rear yard. *No. 679* One of the sheds in the rear yard was demolished. *No. 681* No significant changes. *No. 683* No significant changes.	No significant changes.

2016	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681* No significant changes. *No. 683* New addition to the rear south-eastern corner of the house.	No significant changes.
2021	*No. 669* No significant changes. *No. 671* No significant changes. *No. 673* No significant changes. *No. 675* No significant changes. *No. 677* No significant changes. *No. 679* No significant changes. *No. 681*	No significant changes.

	No significant changes. *No. 683* No significant changes.	

A summary of the changes observed in the aerial photographs for each allotment is provided below and shown in **Figure 4a** for No. 669 – 677 Old South Head Road and **Figure 4b** for 679 – 683 Old South Head Road.

No. 669
The existing corner shop and dwelling with detached garage was built pre-1930 with only minor alterations and/or additions observed.

No. 671
The existing brick house was built pre-1930 with additions to the rear occurring between 1961 and 1965. The existing brick building in the rear, north-eastern corner was also constructed pre-1930, while the adjoining garage was constructed between 1961 and 1965 when the house was extended. The existing metal carport located in the rear, south-eastern corner was added between 1970 and 1978. Finally, there was a former structure (likely a shed) in the rear, south-eastern part of the site which was built pre-1930 and demolished in the early 1950s.

No. 673
The existing brick house was built pre-1930 along with the existing fibro garage to the north-east of the house. The house was then extended towards the rear between 1951 and 1955. Between 1986 and 1991, an awning was added to the rear of the house and a metal carport along the northern side of the house.

No. 675
The existing brick house was built pre-1930 along with a garage to the north-east of the house. The house underwent a significant renovation between 1994 and 2000 which included additions on all sides. At the same time as this renovation, the former garage in the north-eastern part of the site was demolished.

No. 677
The existing brick house was built pre-1930 along with a garage in the front, north-western corner. Between 1986 and 1991, the garage was demolished, and the house



was extended towards the rear. Then the existing in-ground swimming pool was added to the rear yard between 2005 and 2011.

No. 679

The existing brick house was built pre-1930 along with two fibro sheds that still remain in the rear yard. The house was renovated between 1956 and 1961 and included additions to the rear, front and southern sides. Elsewhere, there appeared to be a shed (or similar structure) in the rear yard that was built in the 1970s and demolished in the early 2000s.

No. 681

The existing brick house was built pre-1930 along with a relatively small structure (likely a shed) in the rear yard and approximately midway along the northern boundary. The house was extended towards the front in the early 1960s and at the same time, the shed in the rear yard was demolished. Finally, in the late 1980s, the house was extended towards the rear.

No. 683

The existing brick house was built pre-1930 along with a relatively small structure (likely a shed) in the rear yard and adjacent to the southern boundary. Another small structure (likely a shed) was visible in the middle of the rear yard between the late 1940s to early 1950s. There were some additions to the rear of the original house in the 1950s and again in the mid-2010s.

On surrounding land there was no obvious evidence of contaminating activities with most of the surrounding land occupied by residential properties.

3.2 Historical Title Information

A copy of the historical title information dating back to the 1920s is provided for reference in **Appendix D**.

In summary, the site allotments (or part thereof) appear to have been formed by subdivision of a larger parcel of land in 1920. Since then, the allotments have predominately by various individuals which supports the historical aerial photographs which indicate occupation by low density residential properties.

A review of the past and present owners, including the occupations does not title records do not indicate any significantly contaminating activities.

3.3 BUSINESS DIRECTORY LISTINGS

A search of available business directory listings from 1950 to 1991 was completed by Lotsearch Pty Ltd (**Appendix C**) to assist with determining any past land-use activities, and in particular past land-use activities that may cause contamination.

On the site were the following listings:

Business Directory	Business Owner (Address)	Business Activity
669A and 669B Old South Head Road		
1982 - 1986	Roma Continental Cakes	Cake Shop
1986	Stems Florist	Florist
1986	Vaucluse Ocean Foods	Fish Shop
1982	RedRose	Florist
1982	Cons Fish Shop	Fish Shop
1975	Ian Studiose	Furniture Shop
1965 - 1975	E. C Minto	Cake Shop
1965 - 1975	Rose Bay North Fresh Fish and Poultry	Fish & Chicken Shop
1961 - 1970	Snowdrop Cakes	Cake Shop
1965	Rose Bay North Fruiterer	Fruiterer / Green Grocers
1950 - 1961	P. Giglio	Fruiterer / Green Grocers
1961	E Speerin	Fish Shop
1950	John Allens	Butchers
1950	E.C Carter	Fish Shop
1950	H. Flourskos	Fish Shop / Bait Dealer
1950	E. M Jones	Cake Shop
671 Old South Head Road		
1950	A. L. Ashby	Fruiterer / Green Grocers

673 Old South Head Road		
1950	The Elizabethan	Cake Shop / Pastry Cooks

Beyond the site there were 36 locations/properties within 100m of the site that had business listings. Of these, the only listings of any significance were as follows:

Business Name	Dates Listed	Business Activity	Address and Distance From the Site
Joan & John	1982 – 1986	Dry Cleaners	667A Old South Head Road (20m South)
Astra Dry Cleaners	1948 - 1950	Dry Cleaners	24 Old South Head Road (21m South West)
Vaucluse Laundromat / Rose Bay Laundromat	1982 - 1986	Dry Cleaners	16 Old South Head Road (32m South-West)
Rose Bay North Laundromat	1986	Dry Cleaners	667 Old South Head Road (27m South)
Capri Dry Cleaners	1975 - 1986	Dry Cleaners	663 Old South Head Road (47m South)
Express Dry Cleaners	1970	Dry Cleaners	661 Old South Head Road (59m South)
R. N. Carlisle	1950 - 1978	Motor Garage and/or Service Station	44 Dudley Street (93m South West)

Each of the above businesses have the potential to cause chemical contamination beyond their boundaries via groundwater migration. However, they are all located down-slope of the site which suggests that any contamination in the groundwater will not impact the site.

3.4 INTERNET SEARCH

GEE completed a search of historical information relating to the site, but no relevant information was obtained.

3.5 COUNCIL RECORDS

GEE performed an online search on the Council website about past development applications and approvals relating to the site which can provide an indication of past land-use activities. Apart from applications relating to alterations and additions to the existing dwellings, there was no relevant information available.

3.6 CONTAMINATED LAND DATABASE

A search of the contaminated land database was conducted by Lotsearch Pty Ltd (**Appendix C**) and revealed there has been no record of written notices issued on the site, by the EPA, under the Contaminated Land Management Act 1997 (CLM Act), including preliminary investigation orders. Additionally, the site has never been notified to the EPA under Section 60 duty to report contaminated sites, of the CLM Act.

Additionally, there were no properties within 1km of the site which have been notified to the NSW EPA under Section 60 of the CLM Act or had contamination notices issued on them by the EPA.

3.7 EPA PFAS INVESTIGATION PROGRAM

A search of sites that are part of the EPA PFAS investigation program was completed by Lotsearch (**Appendix C**) and it revealed no records within 1km of the site.

3.8 POEO REGISTER SEARCH

A search of the NSW EPA Protection of the Environment Act public register of licence, applications and notices was undertaken which contains information on:

- ◊ environment protection licences.
- ◊ applications for new licences and to transfer or vary existing licences.
- ◊ environment protection and noise control notices.
- ◊ penalty notices issued by the EPA.
- ◊ convictions in prosecutions under the POEO Act.
- ◊ the results of civil proceedings.
- ◊ licence review information.
- ◊ exemptions from the provisions of the POEO Act or regulations.
- ◊ approvals granted under clause 9 of the POEO (Control of Burning) Regulation.
- ◊ approvals granted under clause 7A of the POEO (Clean Air) Regulation.



- ◊ any mandatory audits required to be undertaken in relation to a licence.
- ◊ each pollution study required by a condition of a licence.
- ◊ each pollution reduction program required by a condition of a licence; and
- ◊ each penalty notice issued in relation to a premises.

The search did not identify any relevant records within close proximity to the site.

3.9 HERITAGE REGISTERS

A search of commonwealth, state and local heritage registers was completed by Lotsearch (**Appendix C**) and the search found no heritage items associated with the site.

3.10 SUMMARY OF THE HISTORICAL INFORMATION

3.10.1 The Site

Based on a review of the historical information, the allotments which make up the site were formed by subdivision in the 1920s, and the existing dwellings (or part thereof) were likely constructed soon thereafter. Following initial development of the site, a number of alterations and additions have occurred which are summarised below and shown in **Figure 4a** for No. 669 – 677 Old South Head Road and **Figure 4b** for 679 – 683 Old South Head Road.

- ◊ No. 669
  The existing corner shop and dwelling with detached garage was built pre-1930 with only minor alterations and/or additions observed.
- ◊ No. 671
  The existing brick house was built pre-1930 with additions to the rear occurring between 1961 and 1965. The existing brick building in the rear, north-eastern corner was also constructed pre-1930, while the adjoining garage was constructed between 1961 and 1965 when the house was extended. The existing metal carport located in the rear, south-eastern corner was added between 1970 and 1978. Finally, there was a former structure (likely a shed) in the rear, south-eastern part of the site which was built pre-1930 and demolished in the early 1950s.

- No. 673
  The existing brick house was built pre-1930 along with the existing fibro garage to the north-east of the house. The house was then extended towards the rear between 1951 and 1955. Between 1986 and 1991, an awning was added to the rear of the house and a metal carport along the northern side of the house.
- No. 675
  The existing brick house was built pre-1930 along with a garage to the north-east of the house. The house underwent a significant renovation between 1994 and 2000 which included additions on all sides. At the same time as this renovation, the former garage in the north-eastern part of the site was demolished.
- No. 677
  The existing brick house was built pre-1930 along with a garage in the front, north-western corner. Between 1986 and 1991, the garage was demolished, and the house was extended towards the rear. Then the existing in-ground swimming pool was added to the rear yard between 2005 and 2011.
- No. 679
  The existing brick house was built pre-1930 along with two fibro sheds that still remain in the rear yard. The house was renovated between 1956 and 1961 and included additions to the rear, front and southern sides. Elsewhere, there appeared to be a shed (or similar structure) in the rear yard that was built in the 1970s and demolished in the early 2000s.
- No. 681
  The existing brick house was built pre-1930 along with a relatively small structure (likely a shed) in the rear yard and approximately midway along the northern boundary. The house was extended towards the front in the early 1960s and at the same time, the shed in the rear yard was demolished. Finally, in the late 1980s, the house was extended towards the rear.
- No. 683
  The existing brick house was built pre-1930 along with a relatively small structure (likely a shed) in the rear yard and adjacent to the southern boundary. Another small structure (likely a shed) was visible in the middle of the rear yard between the late 1940s to early 1950s. There were some additions to the rear of the original house in the 1950s and again in the mid-2010s.

The past and current land-use activities are relatively benign from a site contamination perspective. However, some existing structures on the site, and potentially some of

the former structures, have likely included the use of Asbestos Containing Materials (ACM). Furthermore, the age of the original buildings suggests that lead-based paints may have been used. Therefore, any maintenance work over the years may have resulted in elevated lead concentrations, and ACM contamination, in near surface soils surrounding the buildings.

3.10.2 Surrounding Land

Surrounding land and land-use activities have the potential to cause contamination of the site via groundwater or surface water migration. The historical information determined that there have been, or are, some dry cleaners and a petrol station located within 100m of the site with both of these business types commonly associated with land contamination. However, they are all located down-slope of the site which suggests that any contamination in the groundwater will not impact the site.

4 SITE CONDITION AND SURROUNDING ENVIRONMENT

This section of the report provides a detailed description of the physical and environmental setting of the site, including a description of the site and the presence of any visible signs of contamination.

4.1 SITE DESCRIPTION

The site is an irregular parcel of land situated on the eastern side Old South Head Road. At the time of this investigation the site comprised seven residential properties, each containing a house with associated gardens/access pathways, sheds/outbuildings, paved areas and scattered trees. Importantly, an inspection of the surface of the site revealed no adverse staining, odour or obvious Asbestos Containing Material (ACM).

A description of each property is provided below, while photographs of the site are provided for reference in Plates 1 to 14:

669 Old South Head Road (Lot A DP 324744)

This property was occupied by a one and two-storey brick mixed use building, with a fish and party shop on the ground floor that is accessed off Old South Head Road, and the remainder of the building was used for residential purposes. The rear yard of the site was separated from the shopfronts and dedicated to the residents living in the rear portion of the building. This rear yard consisted of a partially retained lawn, some garden beds with paved paths and a double car brick garage in the south-eastern corner. Behind the fish shop and beside the building to the south was a fenced off courtyard that was paved with concrete and used as a storage area.

671 Old South Head Road (Lot B DP 324744 & Lot 2 DP 10314)

Lot 2 of this property was occupied by a 2-storey rendered brick house. At the front and rear of the house were yards comprised lawns, concrete pathways and garden beds. At the rear boundary was a brick shed and a metal clad garage which is accessed via a driveway (Lot B) off Ocean View Avenue to the south. The garage and driveway were sealed by a concrete floor slab.

673 Old South Head Road (Lot 1 DP 169310)

This property was occupied by a single storey brick house located centrally. Attached to the north-eastern corner of the house was a fibro clad garage and a metal carport which is accessed via a concrete driveway along the northern boundary. A metal garden shed with a concrete floor was immediately to the east of the garage and the remainder of the property comprised lawns with some garden beds.

675 Old South Head Road (Lot B DP 324744 & Lot 2 DP 10314)

This property was occupied by a one and two storey brick house located centrally. The remainder of the property comprised lawns, some tiled surfaces and some garden beds at the perimeter. Vehicle access to the site is via a brick paved driveway in the north-western corner which is connected to an internal double garage.

677 Old South Head Road (Lot B DP 324744 & Lot 2 DP 10314)

This property was occupied by a one and two storey brick house located centrally. At the rear was a tiled alfresco area connected to an in-ground swimming pool in the south-eastern corner. A concrete driveway was in the north-western corner which is connected to an internal single car garage. The remainder of the property comprised lawns with some garden beds.

679 Old South Head Road (Lot B DP 324744 & Lot 2 DP 10314)

This property was occupied by a single storey, rendered brick house located centrally. At the front of the house was a concrete and brick paved driveway which connected to a metal clad carport on the south-western corner of the house. At the rear of the property were two detached fibro sheds while the remainder of the property comprised lawns with some garden beds.

681 Old South Head Road (Lot B DP 324744 & Lot 2 DP 10314)

This property was occupied by a single storey, rendered brick house located centrally. In the front, north-western corner was a tiled driveway connected to an internal garage. The remainder of the property comprised lawns with some garden beds.

683 Old South Head Road (Lot B DP 324744 & Lot 2 DP 10314)

This property was occupied by a one and two storey, brick house located centrally. In the front, north-western corner was a concrete driveway connected to an internal garage. The remainder of the property comprised lawns with some garden beds.



Plate 1: Rear yard of No. 669 Old South Head Road



Plate 2: Rear Yard of No. 669 South Head Road

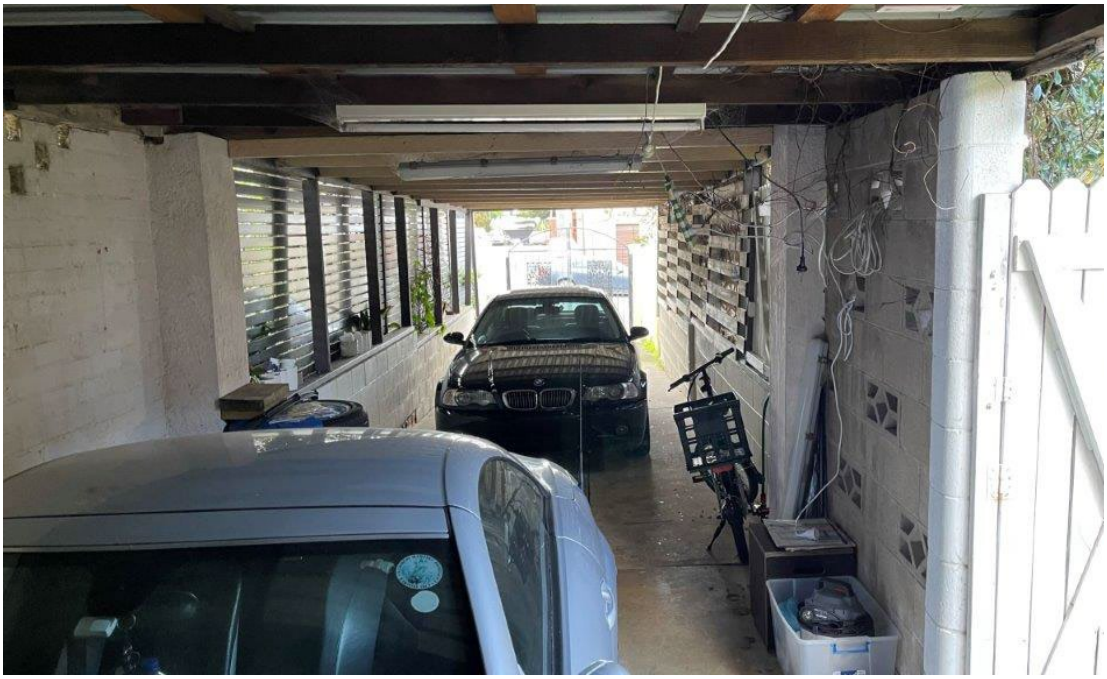


Plate 3: Driveway at the rear of No. 671 Old South Head Road



Plate 4: Rear Yard of No. 671 South Head Road



Plate 5: Front of No. 673 South Head Road



Plate 6: Rear Yard of No. 673 South Head Road

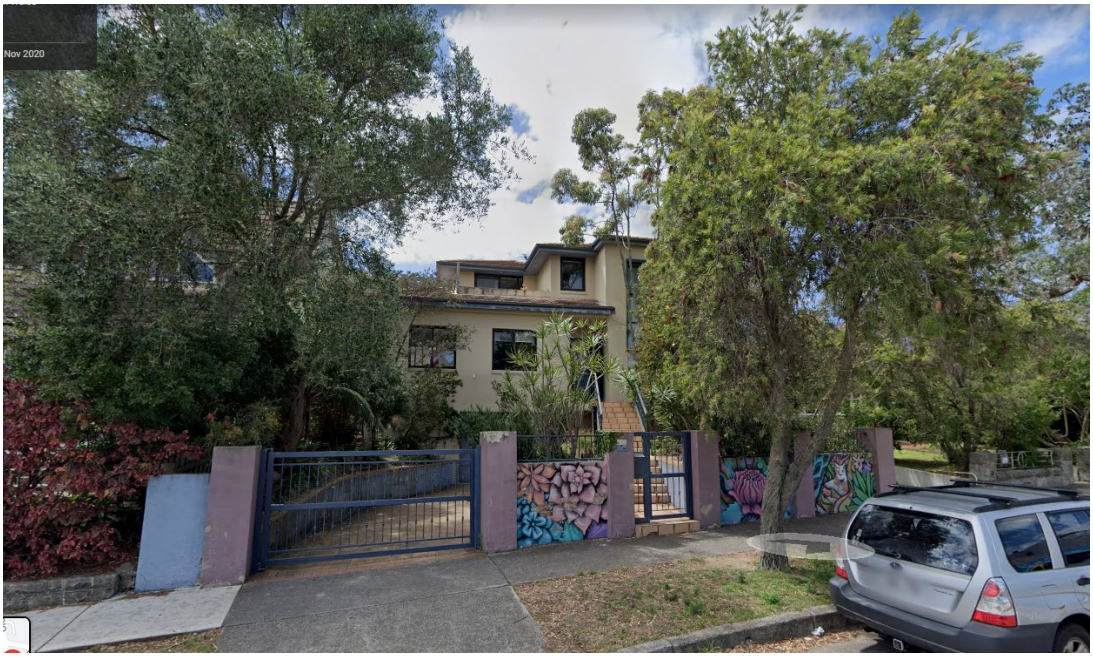


Plate 7: Front of No. 675 Old South Head Road (Source: Google Street View)



Plate 8: Rear yard of No. 675 Old South Head Road

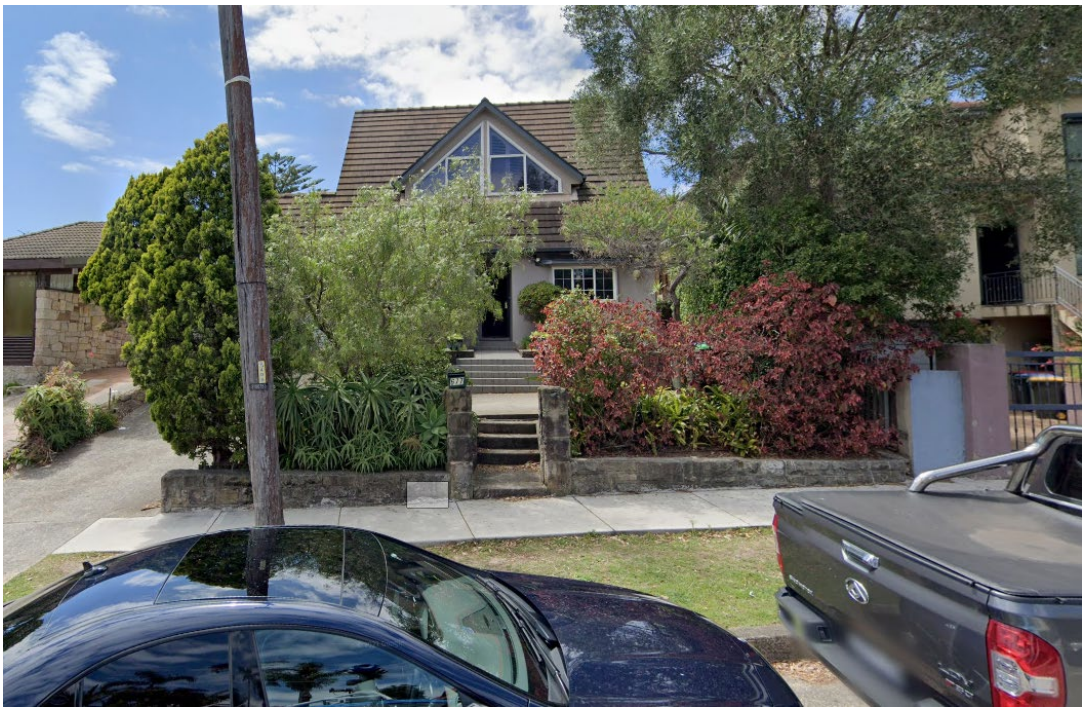


Plate 9: Front of No. 677 Old South Head Road (Source: Google Street View)



Plate 10: Front of No. 679 Old South Head Road (Source: Google Street View)



Plate 11: Rear yard of No. 679 Old South Head Road



Plate 12: Front of No. 681 Old South Head Road (Source: Google Street View)



Plate 13: Rear yard of No. 681 Old South Head Road



Plate 14: Front of No. 683 Old South Head Road (Source: Google Street View)

4.1.1 Tanks and Associated Services

There were no evidence of under-ground or above-ground, fuel or chemical, storage tanks observed on the site. Such tanks and associated infrastructure would be unusual for the site's history.

4.1.2 Fill

Based on the regional topography and the site inspection, it was considered likely that the site has been subjected to significant filling. However, minor filling and/or disturbed soil was encountered within the some of the former geotechnical boreholes (**Appendix B**).

4.1.3 Surface Odours and Staining

No unusual odours or surface staining that could be potentially associated with contamination were noted during the site inspection.

4.2 Surrounding Land Uses and Activities

Surrounding land uses observed from the aerial photographs and our site inspection are summarised below:

- North: Residential properties.



- South: Mix of commercial and residential properties.
- East: Residential properties.
- West: Mix of commercial and residential properties.

4.3 TOPOGRAPHY

The site is located about mid-way on a gentle to moderately north dipping slope. The surface elevation as shown on the survey plans (**Appendix A**) vary between approximately 73m AHD at the southern boundary and 66m AHD at the northern boundary.

4.4 GEOLOGY AND SOILS

4.4.1 Regional

A review of the regional geological map (reference 6) indicates that the site is underlain by the Hawkesbury Sandstone formation, which typically consists of "*…medium to coarse-grained quartz sandstone, very minor shale and laminite lenses*". The map also indicates that the site is within close proximity (~200m) to the Quaternary aged Alluvium formation which comprises"*…medium to fine-grained 'marine' sand with podsols".*

A review of the regional soils map indicates that the site is located within the Lambert Soil Landscape Group (reference 7) which is associated with undulating to rolling rises and low hills on Hawkesbury Sandstone. Local reliefs are up typically 20-120m and slopes are usually less than <20% in gradient, with frequent rock outcrops (>50%). Soils of the Lambert Group typically comprise erosional sands and clays, have seasonally perched water tables and very low soil fertility.

4.4.2 Site Specific

The site stratigraphy, as observed in the previous geotechnical boreholes typically comprised a layer of topsoil and/or fill material overlying natural sand which was underlain by sandstone bedrock which is consistent with the Hawkesbury Sandstone formation.

Detailed descriptions of the subsurface conditions on site are provided in the geotechnical borehole logs provided in **Appendix B**. More information of the subsurface conditions is provided in Section 6.1.2.

4.5 GROUNDWATER / HYDROGEOLOGY

4.5.1 Regional

Based on the geological information it was anticipated that permanent groundwater is likely to be confined or partly confined, discrete, water-bearing zones within the bedrock formation. However, intermittent 'perched' water seepage often occurs at the soil / bedrock interface following heavy and prolonged rainfall events.

A search of registered groundwater bores in the vicinity of the site was completed and the results are provided in the Lotsearch report (**Appendix C**). In summary there were 89 registered bores within 2km of the site and the nearest bore (GW110857) is 777m to the west of the site. Given the distance of this bore, and others, from the site, the information available is not considered relevant to the site.

4.5.2 Site Specific

Permanent groundwater (i.e. the water table) was not encountered during the drilling of the previous geotechnical boreholes and is expected to be present within the bedrock formation. However, perched seepage water was observed near the interface of the residual soil and bedrock formations. This water is directly recharged by rainfall events and therefore its presence and volume will vary significantly.

5 CONCEPTUAL SITE MODEL

The conceptual site model (CSM) is a representation, or summary, of information obtained regarding potential contamination sources, receptors and exposure pathways between the sources and receptors. The key elements of a CSM include:

- ◊ known and potential sources of contamination, areas of environmental concern (AEC) and chemicals of potential concern (CoPC), including the mechanisms of contamination (such as 'top down' spills or sub-surface releases from corroded tanks or pipes),
- ◊ potentially affected media (such as soil, sediment, groundwater, surface water, indoor and ambient air),
- ◊ human and ecological receptors, and
- ◊ potential and complete exposure pathways.

GEE notes that this CSM is based on existing information and will require revision once more information is obtained.

5.1 POTENTIAL CONTAMINATION SOURCES AND COPC

Based on the site history information, combined with a review of the site's physical and environmental setting, the site and the properties immediately surrounding the site have not been subjected to significant potentially contaminating activities. The main areas of environmental concern (AEC) and potential for contamination (albeit minor) is summarised in **Table 1**.

Table 1: Potential Contamination Sources and CoPC

Area of Environmental Concern (AEC)	Potential Contaminating Source	Chemical of Potential Concern (CoPC)	Estimated Risk of Contamination
On-Site			
Area Beyond the Building Footprints	Potential use of lead-based paints and asbestos containing materials on existing and former structures: Any renovations or maintenance work over the years, and the demolition of these structures, may have resulted in near surface soils being impacted with lead and/or ACM.	Lead and Asbestos	Low
Entire Site	Fill Material: The geotechnical boreholes identified a relatively shallow layer of fill material. When sourced from an unknown origin, the quality of the fill not known and therefore may be contaminated.	Metals, Polycyclic Aromatic Hydrocarbons (PAHs), Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene (BTEXN), Pesticides, PCBs and Asbestos[2]	Medium
Off-Site			
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5.2 *Potential or Known Contaminated Media*

The potential for contamination is from to-down sources and therefore the potential contaminated media comprises the near surface soil profile (either fill and/or the upper portion of the natural soil). To a lesser extent is the deeper soil profile because there is always potential for contaminants to leach down through the soil.

Groundwater is unlikely to be contaminated because it is present at depth within the bedrock formation but should be assessed if the fill and natural soils be found to be significantly contaminated.

[2] These are common contaminants of concern for developed areas across Sydney.

5.3 CONTAMINANT RECEPTORS

Considering the proposed development and layout, potential receptors to the any contamination would include:

Human Receptors

- ◊ Workers (adults) engaged to construct the proposed development including earthworks contractors for the basement,
- ◊ Future occupants and visitors of the new development (adults and children), and
- ◊ Workers (adults) engaged to maintain any buried services/utilities.

Environmental Receptors

- ◊ Soil environments beneath the site and their associated ecosystems, and
- ◊ Buildings and structures.

5.4 POTENTIAL EXPOSURE PATHWAYS

Considering the layout of the proposed development, including the extent of the basement and areas of unsealed garden space that are beyond proposed basement, the potential exposure pathways include:

- ◊ Ingestion of soil (workers and future users) in unsealed areas.
- ◊ Direct (dermal) contact (workers and future users) in unsealed areas.
- ◊ Inhalation of asbestos fibres from any degraded ACM.
- ◊ Inhalation of any volatile contaminants (workers and future users).

6 SAMPLING AND ANALYSIS PROGRAM

The sampling and analysis program was designed with reference to the site's history, our site inspection and the CSM. The purpose of the program was to characterise the soil conditions across the site in accordance with relevant EPA NSW guidelines to determine whether it would be suitable for the proposed land-use.

In accordance with NSW EPA *Contaminated Sites: Guidelines for NSW Site Auditor Scheme* (reference 8) and Appendix B of Schedule B2 of the NEPM (reference 3), the Data Quality Objectives (DQOs) process was used to define the type, quantity and quality of the data needed to support decisions relating to the environmental condition of a site. Details of the DQO process adopted for the soil sampling and analysis program is provided in **Appendix E**.

6.1 SAMPLING PROGRAM

The sampling program was undertaken by Stephen McCormack, Chase Chan and Zachary Ziesel in two stages. The initial stage occurred on the 6th and 7th September 2022 and comprised:

- ◊ The drilling of seventeen boreholes (BH301 to BH317) in accessible areas across 671 – 683 Old South Head Road, and
- ◊ The collection of soil samples from each borehole for subsequent selective laboratory analysis of contaminants of potential concern.

The second stage occurred on the 31st October 2023 and comprised:

- ◊ The drilling of two boreholes (BH401 and BH402) in accessible areas across 669 Old South Head Road, and
- ◊ The collection of soil samples from each borehole for subsequent selective laboratory analysis of contaminants of potential concern.

6.1.1 Borehole Drilling Operations and Logging

The number of boreholes exceeds the minimum number of sampling points required for adequate site characterisation as defined by the EPA NSW and Australian Standards (reference 9 and 10). The boreholes were positioned in accordance with a judgemental sampling pattern which is considered appropriate given the documented history and proposal to excavate the entire site.

Prior to commencement of the bores, an inspection for buried services was completed and cross-checked with the results of a Dial Before you Dig (DBYD) search.

The boreholes were drilled using an 85mm diameter stainless steel hand auger which was decontaminated prior to use and between boreholes by washing with laboratory grade, biodegradable and phosphate-free detergent, followed by rinsing with potable water. To check the adequacy of the decontamination procedure, GEE collected a rinsate quality control sample during each stage of fieldwork (SM070922-R and ZZ311023-R) from the hand auger and submitted it for analysis of some contaminants of concern, in particular volatile contaminants which are most likely to cause cross-contamination.

Each of the boreholes were advanced through any surface topsoil and/or fill material before terminating into the natural (i.e. previously undisturbed) soil profile. During drilling, the encountered fill and natural soils were geologically logged by an environmental scientist and geotechnical engineer taking care to describe the presence and depth of fill material/previously disturbed ground, the natural stratum, moisture, seeps or water bearing zones, elevation of the water level/hydraulic head, and adverse aesthetics such as discolouration, odours or obvious evidence of contamination. There was no adverse odour or staining observed during drilling, and no obvious ACM below ground at the borehole locations. Following drilling, the bores were backfilled with soil cuttings and the surface reinstated.

A summary of the subsurface conditions encountered is provided in Section 6.1.2, while a summary of the borehole information, including total depth, is provided in **Table 2**. The locations of the boreholes are shown on **Figure 5**.

Table 2: Summary of the Borehole Information

Borehole ID	Date	Drilling Method	Total Depth	Depth of Topsoil and/or Filling
			(m BGS)	(m BGS)
BH301	06 Sept 2022	Hand Auger	1.20	0.20
BH302	06 Sept 2022	Hand Auger	1.20	0.25
BH303	06 Sept 2022	Hand Auger	1.10	0.90
BH304	06 Sept 2022	Hand Auger	1.20	0.45
BH305	06 Sept 2022	Hand Auger	1.10	0.40
BH306	06 Sept 2022	Hand Auger	1.30	0.45
BH307	06 Sept 2022	Hand Auger	1.20	0.25

BH308	06 Sept 2022	Hand Auger	1.00	0.20
BH309	06 Sept 2022	Hand Auger	1.10	0.25
BH310	06 Sept 2022	Hand Auger	1.20	0.30
BH311	06 Sept 2022	Hand Auger	1.20	0.30
BH312	06 Sept 2022	Hand Auger	1.20	0.25
BH313	06 Sept 2022	Hand Auger	1.20	0.25
BH314	06 Sept 2022	Hand Auger	0.95	≥0.95
BH315	06 Sept 2022	Hand Auger	1.20	0.30
BH316	07 Sept 2022	Hand Auger	1.20	0.50
BH317	07 Sept 2022	Hand Auger	1.20	0.30
BH401	31 Oct 2023	Hand Auger	1.00	0.40
BH402	31 Oct 2023	Hand Auger	1.00	0.30

m BGS = metres below ground surface

6.1.2 Subsurface Conditions

The subsurface conditions, as observed in all the boreholes, typically comprised a layer of topsoil and/or fill material over natural sand soil. Based on the previous geotechnical bores, the natural sand layer is underlain by sandstone bedrock.

Detailed descriptions of the subsurface conditions on site are provided in the borehole logs in **Appendix B** and **Appendix F**, while a summary of the subsurface conditions encountered across the rear of the site are provided in **Table 3**.

Table 3: Summary of the Subsurface Conditions

Layer / Unit	Description	Depth to the Top of Layer (m)
TOPSOIL / FILL	Predominately SAND with minor gravel and silty content: dark brown and grey, fine to medium grained with roots. Anthropogenic inclusions such as brick, ceramic, metal, glass and concrete were noted in boreholes BH303, BH304, BH307, BH308, BH314, BH401 and BH402.	0.0
NATURAL SOIL	SAND: grey, brown, orange-brown, fine to medium grained with occasional bands of partially indurated nodules.	0.2 – 0.95
BEDROCK	SANDSTONE: grey and orange, weathered.	2.0 to >5.8m

Groundwater was not encountered by the previous boreholes and remained dry during the short time (~30 minutes) that they remained open.

6.1.3 Soil Sampling

In accordance with NEPM (1999) Schedule B(2) *Guideline on Site Characterisation* (reference 3) samples were collected from each borehole from the near surface (0 – 200mm) and at approximately 0.5m intervals, or at changes in fill, or soil type, or at depths where the presence of contamination was indicated (*e.g.* based on odour, colour, unusual substances, liquids etc).

Each sample was collected by hand using dedicated, disposable nitrile gloves in general accordance with techniques described in Australian Standard AS4482.2 (reference 11) and NEPM (2013 – reference 3), to maintain the representativeness and integrity of the samples. The soil was then placed in laboratory supplied; acid washed glass jars. When collecting duplicates, samples to be analysed for volatiles were not mixed, rather they were split and placed directly into separate sample jars.

The samples were each labelled with a unique sample identification number, in addition to the date of collection and project number, before being placed on ice within an esky. For the borehole samples, the sample identification number was repeated on the borehole logs (**Appendix F**) at the corresponding depth. At the end of sampling, the esky was returned directly to the GEE office where more ice was added and after the final day of sampling the esky was delivered to the laboratory (with a Chain of Custody (COC) form).

In accordance with AS4482.1 (reference 10), a series of Quality Assurance (QA) procedures were integrated within the sampling plan and included:

- ◊ The collection of Quality Control (QC) samples.
- ◊ The use of standardised field sampling forms developed by GEE.
- ◊ Documentation of calibration and use of field instruments.

QC samples were collected as appropriate including blind replicates and split duplicates at a frequency of 5 %, and the collection of trip blanks, trip spikes and a rinsate blank from the auger. More detail about the QC sampling and analysis is provided in Section 7 and **Appendix G**.



At the completion of each borehole, including logging and the sampling of soils, each borehole was backfilled with soil cuttings.

A summary of the samples collected and analysed during this investigation and the sampling depths are provided in **Table 4**.

6.1.4 Field Screening of Soil Samples

Field screening was carried out on all primary samples collected during the initial stage of fieldwork and where there was sufficient sample available. This was done using a Photoionisation Detector (PID) supplied and calibrated by Air-Met Scientific Pty Ltd and the purpose of the screening process was to indicate areas potentially impacted by volatile compounds and to assist in the selection of samples for laboratory analysis. The process involved partly filling a re-sealable polyethylene bag with the soil sample, sealing the bag before placing it direct sunlight to allow any volatile gases to accumulate in the headspace of the bag. The gas levels in the headspace were then investigated with the PID which was equipped with a 10.6eV lamp.

GEE notes that the VOCs detected by the PID may be affected by humid atmospheric conditions and other organics in the soil, therefore is only used as a qualitative tool. Notwithstanding this, the PID results did not indicate the presence of VOCs.

A copy of the PID results and the calibration certificate for the PID are provided in **Appendix H**.

Field screening was not carried out on the samples collected from the second stage of fieldwork. However, there was no obvious hydrocarbon odour noted during the fieldwork and the near surface soil samples were analysed for volatile component of Total Petroleum Hydrocarbons, which is more conclusive than field screening with a PID.

6.2 Analytical Program

In accordance with Section 5.1, selected soil samples were analysed for the following potential chemicals of concern:

- ◊ Metals (Arsenic, Cadmium, Chromium, Copper, Mercury, Nickel, Lead and Zinc),
- ◊ Total Recoverable Hydrocarbons (TRH),
- ◊ Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene (BTEXN),
- ◊ Polycyclic Aromatic Hydrocarbons (PAHs),



- ◊ Organochlorine Pesticides (OCPs),
- ◊ Polychlorinated Biphenyls (PCBs), and
- ◊ Asbestos.

The primary soil samples were analysed by Envirolab Services, a laboratory which is National Association of Testing Authorities (NATA) registered for the testing undertaken. The secondary soil samples (split duplicates) were sent to Envirolab Services' Melbourne laboratory, which is also NATA accredited for the testing undertaken.

A summary of the soil analytical program, including which samples were selected for analysis and the chemicals analysed, is provided in **Table 4**.

Table 4: Summary of the Sampling and Analysis Program

Location	Sample Depth	Sample ID	Material Type/Layer	Analytical Program						
				Metals	TRH	BTEXN	PAHs	OCPs	PCBs	Asbestos
Primary Samples										
BH301	0.05 – 0.2	SM060922-01	Topsoil / Fill	✓	✓	✓	✓	✓	✓	✓
BH301	0.2 – 0.4	SM060922-02	Natural Sand	✓	✓	✓	✓	-	-	-
BH301	1.0 – 1.2	SM060922-03	Natural Sand	-	-	-	-	-	-	-
BH302	0.05 – 0.2	SM060922-04	Topsoil / Fill	✓	✓	✓	✓	-	-	✓
BH302	0.3 – 0.5	SM060922-05	Natural Sand	✓	✓	✓	✓	-	-	-
BH302	1.0 – 1.2	SM060922-06	Natural Sand	-	-	-	-	-	-	-
BH303	0.05 – 0.2	SM060922-07	Fill	✓	✓	✓	✓	✓	✓	✓
BH303	0.7 – 0.8	SM060922-08	Fill	✓	-	-	-	-	-	-
BH303	0.9 – 1.0	SM060922-09	Natural Sand	✓	-	-	✓	-	-	-
BH304	0.05 – 0.2	SM060922-10	Fill	✓	✓	✓	✓	✓	✓	✓
BH304	0.5 – 0.7	SM060922-11	Natural Sand	✓	-	-	✓	-	-	-
BH304	1.0 – 1.2	SM060922-12	Natural Sand	-	-	-	-	-	-	-
BH305	0.05 – 0.2	SM060922-13	Topsoil / Fill	✓	✓	✓	✓	-	-	✓
BH305	0.5 – 0.7	SM060922-14	Natural Sand	✓	-	-	✓	-	-	-
BH305	0.9 – 1.0	SM060922-15	Natural Sand	-	-	-	-	-	-	-
BH306	0.05 – 0.25	SM060922-16	Fill	✓	✓	✓	✓	✓	✓	✓
BH306	0.5 – 0.7	SM060922-17	Natural Sand	✓	✓	✓	✓	-	-	-
BH306	1.2 – 1.3	SM060922-18	Natural Sand	-	-	-	-	-	-	-
BH307	0.06 – 0.2	SM060922-19	Fill	✓	✓	✓	✓	✓	✓	✓
BH307	0.3 – 0.5	SM060922-20	Natural Sand	✓	-	-	✓	-	-	-
BH307	1.0 – 1.2	SM060922-21	Natural Sand	-	-	-	-	-	-	-
BH308	0.06 – 0.2	SM060922-22	Fill	✓	✓	✓	✓	-	-	✓
BH308	0.3 – 0.5	SM060922-23	Natural Sand	✓	-	-	✓	-	-	-
BH309	0.15 – 0.3	SM060922-27	Fill	✓	✓	✓	✓	✓	✓	✓
BH309	0.3 – 0.5	SM060922-28	Natural Sand	✓	✓	✓	✓	-	-	-
BH309	0.7 – 0.9	SM060922-29	Natural Sand	-	-	-	-	-	-	-
BH310	0.05 – 0.2	SM060922-24	Topsoil / Fill	✓	✓	✓	✓	-	-	✓
BH310	0.3 – 0.5	SM060922-25	Natural Sand	✓	-	-	✓	-	-	-
BH310	1.0 – 1.2	SM060922-26	Natural Sand	-	-	-	-	-	-	-
BH311	0.05 – 0.2	SM060922-30	Fill	✓	✓	✓	✓	-	-	✓
BH311	0.3 – 0.5	SM060922-31	Natural Sand	✓	-	-	✓	-	-	-
BH311	1.0 – 1.2	SM060922-32	Natural Sand	-	-	-	-	-	-	-
BH312	0.05 – 0.2	SM060922-33	Topsoil / Fill	✓	✓	✓	✓	-	-	✓
BH312	0.3 – 0.5	SM060922-34	Natural Sand	✓	-	-	✓	-	-	-
BH312	1.0 – 1.2	SM060922-35	Natural Sand	-	-	-	-	-	-	-
BH313	0.05 – 0.2	SM060922-36	Topsoil / Fill	✓	✓	✓	✓	-	-	-
BH313	0.3 – 0.5	SM060922-37	Natural Sand	✓	-	-	✓	-	-	-
BH313	1.0 – 1.2	SM060922-38	Natural Sand	-	-	-	-	-	-	-
BH314	0.1 – 0.3	SM060922-39	Fill	✓	✓	✓	✓	✓	✓	✓
BH314	0.4 – 0.6	SM060922-40	Fill	✓	✓	✓	✓	-	-	✓
BH314	0.7 – 0.9	SM060922-41	Fill	✓	-	-	-	-	-	-
BH315	0.05 – 0.2	SM060922-42	Topsoil / Fill	✓	✓	✓	✓	-	-	✓
BH315	0.3 – 0.5	SM060922-43	Natural Sand	✓	-	-	✓	-	-	-
BH315	1.0 – 1.2	SM060922-44	Natural Sand	-	-	-	-	-	-	-
BH316	0.05 – 0.2	SM060922-45	Topsoil / Fill	✓	✓	✓	✓	-	-	✓
BH316	0.6 – 0.8	SM060922-46	Natural Sand	✓	-	-	✓	-	-	-
BH316	1.0 – 1.2	SM060922-47	Natural Sand	-	-	-	-	-	-	-
BH317	0.05 – 0.2	SM060922-48	Topsoil / Fill	✓	✓	✓	✓	-	-	✓
BH317	0.5 – 0.7	SM060922-49	Natural Sand	✓	-	-	✓	-	-	-
BH317	1.0 – 1.2	SM060922-50	Natural Sand	-	-	-	-	-	-	-
BH401	0.05 – 0.2	ZZ311023-01	FILL	✓	✓	✓	✓	✓	✓	✓
BH401	0.5 – 0.6	ZZ311023-02	Natural Sand	✓	✓	✓	✓	-	-	-
BH402	0.05 – 0.2	ZZ311023-03	FILL	✓	✓	✓	✓	✓	✓	✓
BH402	0.4 – 0.5	ZZ311023-04	Natural Sand	✓	✓	✓	✓	✓	✓	-
BH402	0.9 – 1.0	ZZ311023-05	Natural Sand	-	-	-	-	-	-	-
TOTALS				40	26	26	38	10	10	19

Quality Control Samples – Initial Stage of Fieldwork										
BH301	0.05 – 0.2	SM060922-100	Split Duplicate of SM060922-01	✓	✓	✓	✓	✓	✓	-
BH304	0.05 – 0.2	SM060922-101	Blind Replicate of SM060922-10	✓	✓	✓	✓	✓	✓	-
BH307	0.06 – 0.2	SM060922-102	Split Duplicate of SM060922-19	-	-	-	-	-	-	-
BH308	0.06 – 0.2	SM060922-103	Blind Replicate of SM060922-22	✓	✓	✓	✓	-	-	-
--	--	SM070922-R1	Rinsate Sample (Hand Auger)	✓	✓	✓	-	-	-	-
--	--		Trip Blank	-	✓[1]	✓	-	-	-	-
--	--		Trip Spike	-	-	✓	-	-	-	-
Quality Control Samples – Second Stage of Fieldwork										
BH401	0.05 – 0.2	ZZ311023-100	Blind Replicate of ZZ311023-01	✓	✓	✓	✓	✓	✓	-
BH402	0.4 – 0.5	ZZ311023-101	Split Duplicate of ZZ311023-04	✓	✓	✓	✓	✓	✓	-
--	--	ZZ311023-R	Rinsate Sample (Hand Auger)	✓	✓	✓	-	-	-	-
--	--		Trip Blank	-	✓[1]	✓	-	-	-	-
--	--		Trip Spike	-	-	✓	-	-	-	-

Note 1: TRH (Volatile)

7 DATA QUALITY ASSESSMENT

A detailed Quality Assurance (QA) assessment, including the analysis of Quality Control (QC) samples, was carried out by GEE to determine the suitability and reliability of field procedures and analytical results. In accordance with Appendix C of Schedule B2 of the NEPM (reference 3), the QA assessment used Data Quality Indicators (DQIs) which included:

- precision.
- accuracy (or bias).
- representativeness.
- completeness.
- comparability.

The detailed QA assessment report is provided in **Appendix G** and concludes that the field procedures and analytical data presented herein are of suitable quality for making conclusions and recommendations regarding the contamination status of the site.

8 ASSESSMENT CRITERIA

To determine the significance of any contaminants detected in the soil samples, appropriate Site Assessment Criteria (SAC) have been defined and are based on guidelines endorsed by the NSW EPA.

For any contamination assessment, it is necessary to assess the human health and ecological risks associated with the presence of site contamination. Also, in accordance with the NSW EPA Site Auditor Guidelines (reference 7) and section 3.6 of Schedule B1 of the NEPM (reference 12), residential sites need to address aesthetics such as highly malodorous soils.

8.1 AESTHETICS

Aesthetics were continually assessed in the field during borehole drilling and no significant observations were noted.

8.2 ECOLOGICAL RISK

Most of the site will be covered by the proposed development, including the proposed basement, meaning that ecological interaction with soil contaminants will be limited. Therefore, ecological criteria are not relevant.

8.3 HEALTH RISK

To address potential health impacts at the site, GEE has compared the analytical results against Health Investigation Levels (HILs) and Health Screening Levels (HSLs), provided in NEPM (2013), *Schedule B(1) – Guidelines on Investigation Levels for Soil and Groundwater* (reference 12).

8.3.1 Health Investigation Levels (HILs)

HILs for soil contaminants are provided in Table 1A(1) of the NEPM guidelines and have been developed for a broad range of metals and organic substances (i.e. PAHs, Pesticides and PCBs). Asbestos and petroleum hydrocarbons are not included.

The HILs are scientifically based, generic assessment criteria to be used as a first stage (or tier 1) screening of potential risks to human health from chronic exposure to contaminants. They are intentionally conservative and are based on the following four different and generic land use scenarios (or exposure scenarios) which are based on long-term exposures for the most sensitive receptor populations exposed:



- ◊ HIL-A described as residential with accessible soils and includes childcare centres, preschools and primary schools,
- ◊ HIL-B which includes residential with minimal opportunities for soil access and includes high rise apartments,
- ◊ HIL-C for public space such as parks and secondary schools, and
- ◊ HIL-D for commercial/industrial sites.

Each land-use scenario assumes different exposure scenarios and when land is used for more than one purpose, the HILs that are relevant to the more sensitive land-use should be adopted. For the site, and as a first-pass assessment of the analytical results, the most appropriate land use scenario is considered to be HIL-A. This scenario has been chosen because some of the proposed residential units will have their own dedicated garden areas.

A summary of the HIL-A criteria is provided in **Table 5**.

8.3.2 Health Screening Levels (HSLs)

Health Screening Levels (HSLs) were developed for selected petroleum hydrocarbons (specifically TRH C_6 – C_{10} or F1 fraction, TRH >C_{10} – C_{16} or F2 fraction and BTEX) by the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) and have been adopted and are referenced in Schedule B(1) of NEPM (2013 – reference 12) and Friebel & Nadebaum (2011 – reference 13). HSLs were also developed for asbestos in soil by the WA DoH (reference 14) and have been adopted in Schedule B(1) of NEPM.

Petroleum Hydrocarbons

The assessment of petroleum hydrocarbon contamination is primarily driven by human health concerns relating to:

1. Volatile components (e.g. TRH C_6 – C_{10}, TRH >C_{10} – C_{16} and Benzene) which have the potential to cause health issues via vapour intrusion (e.g. from inhalation), and
2. Direct contact with the hydrocarbons.

For vapour intrusion, different HSLs apply for different land use scenarios, different soil types (i.e. sand, silt and clay) and different depths. For the purpose of this investigation, criteria relevant for shallow (0m to 1m) soils has been adopted because they are the most conservative and all of the samples collected for analysis were from less than 1m depth. For soil type, the criteria for sand soils have been adopted because this is also the most

conservative. Notwithstanding this, if a sample exceedance occurs then the corresponding criteria will be considered during discussion of the analytical results.

With respect to land-use, there are five scenarios:

◊ HSL-A for low density residential sites

◊ HSL-B for high density residential sites

◊ HSL-C for recreational/open space areas

◊ HSL-D for commercial and industrial sites

◊ HSL – Intrusive Maintenance Workers

The first four land-use scenarios are based on the land-use at ground/basement level because if vapour exposure is acceptable at ground/basement level it can be assumed that it is also acceptable for the floors above ground level. For the proposed development residential land-use is proposed at ground level but will be overlying the proposed basement and therefore HSL-D criteria is applicable. Intrusive maintenance worker HSLs are also relevant, but the HSL-D soil vapour criteria is lower and therefore most critical.

Direct contact criteria are also appropriate for the site due to the dedicated garden areas of some of the proposed residential units. Direct contact HSLs also differ depending on various land-use scenarios and GEE considers that the most appropriate for this site are those relating to HSL-A.

In summary, and for the purpose of a preliminary assessment of the results, GEE has adopted the lowest criteria from the HSLs for vapour intrusion (HSL-D) and HSLs for direct contact (HSL-A) have been adopted. Like HILs, an exceedance of the HSL does not necessarily mean that there is a risk, rather further appropriate evaluation and/or investigation is required. A summary of the HSLs adopted for the site is provided in **Table 5**.

Asbestos is Soil

GEE has adopted a zero-tolerance approach to asbestos in soil and therefore any detection of asbestos fibres will result in the need for further assessment and/or management.

Table 5: Soil Site Assessment Criteria (SAC)

Analyte	Health Investigation/Screening Levels (HILs/HSLs) (mg/kg)	Reference
Total Metals		
Arsenic	100	(HIL-A) Table 1A – Reference 12
Cadmium	20	(HIL-A) Table 1A – Reference 12
Chromium (VI)	100	(HIL-A) Table 1A – Reference 12
Copper	6,000	(HIL-A) Table 1A – Reference 12
Lead	300	(HIL-A) Table 1A – Reference 12
Mercury (inorganic)	40	(HIL-A) Table 1A – Reference 12
Nickel	400	(HIL-A) Table 1A – Reference 12
Zinc	7,400	(HIL-A) Table 1A – Reference 12
Polycyclic Aromatic Hydrocarbons (PAHs)		
Benzo(a)pyrene TEQ	3	(HIL-A) Table 1A – Reference 12
TOTAL PAHs	300	(HIL-A) Table 1A – Reference 12
Organochlorine Pesticides (OCP)		
Heptachlor	6	(HIL-A) Table 1A – Reference 12
Aldrin + Dieldrin	6	(HIL-A) Table 1A – Reference 12
Endrin	10	(HIL-A) Table 1A – Reference 12
Chlordane	50	(HIL-A) Table 1A – Reference 12
Endosulfan	270	(HIL-A) Table 1A – Reference 12
HCB	10	(HIL-A) Table 1A – Reference 12
Methoxychlor	300	(HIL-A) Table 1A – Reference 12
DDE + DDD + DDT	240	(HIL-A) Table 1A – Reference 12
BTEXN		
Benzene	3	(HSL-D) Table 1A(3) – Reference 12
Toluene	14,000	(HSL-A direct contact) Table A4 – Reference 13
Ethylbenzene	4,500	(HSL-A direct contact) Table A4 – Reference 13
Xylenes	12,000	(HSL-A direct contact) Table A4 – Reference 13
Naphthalene	1,400	(HSL-A direct contact) Table A4 – Reference 13
Total Recoverable Hydrocarbons (TRH)		
(F1) C6 – C10	260	(HSL-D) Table 1A(3) – Reference 12
(F2) >C10 - C16	3,300	(HSL-A direct contact) Table A4 – Reference 13
(F3) >C16 – C34	4,500	(HSL-A direct contact) Table A4 – Reference 13
(F4) >C34 – C40	6,300	(HSL-A direct contact) Table A4 – Reference 13
PCBs		
Total PCBs	1	(HIL-A) Table 1A – Reference 12
Asbestos		
Asbestos – surface and buried	No Visible Asbestos	No Visible Asbestos

9 ANALYTICAL RESULTS

GEE submitted a total of 40 primary soil samples for NATA accredited laboratory analysis to facilitate assessment of site suitability. A copy of the laboratory reports is provided in **Appendix I**, while a summary of the results is provided in **Table 6** and discussed in the following Sections.

9.1 METALS

A total of 40 samples were analysed during this investigation for arsenic, cadmium, chromium, copper, lead, nickel, mercury and zinc. In summary, all the concentrations were below the health-based SAC except for the following five samples which had elevated concentrations of lead above the corresponding health-based SAC of 300mg/kg:

Sample ID	**Location / Depth** (m)	**Lead Sample Concentration** (mg/kg)
SM060922-24	BH310 / 0.05 – 0.2m	780
SM060922-33	BH312 / 0.05 – 0.2m	440
SM060922-36	BH313 / 0.05 – 0.2m	670
SM060922-42	BH315 / 0.05 – 0.2m	610
SM060922-45	BH316 / 0.05 – 0.2m	420

The concentrations of lead in one of the five samples was more than 250% of the corresponding health-based SAC (300mg/kg) which means that the soil represented by this sample is considered a "hotspot" and will require management and/or remediation.

When combined with the other elevated sample results, the judgemental sampling distribution and the lack of access to parts of the site such as below structures, GEE considers that the topsoil/fill layer across the site is contaminated with lead at concentrations more than those permissible for the proposed land-use, and therefore will need to be managed as part of the proposed development and / or remediated to ensure there is no risk to future users of the site.

9.2 TRH AND BTEXN

A total of 26 primary samples were selected for TRH and BTEXN analysis. In summary, all the sample concentrations were below the SAC. When combined with the fact that there was no hydrocarbon staining or odour observed in the samples, it is concluded that TRH and BTEXN do not pose a contamination issue for the site.

9.3 PAHs

A total of 28 primary samples were analysed for PAHs, which includes Benzo(a)Pyrene (BaP) and BaP Toxicity Equivalent Quotient (BaP TEQ). In summary, the concentrations were all below the SAC and therefore the concentrations of PAHs are not considered to pose a contamination issue for the site.

9.4 OCPs

A total of 10 primary soil samples were analysed for OCPs. In summary, the concentrations of all OCPs were less than the adopted SAC and the minimum laboratory detection limits. In this regard, it is concluded that it is concluded that OCPs do not pose a contamination issue for the site.

9.5 PCBs

A total of 10 primary soil samples were analysed for PCBs. In summary, the concentrations of all PCBs were less than the adopted SAC and the minimum laboratory detection limits. In this regard, it is concluded that it is concluded that PCBs do not pose a contamination issue for the site.

9.6 Asbestos

The presence of asbestos fibres was inspected in 19 near-surface fill samples which are most likely to be impacted by asbestos. In summary each sample did not detect asbestos fibres and when combined with the fact that potential ACM was not observed during drilling works then asbestos is not considered to pose a contamination issue at the site.

TABLE 6 - Summary of the Soil Analytical Results

Sample ID		SM060922-01	SM060922-100	SM060922-02	SM060922-04	SM060922-05	SM060922-07	SM060922-08	SM060922-09	SM060922-10	SM060922-101	SM060922-11	SM060922-13	SM060922-14	SM060922-16	SM060922-17	Site Acceptance Criteria
Analyte	Location	BH301	Split	BH301	BH302	BH302	BH303	BH303	BH303	BH304	Blind	BH304	BH305	BH305	BH306	BH306	Health Based Criteria (HILs & HSLs)
	Depth	0.05 – 0.2	Duplicate of	0.2 – 0.4	0.05 – 0.2	0.3 – 0.5	0.05 – 0.2	0.7 – 0.8	0.9 – 1.1	0.05 – 0.2	Replicate of	0.5 – 0.7	0.05 – 0.2	0.5 – 0.7	0.05 – 0.25	0.5 – 0.7	
	Type	Topsoil / Fill	SM060922-01	Natural Sand	Topsoil / Fill	Natural Sand	Fill	Fill	Natural Sand	Fill	SM060922-10	Natural Sand	Topsoil / Fill	Natural Sand	Fill	Natural Sand	
Asbestos																	
Asbestos Detected	Yes/No	No	-	-	No	-	No	-	-	No	-	-	No	-	No	-	**Zero Detected**
Trace Analysis	Yes/No	No	-	-	No	-	No	-	-	No	-	-	No	-	No	-	**Zero Detected**
Metals																	
Arsenic	mg/kg	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	5	<4	<4	4	**100**
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.4	<0.4	<0.4	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	**20**
Chromium[1]	mg/kg	3	3	<1	4	<1	25	20	6	5	7	<1	9	<1	<1	8	**100**
Copper	mg/kg	12	13	<1	53	12	34	41	15	19	24	2	28	1	<1	9	**6,000**
Lead	mg/kg	59	72	1	140	4	100	210	140	150	160	17	29	1	2	19	**300**
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	0.1	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	**40**
Nickel	mg/kg	<1	1	<1	1	<1	28	12	2	4	4	<1	3	<1	<1	4	**400**
Zinc	mg/kg	10	14	<1	85	39	84	180	120	160	180	12	51	3	4	40	**7,400**
BTEXN																	
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	**3.0**
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	**14,000**
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	-	<1	<1	**4,500**
Total Xylenes	mg/kg	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	-	<1	<1	**12,000**
Naphthalene	mg/kg	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	-	<1	<1	**1,400**
TRH																	
TRH C_6 - C_{10} (F1)	mg/kg	<25	<25	<25	<25	<25	<25	-	-	<25	<25	-	<25	-	<25	<25	**260**
TRH >C_{10} - C_{16} (F2)	mg/kg	<50	<50	<50	<50	<50	<50	-	-	<50	<50	-	<50	-	<50	<50	**3,300**
TRH >C_{16}-C_{34} (F3)	mg/kg	<100	<100	<100	<100	<100	<100	-	-	<100	<100	-	<100	-	<100	<100	**4,500**
TRH >C_{34}-C_{40} (F4)	mg/kg	<100	<100	<100	<100	<100	<100	-	-	<100	<100	-	<100	-	<100	<100	**6,300**
PAHs																	
Benzo(a)pyrene	mg/kg	0.77	0.84	<0.05	0.83	<0.05	0.4	-	0.77	0.75	1.5	<0.05	0.1	<0.05	<0.05	1.3	**-**
Benzo(a)pyrene TEQ	mg/kg	1	1.2	<0.5	1.2	<0.5	0.5	-	1.1	1	2.1	<0.5	<0.5	<0.5	<0.5	2	**3**
Total PAHs	mg/kg	6.4	7.2	<0.05	7.5	<0.05	3.5	-	7.5	6.3	13	<0.05	0.55	<0.05	<0.05	14	**300**
OCPs																	
Heptachlor	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**6**
Aldrin	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**6**
Dieldrin	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	
Endrin	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**10**
gamma-Chlordane	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**50**
alpha-chlordane	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	
Endosulfan I	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**270**
Endosulfan II	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	
HCB	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**10**
Methoxychlor	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**300**
DDE + DDD + DDT	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**240**
Remaining OCPs	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	-
PCBs																	
Total PCBs	mg/kg	<0.1	<0.1	-	-	-	<0.1	-	-	<0.1	<0.1	-	-	-	<0.1	-	**1**

TABLE NOTES:

Analytical results which exceed any of the Health-based Investigation Levels (HILs) are shown as **bold** text.

1 – Total Chromium analytical result includes chromium (III) and (VI).

TABLE 6 - Summary of the Soil Analytical Results

Sample ID		SM060922-19	SM060922-20	SM060922-22	SM060922-103	SM060922-23	SM060922-27	SM060922-28	SM060922-24	SM060922-25	SM060922-30	SM060922-31	SM060922-33	SM060922-34	SM060922-36	Site Acceptance Criteria
Analyte	Location	BH307	BH307	BH308	Blind	BH308	BH309	BH309	BH310	BH310	BH311	BH311	BH312	BH312	BH313	Health Based Criteria (HILs & HSLs)
	Depth	0.06 – 0.2	0.3 – 0.5	0.06 – 0.2	Replicate of	0.3 – 0.5	0.15 – 0.3	0.3 – 0.5	0.05 – 0.2	0.3 – 0.5	0.05 – 0.2	0.3 – 0.5	0.05 – 0.2	0.3 – 0.5	0.05 – 0.2	
	Type	Fill	Natural Sand	Fill	SM060922-22	Natural Sand	Fill	Natural Sand	Topsoil / Fill	Natural Sand	Fill	Natural Sand	Topsoil / Fill	Natural Sand	Topsoil / Fill	
Asbestos																
Asbestos Detected	Yes/No	No	-	No	-	-	No	-	No	-	No	-	No	-	-	**Zero Detected**
Trace Analysis	Yes/No	No	-	No	-	-	No	-	No	-	No	-	No	-	-	**Zero Detected**
Metals																
Arsenic	mg/kg	<4	<4	<4	<4	<4	<4	<4	<4	<4	4	<4	<4	<4	<4	**100**
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	2	<0.4	<0.4	<0.4	0.8	<0.4	<0.4	**20**
Chromium[1]	mg/kg	<1	3	2	3	4	<1	<1	15	<1	3	<1	9	<1	6	**100**
Copper	mg/kg	1	<1	17	14	<1	5	<1	120	1	12	3	38	4	180	**6,000**
Lead	mg/kg	25	1	96	200	2	65	2	**780**	<1	82	4	**440**	27	**670**	**300**
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	0.2	<0.1	0.6	**40**
Nickel	mg/kg	<1	1	1	4	1	<1	<1	8	<1	2	<1	7	<1	2	**400**
Zinc	mg/kg	20	2	95	130	2	25	3	590	25	81	17	470	48	430	**7,400**
BTEXN																
Benzene	mg/kg	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	-	<0.2	**3.0**
Toluene	mg/kg	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	**14,000**
Ethylbenzene	mg/kg	<1	-	<1	<1	-	<1	<1	<1	-	<1	-	<1	-	<1	**4,500**
Total Xylenes	mg/kg	<1	-	<1	<1	-	<1	<1	<1	-	<1	-	<1	-	<1	**12,000**
Naphthalene	mg/kg	<1	-	<1	<1	-	<1	<1	<1	-	<1	-	<1	-	<1	**1,400**
TRH																
TRH C_6 - C_{10} (F1)	mg/kg	<25	-	<25	<25	-	<25	<25	<25	-	<25	-	<25	-	<25	**260**
TRH >C_{10} - C_{16} (F2)	mg/kg	<50	-	<50	<50	-	<50	<50	<50	-	<50	-	<50	-	<50	**3,300**
TRH >C_{16}-C_{34} (F3)	mg/kg	<100	-	<100	<100	-	<100	<100	<100	-	<100	-	<100	-	<100	**4,500**
TRH >C_{34}-C_{40} (F4)	mg/kg	<100	-	<100	<100	-	<100	<100	<100	-	<100	-	<100	-	<100	**6,300**
PAHs																
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	0.1	<0.05	1.1	<0.05	0.4	<0.05	0.4	<0.05	0.1	<0.05	<0.05	**-**
Benzo(a)pyrene TEQ	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**3**
Total PAHs	mg/kg	<0.05	<0.05	0.4	0.84	<0.05	9.8	<0.05	3.6	<0.05	3.1	<0.05	1.3	<0.05	<0.05	**300**
OCPs																
Heptachlor	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**6**
Aldrin	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**6**
Dieldrin	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	
Endrin	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**10**
gamma-Chlordane	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**50**
alpha-chlordane	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	
Endosulfan I	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**270**
Endosulfan II	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	
HCB	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**10**
Methoxychlor	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**300**
DDE + DDD + DDT	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**240**
Remaining OCPs	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-
PCBs																
Total PCBs	mg/kg	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	**1**

TABLE NOTES:

Analytical results which exceed any of the Health-based Investigation Levels (HILs) are shown as **bold** text.

1 – Total Chromium analytical result includes chromium (III) and (VI).

TABLE 6 - Summary of the Soil Analytical Results

Sample ID		SM060922-37	SM060922-39	SM060922-40	SM060922-41	SM060922-42	SM060922-43	SM060922-45	SM060922-46	SM060922-48	SM060922-49	ZZ311023-01	ZZ311023-100	ZZ311023-02	ZZ311023-03	ZZ311023-04	ZZ311023-101	Site Acceptance Criteria
Analyte	Location	BH313	BH314	BH314	BH314	BH315	BH315	BH316	BH316	BH317	BH317	BH401	Blind	BH401	BH402	BH402	Split	
	Depth	0.3 – 0.5	0.1 – 0.3	0.4 – 0.6	0.7 – 0.9	0.05 – 0.2	0.3 – 0.5	0.05 – 0.2	0.6 – 0.8	0.05 - 0.2	0.5 – 0.7	0.05 - 0.2	Replicate of	0.5 - 0.6	0.05 - 0.2	0.4 - 0.5	Replicate of	Health Based Criteria (HILs & HSLs)
	Type	Natural Sand	Fill	Fill	Fill	Topsoil / Fill	Natural Sand	Topsoil / Fill	Natural Sand	Topsoil / Fill	Natural Sand	Fill	ZZ311023-01	Natural Sand	Fill	Natural Sand	ZZ311023-04	
Asbestos																		
Asbestos Detected	Yes/No	-	No	No	-	No	-	No	-	No	-	No	-	-	No	-	-	**Zero Detected**
Trace Analysis	Yes/No	-	No	No	-	No	-	No	-	No	-	No	-	-	No	-	-	**Zero Detected**
Metals																		
Arsenic	mg/kg	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	28	26	<4	<4	<4	<4	**100**
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	1	<0.4	0.6	<0.4	0.6	<0.4	0.5	0.4	<0.4	<0.4	<0.4	<0.4	**20**
Chromium[1]	mg/kg	<1	2	4	4	16	<1	14	<1	7	<1	27	27	2	2	<1	<1	**100**
Copper	mg/kg	3	5	8	13	91	1	39	<1	42	<1	72	74	1	16	1	2	**6,000**
Lead	mg/kg	15	21	76	79	**610**	17	**420**	2	140	1	190	170	6	120	4	6	**300**
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.2	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**40**
Nickel	mg/kg	<1	2	2	2	8	<1	6	<1	7	<1	6	7	<1	1	<1	<1	**400**
Zinc	mg/kg	58	31	110	130	780	17	160	22	170	7	280	260	8	200	4	11	**7,400**
BTEXN																		
Benzene	mg/kg	-	<0.2	<0.2	-	<0.2	-	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**3.0**
Toluene	mg/kg	-	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**14,000**
Ethylbenzene	mg/kg	-	<1	<1	-	<1	-	<1	-	<1	-	<1	<1	<1	<1	<1	<1	**4,500**
Total Xylenes	mg/kg	-	<1	<1	-	<1	-	<1	-	<1	-	<1	<1	<1	<1	<1	<1	**12,000**
Naphthalene	mg/kg	-	<1	<1	-	<1	-	<1	-	<1	-	<1	<1	<1	<1	<1	<1	**1,400**
TRH																		
TRH C_6 - C_{10} (F1)	mg/kg	-	<25	<25	-	<25	-	<25	-	<25	-	<25	<25	<25	<25	<25	<25	**260**
TRH >C_{10} - C_{16} (F2)	mg/kg	-	<50	<50	-	<50	-	<50	-	<50	-	<50	<50	<50	<50	<50	<50	**3,300**
TRH >C_{16}-C_{34} (F3)	mg/kg	-	<100	<100	-	210	-	<100	-	<100	-	<100	100	<100	<100	<100	<100	**4,500**
TRH >C_{34}-C_{40} (F4)	mg/kg	-	<100	<100	-	120	-	<100	-	<100	-	<100	<100	<100	<100	<100	<100	**6,300**
PAHs																		
Benzo(a)pyrene	mg/kg	<0.05	0.3	0.3	-	1.4	<0.05	0.2	<0.05	0.06	<0.05	0.2	0.2	<0.05	0.62	<0.05	<0.05	**-**
Benzo(a)pyrene TEQ	mg/kg	<0.5	<0.5	<0.5	-	2.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	**3**
Total PAHs	mg/kg	<0.05	2.5	3.1	-	16	<0.05	1.2	<0.05	0.06	<0.05	2	2.2	<0.05	5.3	<0.05	<0.05	**300**
OCPs																		
Heptachlor	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	**6**
Aldrin	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	**6**
Dieldrin	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	
Endrin	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	**10**
gamma-Chlordane	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	**50**
alpha-chlordane	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	
Endosulfan I	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	**270**
Endosulfan II	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	
HCB	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	**10**
Methoxychlor	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	**300**
DDE + DDD + DDT	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	0.2	0.5	-	<0.1	<0.1	<0.1	**240**
Remaining OCPs	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-
PCBs																		
Total PCBs	mg/kg	-	<0.1	-	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	**1**

TABLE NOTES:

Analytical results which exceed any of the Health-based Investigation Levels (HILs) are shown as **bold** text.

1 – Total Chromium analytical result includes chromium (III) and (VI).

10 SITE CHARACTERISATION

A summary of the investigation results is presented below.

10.1 SITE HISTORY INFORMATION

The Site

Based on a review of the historical information, the allotments which make up the site were formed by subdivision in the 1920s, and the existing dwellings (or part thereof) were likely constructed soon thereafter. Following initial development of the site, a number of alterations and additions have occurred which are summarised below and shown in **Figure 4a** for No. 669 – 677 Old South Head Road and **Figure 4b** for 679 – 683 Old South Head Road.

- No. 669
  The existing corner shop and dwelling with detached garage was built pre-1930 with only minor alterations and/or additions observed.
- No. 671
  The existing brick house was built pre-1930 with additions to the rear occurring between 1961 and 1965. The existing brick building in the rear, north-eastern corner was also constructed pre-1930, while the adjoining garage was constructed between 1961 and 1965 when the house was extended. The existing metal carport located in the rear, south-eastern corner was added between 1970 and 1978. Finally, there was a former structure (likely a shed) in the rear, south-eastern part of the site which was built pre-1930 and demolished in the early 1950s.
- No. 673
  The existing brick house was built pre-1930 along with the existing fibro garage to the north-east of the house. The house was then extended towards the rear between 1951 and 1955. Between 1986 and 1991, an awning was added to the rear of the house and a metal carport along the northern side of the house.
- No. 675
  The existing brick house was built pre-1930 along with a garage to the north-east of the house. The house underwent a significant renovation between 1994 and 2000 which included additions on all sides. At the same time as this renovation, the former garage in the north-eastern part of the site was demolished.
- No. 677
  The existing brick house was built pre-1930 along with a garage in the front, north-western corner. Between 1986 and 1991, the garage was demolished, and the house

was extended towards the rear. Then the existing in-ground swimming pool was added to the rear yard between 2005 and 2011.

◊ No. 679
The existing brick house was built pre-1930 along with two fibro sheds that still remain in the rear yard. The house was renovated between 1956 and 1961 and included additions to the rear, front and southern sides. Elsewhere, there appeared to be a shed (or similar structure) in the rear yard that was built in the 1970s and demolished in the early 2000s.

◊ No. 681
The existing brick house was built pre-1930 along with a relatively small structure (likely a shed) in the rear yard and approximately midway along the northern boundary. The house was extended towards the front in the early 1960s and at the same time, the shed in the rear yard was demolished. Finally, in the late 1980s, the house was extended towards the rear.

◊ No. 683
The existing brick house was built pre-1930 along with a relatively small structure (likely a shed) in the rear yard and adjacent to the southern boundary. Another small structure (likely a shed) was visible in the middle of the rear yard between the late 1940s to early 1950s. There were some additions to the rear of the original house in the 1950s and again in the mid-2010s.

The past and current land-use activities are relatively benign from a site contamination perspective. However, some existing structures on the site, and potentially some of the former structures, have likely included the use of Asbestos Containing Materials (ACM). Furthermore, the age of the original buildings suggests that lead-based paints may have been used. Therefore, any maintenance work over the years may have resulted in elevated lead concentrations, and ACM contamination, in near surface soils surrounding the buildings.

Surrounding Land

Surrounding land and land-use activities have the potential to cause contamination of the site via groundwater or surface water migration. The historical information determined that there have been, or are, some dry cleaners and a petrol station located within 100m of the site with both of these business types commonly associated with land contamination. However, they are all located down-slope of the site which suggests that any contamination in the groundwater will not impact the site.

10.2 Site Description and Surface Conditions

The site is an irregular parcel of land situated on the eastern side Old South Head Road. At the time of this investigation the site comprised seven residential properties, each containing a house with associated gardens/access pathways, sheds/outbuildings, paved areas and scattered trees. Importantly, an inspection of the surface of the site revealed no adverse staining, odour or obvious Asbestos Containing Material (ACM).

10.3 Potential For Contamination and CoPC

A summary of the main Areas of Environmental Concern (AEC), albeit minor, and associated Chemical of Potential Concern (CoPC) are as follows:

◊ *Entire Site:*

Potential use of lead-based paints and asbestos containing materials on existing and former structures: Any renovations or maintenance work over the years, and the demolition of these structures, may have resulted in near surface soils being impacted with lead and/or ACM.

◊ *Entire Site:*

Fill Material: The geotechnical boreholes identified a relatively shallow layer of fill material. When sourced from an unknown origin, the quality of the fill not known and therefore may be contaminated.

The potential for contamination is from to-down sources and therefore the potential contaminated media comprises the near surface soil profile (either fill and/or the upper portion of the natural soil). To a lesser extent is the deeper soil profile because there is always potential for contaminants to leach down through the soil.

Groundwater is unlikely to be contaminated because it is present at depth within the bedrock formation but should be assessed if the fill and natural soils be found to be significantly contaminated.

10.4 Subsurface Soil Conditions

Soil conditions across the site were assessed at 19 borehole locations (BH301 to BH317 and BH401 and BH402 – **Figure 5**) positioned relatively evenly across the site and targeting areas of potential contamination.

The subsurface conditions, as observed in these boreholes and the previous geotechnical boreholes, typically comprised a surface layer of topsoil and/or fill (i.e. either imported

material or previously disturbed ground) over natural sand soil which is then underlain by sandstone bedrock. During the drilling of the boreholes there were no adverse odours or staining observed and no obvious Asbestos Containing Materials (ACM) observed.

To assess the contamination status of the topsoil, fill and natural soil profile across the site, GEE submitted a total of 40 soil samples to a NATA accredited laboratory analysis for analysis of the CoPC. Specifically, metals (arsenic, cadmium, chromium, copper, nickel, lead, mercury and zinc), TRH, BTEXN, PAHs, OCPs, PCBs and asbestos fibres. The results were compared against relevant set of health-based SAC appropriate for the proposed land-use (i.e. residential with accessible soils) and the environmental setting.

In summary, there was several samples from the surface topsoil/fill layer that contained concentrations of lead above the health-based SAC for the proposed land-use, and therefore will need to be managed as part of the proposed development and/or remediated to ensure there is no risk to future users of the site.

10.5 GROUNDWATER ASSESSMENT

GEE acknowledges that groundwater conditions beneath the site were not assessed as part of this investigation and is not considered to be necessary for the following reasons:

- ◊ Permanent groundwater was not encountered within the soil profile and is expected to be confined within discrete, water-bearing zones (e.g. joints and defects) within the underlying bedrock formation,
- ◊ The mass hydraulic conductivity of the Hawkesbury sandstone formation is typically very low (in the order of 10^{-7}m/sec – reference 15) and would restrict the vertical migration of contaminants,
- ◊ There were no significant volatile contaminating activities identified during the Stage 2 DSI which could be sufficiently mobile and impact the groundwater, and
- ◊ The natural soil layer which lies between the contaminated surface soils and the groundwater was uncontaminated.

11 CONCLUSION AND RECOMMENDATIONS

GEE was commissioned by OSHR at Vaucluse Holdings Pty Ltd to undertake a combined PSI and DSI for the site located at 669 - 683 Old South Head Road, Vaucluse NSW 2030. The investigation was required to support a Development Application with the Waverley Council and relates to the proposed construction of a multi-storey seniors living development with a two-level basement for parking and associated landscaping.

The site covers an area of approximately 4,350m^2 (by calculation) and encompasses the following legal allotments:

- Lots A and B in Deposited Plan (DP) 324744
- Lot 2 in DP 10314
- Lot 1 in DP 169310
- Lot 4 in DP 192614
- Lot 1 in DP 168877
- Lot 1 in DP 167942
- Lot 1 in DP 666626
- Lot 2 in DP 316716

The objective of the PSI and DSI was to address the provisions of the *State Environmental Planning Policy No. 55 – Remediation of Land* by identifying past and present contaminating activities, by determining the suitability of the site for the proposed land-use and possible constraints on the proposed development. It was also required to support a Development Application with Waverley Council for the proposed seniors living development.

The investigation comprised a:

- Review of the site's history to provide an understanding of past and present site activities which in turn may indicate sources and areas of potential contamination as well as potential chemicals of concern,
- Review of the environmental and physical setting in which the site lies, and
- Detailed site inspection for potential sources of contamination.
- Field investigations including the drilling of boreholes across the site to provide even coverage and to target areas of environmental concern

- The collection of soil samples at regular intervals from each of the boreholes, and
- Laboratory analysis of selected soil samples for the contaminants of concern.

Based on observations made during the field investigations, the sampling and analysis program conducted at the site, the proposed land-use (i.e. residential with accessible soils) and with respect to relevant statutory guidelines, GEE conclude that the near surface topsoil / fill material across the site is sporadically contaminated with lead at concentrations greater than those permissible for the proposed land-use. The site, however, can be made suitable for the proposed land-use by undertaking standard and conventional remediation measures.

In accordance with State and local planning guidelines, a Remedial Action Plan (RAP) has been prepared and sets out the proposed remediation measures and the controls that are required to ensure that the site is made suitable for the proposed development and land-use. Once the contamination has been removed and disposed from the site in accordance with the RAP, a Validation Report will be prepared detailing the remediation methods undertaken, that they have been carried out in accordance with the requirements of the RAP and confirming that the site is suitable for the proposed land-use. GEE recommends that the remediation work and subsequent validation report be completed after demolition of the existing structures and prior to the Occupation Certificate being issued.

12 GENERAL LIMITATIONS OF THIS REPORT

This report has been prepared in general accordance with guidelines endorsed by the NSW Office of Environment and Heritage, and the conclusions of this report are based on a limited scope of work described herein, which was considered appropriate based on the same regulatory guidelines.

It is the intention of GEE that the report reflect actual subsurface site conditions, and the contamination status, of the entire site (within the depths investigated). However, regardless of the level of investigation undertaken, there will always be uncertainty when dealing with land contamination. For instance, the sampling points (boreholes and/or testpits) represent a relatively small portion of the site, and ground conditions may vary between sampling locations. The cause of such variation may include, but are not limited to, complex geological settings, the fate and transport characteristics of certain chemicals, the distribution of existing contamination, physical limitations imposed by the location of utilities and other man-made structures, and the limitations of assessment technologies.

Furthermore, the laboratory analytical results contained in this report, upon which conclusions are drawn, relate only to a discrete sample submitted for analysis. Also, not all chemicals have been assessed as part of this investigation. The chemical analytes targeted by this investigation are based on either the site's history or represent a suite of common soil contaminants.

This report is based on site conditions which existed at the time of the field investigation and subsurface conditions may change over time, either through natural processes, or via ongoing activities on the site. Should additional information become available regarding conditions at the site (such as during construction), including evidence of previously unknown sources of contamination, then additional advice should be sought from GEE.

Finally, this report has been prepared for use by the client who has commissioned the works in accordance with the project brief only. Any reliance assumed by third parties on this report shall be at their own risk. This report should not be reproduced without prior approval by the client or amended in any way without prior approval by GEE.

13 REFERENCES

1. NSW Government, 2021: *State Environmental Planning Policy (Resilience and Hazards) 2021.*
2. NSW EPA, 2020: Environment Protection Authority 2020: *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land*. EPA NSW 5 May 2020.
3. NEPM, 2013: *National Environment Protection (Assessment of Site Contamination) Measure 1999 - Schedule B(2) Guideline of Site Characterisation.* As amended 16 May 2013.
4. Crozier Geotechnical Consultants, 2018: *Report on Geotechnical Site Investigation for Proposed Residential Development at 671-679 Old South Head Road, Vaucluse*. Prepared for OSHR Holdings at Vaucluse Pty Ltd. Project No. 2018-106 Dated August 2018.
5. Geo-Environmental Engineering Pty Ltd, 2021: *Geotechnical Investigation Report 671 - 683 Old South Head Road, Vaucluse NSW*. Prepared for the OSHR at Vaucluse Holdings Pty Ltd, Reference: G21071VAU-R01F Dated 8th October 2021.
6. Department of Mineral Resources, 1983: Sydney 1:100,000 *Geological Series Map Sheet 9130 (Edition 1).*
7. Department of Planning, Industry and Environment, 2020, Soil Landscapes of Central and Eastern NSW - v2.1, NSW Office of Environment and Heritage, Sydney).
8. NSW EPA, 2017: New South Wales Environment Protection Authority (2017): *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition).*
9. NSW EPA, 2022: Environment Protection Authority NSW, 2022: Contaminated Land Guidelines: Sampling Design – Part 1. August 2022.
10. Australian Standard AS4482.1 – 2005 Guide to the sampling and investigation of potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds.
11. Australian Standard AS4482.2 (1999). *Australian Standard Guide to the Sampling and Investigation of Potentially Contaminated Soil - Part 2: Volatile substances*.
12. NEPC, 2013: National Environment Protection Council (1999*).* National Environment Protection (Assessment of Site Contamination) Measure. *Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater.*
13. Friebel & Nadebaum (2011): *Technical Report No. 10 - Health screening levels for petroleum hydrocarbons in soil and groundwater Part 1: Technical development document*. CRC for Contamination Assessment and Remediation of the Environment.

14. Western Australian Department of Health, 2009: *Guidelines for the Assessment, Remediation and Management of Asbestos – Contaminated Sites in Western Australia*, May 2009.

15. Pells et al, 2019: *Classification of Sandstones and Shale in the Sydney Region: A Forty Year Review.* Australian Geomechanics Society, 2019.

FIGURES

1 – SITE LOCATION MAP
2 - SITE PLAN (SURVEY)
3 - SITE PLAN (AERIAL)
4A – EXISTING AND FORMER SITE FEATURES (SOUTH)
4B – EXISTING AND FORMER SITE FEATURES (NORTH)
5 – STAGE 2 DSI SAMPLING POINTS

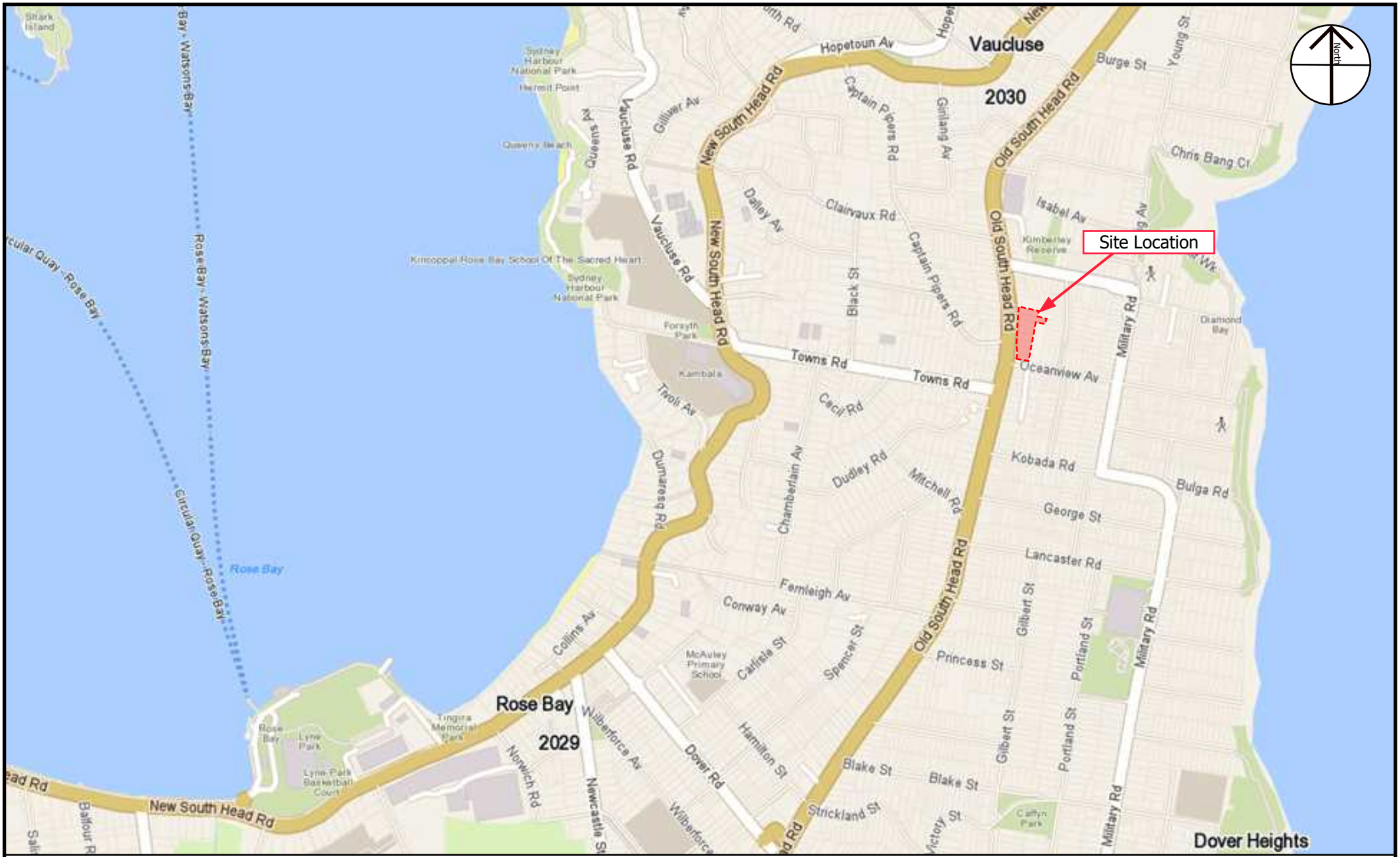
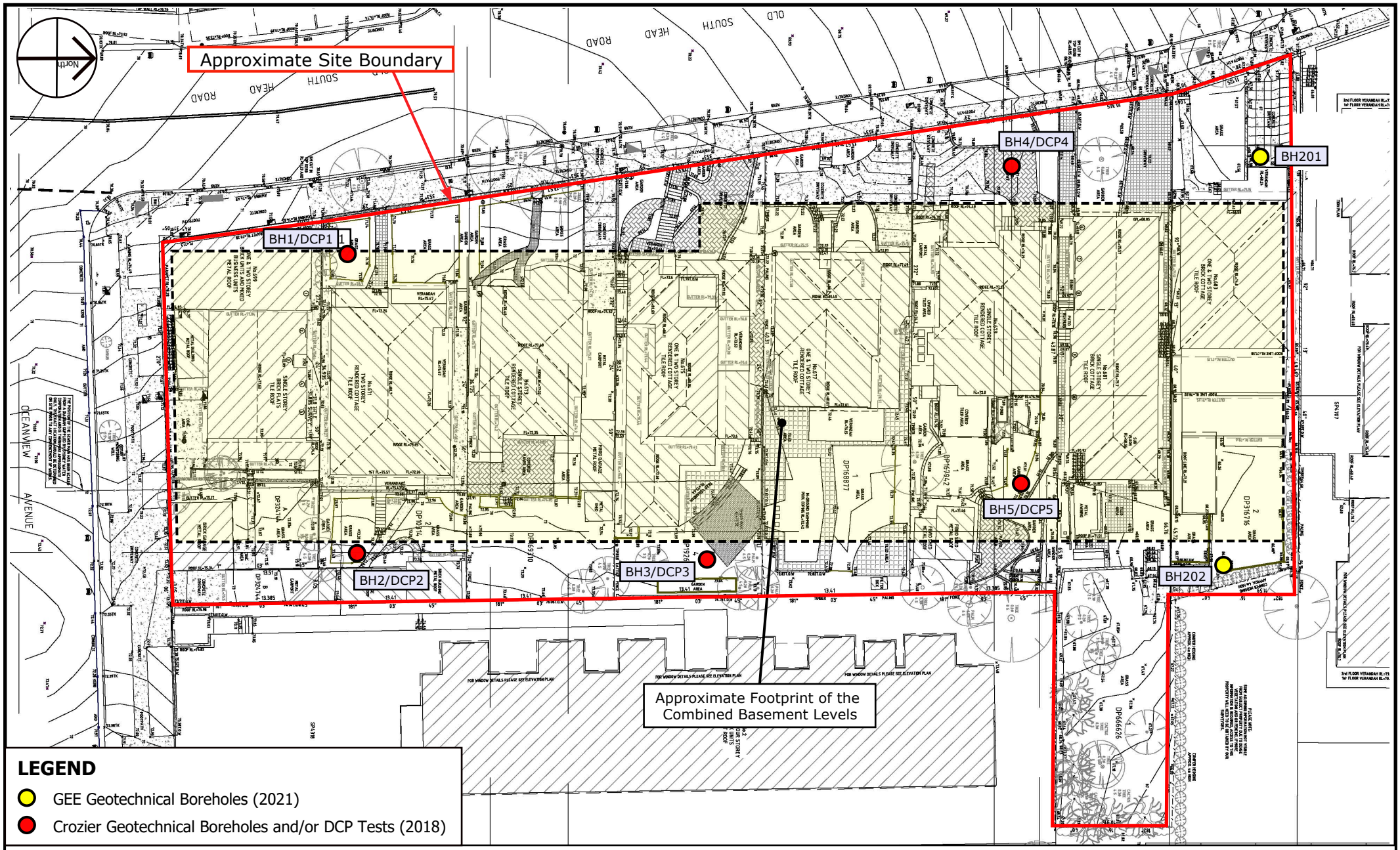


Image Source: www.whereis.com Map data © OpenStreetMap contributors

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FAIRFIELD EAST NSW 2165
P - 61 (2) 9420 3361
E - info@geoenvironmental.com.au
www.geoenvironmental.com.au

TITLE:	SCALE:	DATE:	FIGURE No.:
SITE LOCATION MAP 669 - 683 Old South Head Road, Vaucluse NSW	**N.T.S**	**10 Nov 2023**	**1**
	DRAWN: **S. McC**	JOB No.: **E23026VAU**	REVISION: **A**



LEGEND

- GEE Geotechnical Boreholes (2021)
- Crozier Geotechnical Boreholes and/or DCP Tests (2018)

Base Image: Plan Showing Detail and Levels Over Lot 2 DP10314 - Lot 1 DP167942 Being 671-679 Old South Head Road Vaucluse. Prepared by Survplan Drawing 1308CO_MHN Revision C Dated 17.11.23

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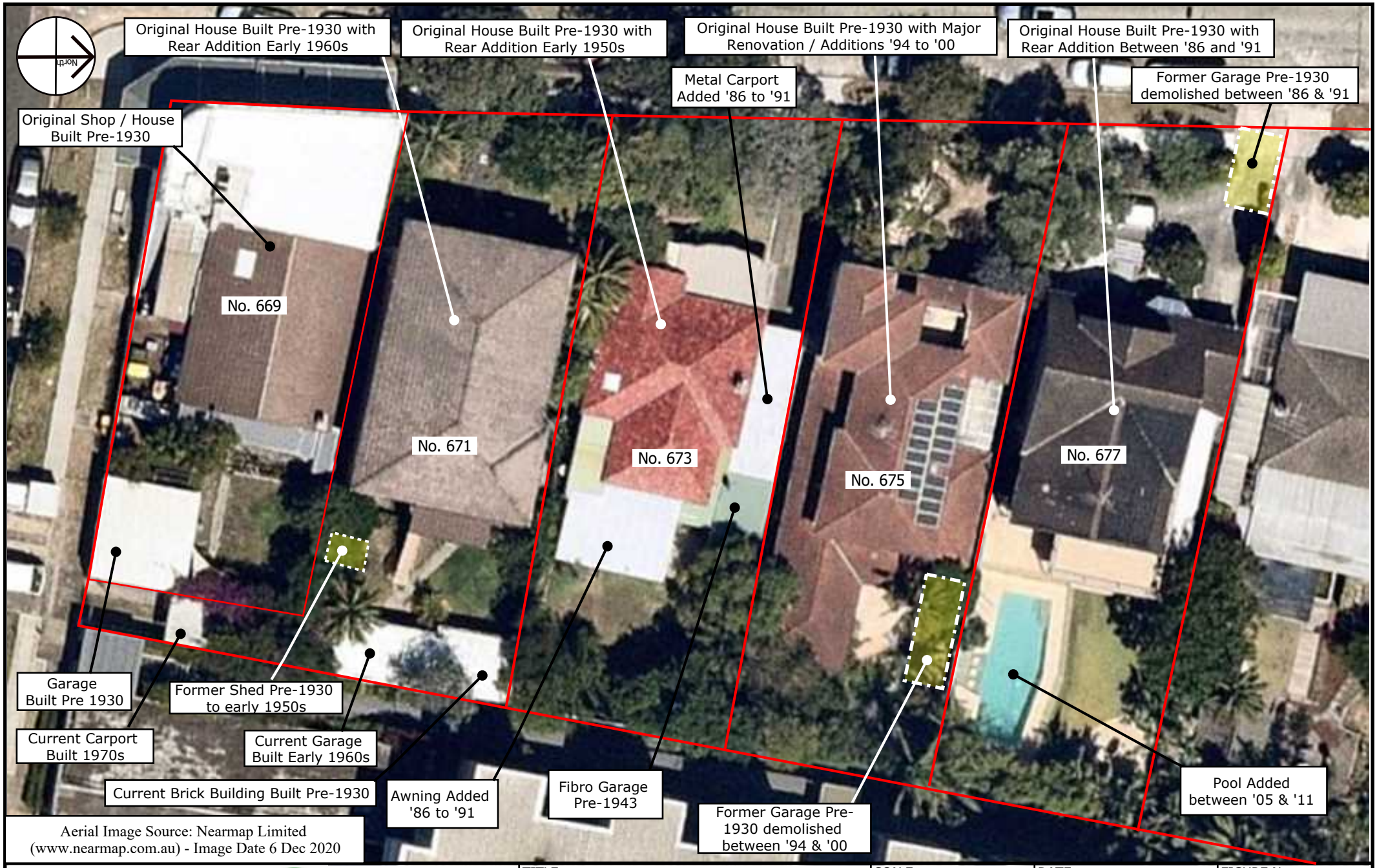
TITLE: SITE PLAN - SURVEY 669 - 683 Old South Head Road, Vaucluse NSW	SCALE: **N.T.S**	DATE: **16 Dec 2023**	FIGURE No.: **2**
	DRAWN: **S. McC**	JOB No.: **E23026VAU**	REVISION: **A**



Aerial Image Source: Nearmap Limited (www.nearmap.com.au) - Image Date 6 Dec 2020

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TITLE: SITE PLAN - AERIAL 669 - 683 Old South Head Road, Vaucluse NSW	SCALE: **N.T.S**	DATE: **10 Nov 2023**	FIGURE No.: **3**
	DRAWN: **S. McC**	JOB No.: **E23026VAU**	REVISION: **A**



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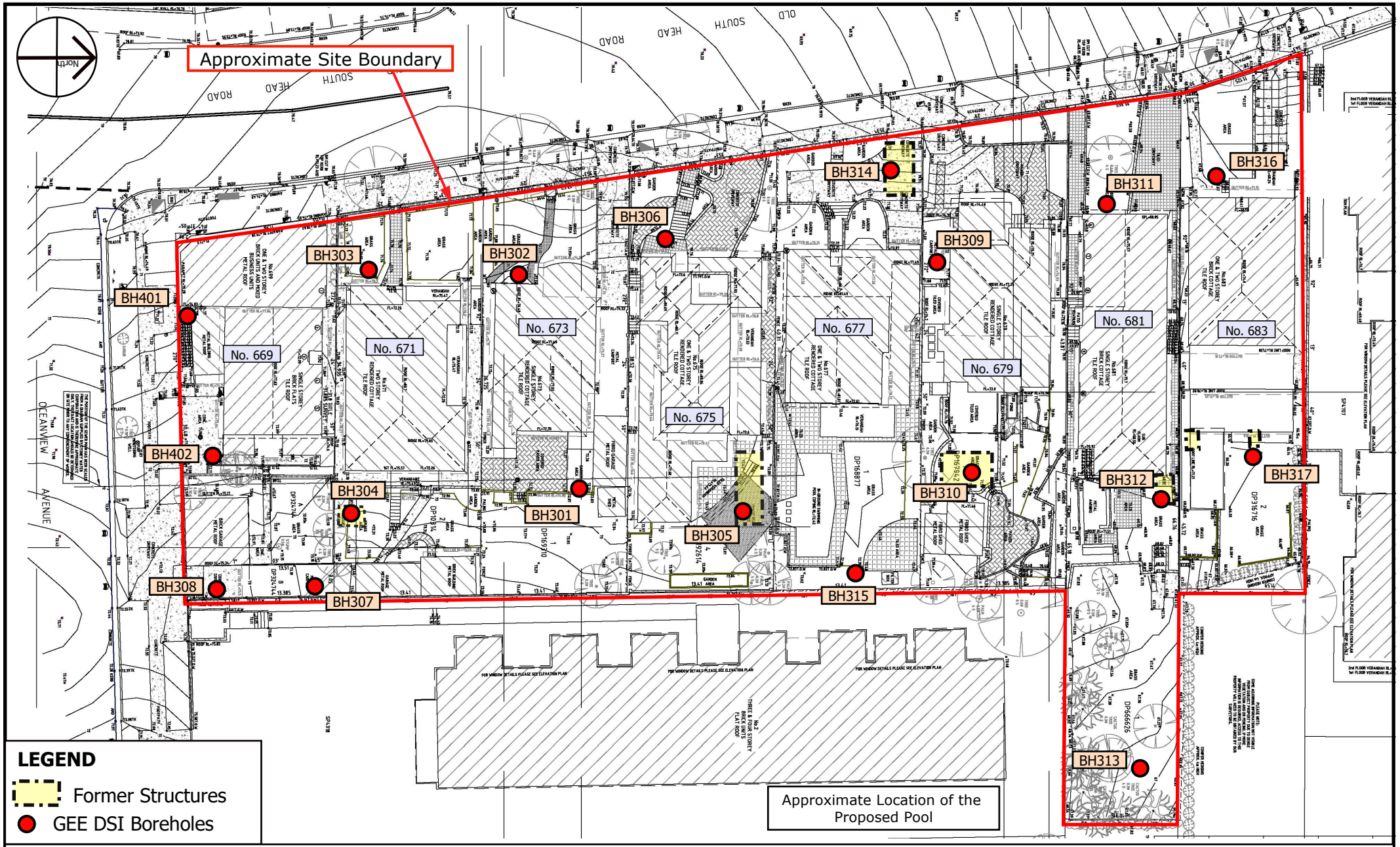
TITLE:	SCALE:	DATE:	FIGURE No.:
EXISTING AND FORMER SITE FEATURES (South)	N.T.S	10 Nov 2023	4a
	DRAWN: S. McC	JOB No.: E23026VAU	REVISION: A



DRAWN:	SCALE:	JOB No.:	DATE:	REVISION:	FIGURE No.:
S. McC	N.T.S	E23026VAU	10 Nov 2023	A	4b

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TITLE: EXISTING AND FORMER SITE FEATURES (North)



Base Image: Plan Showing Detail and Levels Over Lot 2 DP10314 - Lot 1 DP167942 Being 671-679 Old South Head Road Vaucluse. Prepared by Survplan Drawing 1308CO_MHN Revision C Dated 17.11.23

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TITLE:	SCALE:	DATE:	FIGURE No.:
DSI Sampling Points	N.T.S	15 Dec 2023	5
	DRAWN: S. McC	JOB No.: E23026VAU	REVISION: A

APPENDIX A

SURVEY AND ARCHITECTURAL PLANS

A1

L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND



DIAL 1100 BEFORE YOU DIG
www.1100.com.au

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
ACCURACY OF ORIGIN : ± 0.001m

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
1	75.5	1.54	0.92	CLEAR
2	73.01	1.1	1.07	CLEAR
3	72.1	2.05	0.85	DOOR
4	73.01	1.1	1.1	CLEAR
5	73.01	1.1	1.2	CLEAR
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18	73.3	1.14	1.2	CLEAR
19	71.97	1.24	1	CLEAR
20	73.07	1.22	2.16	CLEAR
21	73.07	1.22	2.16	CLEAR

LEGEND

- TELSTRA PILLAR
- TELSTRA MARKER POST
- TELSTRA PIT
- POWER POLE
- ELECTRICAL PILLAR
- POWER LIGHT POLE
- LIGHT POLE
- GAS METER
- GAS DIRECTION MARKER
- WATER MAIN
- HYDRANT
- RECYCLED WATER
- WATER METER
- STOP VALVE
- WATER TAP
- STREET SIGN
- PRAM CROSSING
- VEHICLE CROSSING
- TREE: Ø DIAMETER S SPREAD
- SEWER MANHOLE
- SEWER VENT
- SEWER LAMPHOLE
- STORMWATER PIT
- STORMWATER GRATE
- SURFACE INLET PIT
- STORMWATER PIPE INCLUDING PIPE SIZE (Ø 0.225)
- HEADWALL
- CLOTHES LINE
- E — OVERHEAD ELECTRICITY LINE
- T — OVERHEAD TELECOM LINE
- S — SEWER LINE

VAUGHAN WADY
REGISTERED SURVEYOR #8684
Surveyor Registered under the
Surveying and Spatial Information Act 2002

AREA LOT B VIDE DP 324744: 37.9 m² BY CALC : 40.98 m²	AREA LOT 4 VIDE DP 192614: 524.8 m² BY CALC : 528.4 m²	AREA LOT A VIDE DP 324744: 436.3 m² BY CALC : 437. m²
AREA LOT 2 VIDE DP 10314: 474.2 m² BY CALC : 480.3 m²	AREA LOT 1 VIDE DP 168877: 550.1 m² BY CALC : 552.4 m²	AREA LOT 2 VIDE DP 316716: 550.1 m² BY CALC : 550.5 m²
AREA LOT 1 VIDE DP 169310: 499.5 m² BY CALC : 504.3 m²	AREA LOT 1 VIDE DP 167942: 569.1 m² BY CALC : 573.2 m²	AREA LOT 1 VIDE DP 666626: 670.2 m² BY CALC : 678.0 m²

SURVPLAN SURVEYING // PLANNING // DESIGN
ABN 83 914 613 296
PO BOX 242 HELENSBURGH NSW 2508
PH 0420 944 413 Email: matt@survplan.com.au

PLAN SHOWING DETAIL AND LEVELS OVER LOT 2 DP10314 - LOT 1 DP167942 BEING No.671-683 OLD SOUTH HEAD RD VAUCLUSE FOR DESIGN PURPOSES AND TO SUPPORT A DEVELOPMENT APPLICATION

Rev.	Amendments	Date
A	ADJ.BUILDING DESCRIPTION	17.09.18
B	ADDITIONAL SURVEY INFORMATION	12.04.21
C	UPDATE SURVEY INFORMATION	17.11.23

JOB No. 1308		YOUR REF: MEISSEN PROPERTIES	
DRAWING No. 1308CO_MHN.dwg		CLIENT: MHN DESIGN UNION	
SCALE: 1:250 (A1)	SURVEYED M.S. DATE: 5.12.17	DRAWN M.S. DATE: 11.12.17	CHECKED M.S. DATE: 14.12.17
DATUM:A.H.D.			
SHEET: 1 OF 9			

WARNING:

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3. ALL DETAILS AND FEATURES SHOWN HAVE BEEN PLOTTED IN RELATION TO THE OCCUPATIONS, FENCING AND/OR OLD BRICK/RENDERED WALLS. AND ARE APPROXIMATE ONLY. A BOUNDARY SURVEY SHOULD BE DONE TO DETERMINE THE POSITIONS ACCURATELY.
4. SERVICES SHOWN HEREON ARE THOSE THAT WERE VISIBLE AT THE TIME OF SURVEY AND HAVE BEEN LOCATED BY FIELD SURVEY. FURTHER SERVICES MAY BE PRESENT. PRIOR TO ANY CONSTRUCTION OR EXCAVATION ON SITE THE RELEVANT AUTHORITIES SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES. DIAL BEFORE YOU DIG!
5. THIS SURVEY SHOULD NOT BE USED TO SETOUT BOUNDARY FENCING OR BUILDING WORKS NEAR OR ON THE BOUNDARIES. A SETOUT PLACING ACCURATE MAKES SHOULD BE CARRIED OUT PRIOR TO ANY BUILDING WORKS.
6. THE CONTOUR INTERVAL IS 0.2m. UNLESS SHOWN OTHERWISE. THE CONTOURS HAVE BEEN PLOTTED FROM INTERPOLATION METHODS.

A1

L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND

0 1 2 3 4 5 10m
1 : 100

OLD SOUTH HEAD ROAD

No.26-28
SINGLE STOREY
BRICK COTTAGE/SHOP
TILE ROOF

No.22-24
SINGLE STOREY
BRICK COTTAGE/SHOP
TILE ROOF

No.18-20
THREE STOREY
RENDERED UNITS
/COMMERCIAL SHOP
FLAT ROOF

No.671
TWO STOREY
RENDERED COTTAGE
TILE ROOF

No.699
ONE & TWO STOREY
BRICK UNITS AND MIXED
BUSINESS UNITS
METAL ROOF

SINGLE STOREY
BRICK FLATS
TILE ROOF

~31.8 TITLE
~31.885 SURVEY

A
DP324744

B
DP324744

GARAGE
METAL ROOF

METAL
CARPORT

BRICK GARAGE
METAL ROOF

METAL BUILDING
METAL ROOF

CONCRETE
DRIVEWAY

GRASS
AREA

GARDEN
AREA

FOOTPATH

CONCRETE

No.667A
TWO STOREY
BRICK UNITS
FLAT ROOF

OCEANVIEW AVENUE

THE POSITION OF THE SEWER MAIN HAS BEEN SCALED FROM A DIAGRAM SUPPLIED BY SYDNEY WATER CORPORATION AND IS THEREFORE APPROXIMATE ONLY. THE EXACT LOCATION SHOULD BE DETERMINED ON SITE PRIOR TO ANY COMMENCEMENT OF WORKS.

DIAGRAM:
N.T.S.

APPROX TN
12.593°
M.M.

FOR BASIX PURPOSES

N

DIAL 1100
BEFORE YOU DIG
www.1100.com.au

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
ACCURACY OF ORIGIN : ± 0.001m

AREA LOT B VIDE DP 324744: 37.9 m² BY CALC : 40.98 m²	AREA LOT 4 VIDE DP 192614: 524.8 m² BY CALC : 528.4 m²	AREA LOT A VIDE DP 324744: 436.3 m² BY CALC : 437. m²
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VAUGHAN WADY
REGISTERED SURVEYOR #8684
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6	69.8	2.1	1.1	DOOR
7	71.72	1.46	2.8	CLEAR
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11	70.83	2.5	4.53	CLEAR

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
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14	73.87	1.2	2	CLEAR
15	77.3	1.6	1.9	CLEAR
16	77.3	1.6	1.9	CLEAR
17	74.18	0.94	2.18	CLEAR
18	73.3	1.14	1.2	CLEAR
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20	73.07	1.22	2.16	CLEAR
21	73.07	1.22	2.16	CLEAR

LEGEND

- TELSTRA PILLAR
- TELSTRA MARKER POST
- TELSTRA PIT
- POWER POLE
- ELECTRICAL PILLAR
- POWER LIGHT POLE
- LIGHT POLE
- GAS METER
- GAS DIRECTION MARKER
- WATER MAIN
- HYDRANT
- RECYCLED WATER
- WATER METER
- STOP VALVE
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Rev.	Amendments	Date
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B	ADDITIONAL SURVEY INFORMATION	12.04.21
C	UPDATE SURVEY INFORMATION	17.11.23

JOB No. 1308		YOUR REF: MEISSEN PROPERTIES	
DRAWING No. 1308CO_MHN.dwg		CLIENT: MHN DESIGN UNION	
SCALE: 1:100 (A1)	SURVEYED M.S. DATE: 5.12.17	DRAWN M.S. DATE: 11.12.17	CHECKED M.S. DATE: 14.12.17
DATUM: A.H.D.			
SHEET: 2 OF 9			

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A1 0 1 2 3 4 5 10m

1 : 100

L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND

DIAGRAM: N.T.S.

APPROX TN M.M. 12.593°

FOR BASIX PURPOSES

No.36 SINGLE STOREY RENDERED COTTAGE TILE ROOF

No.34 ONE & TWO STOREY RENDERED COTTAGE TILE ROOF

RENDERED GARAGE

BRICK GARAGE

No.32 SINGLE STOREY BRICK COTTAGE TILE ROOF

No.30 ONE & TWO STOREY BRICK COTTAGE TILE ROOF

No.679 SINGLE STOREY RENDERED COTTAGE TILE ROOF

No.677 ONE & TWO STOREY RENDERED COTTAGE TILE ROOF

No.675 ONE & TWO STOREY RENDERED COTTAGE TILE ROOF

No.673 SINGLE STOREY RENDERED COTTAGE

OLD SOUTH HEAD ROAD

CAPTAIN PIPERS ROAD

DP167942

DP168877

DIAL 1100 BEFORE YOU DIG www.1100.com.au

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
ACCURACY OF ORIGIN : ± 0.001m

AREA LOT A
VIDE DP 324744: 436.3 m²
BY CALC : 437. m²

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BY CALC : 40.98 m²

AREA LOT 4
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VIDE DP 10314: 474.2 m²
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AREA LOT 1
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VAUGHAN WADY
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LEGEND

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- R RECYCLED WATER
- WATER METER
- STOP VALVE
- WATER TAP
- STREET SIGN
- PRAM CROSSING
- VEHICLE CROSSING
- TREE: Ø DIAMETER S SPREAD
- SEWER MANHOLE
- SEWER VENT
- SEWER LAMPHOLE
- STORMWATER PIT
- STORMWATER GRATE
- SURFACE INLET PIT
- STORMWATER PIPE INCLUDING PIPE SIZE Ø 0.225
- HEADWALL
- CLOTHES LINE
- E OVERHEAD ELECTRICITY LINE
- T OVERHEAD TELECOM LINE
- S SEWER LINE

A1

L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND

0 1 2 3 4 5 10m
1 : 100

No.44
SINGLE STOREY
RENDERED COTTAGE
TILE ROOF
RIDGE RL=75.48
RIDGE RL=75.04
GUTTER RL=70.68
GUTTER RL=70.52

No.42
SINGLE STOREY
RENDERED COTTAGE
TILE ROOF
RIDGE RL=74.15
GUTTER RL=70.98
GUTTER RL=70.98

DIAGRAM: N.T.S.
APPROX TN M.M.
12.593°
FOR BASIX PURPOSES

No.40
ONE & TWO STOREY
RENDERED COTTAGE
TILE ROOF
GUTTER RL=74.85
RIDGE RL=76.22
RIDGE RL=73.08
RIDGE RL=77.07
RIDGE RL=74.08
GUTTER RL=74.66
GFL=67.87
ROOF RL=70.99
GUTTER RL=72.2
GUTTER RL=71.57

No.38
SINGLE STOREY
RENDERED COTTAGE
RIDGE RL=74.62
RIDGE RL=73.48

OLD SOUTH HEAD ROAD

CONCRETE DRIVEWAY
FOOTPATH
GRASS AREA
TILED AREA
TILED DRIVEWAY
GARDEN AREA
VERANDAH RL=68.24
TREE 0.4Ø 8 S
TREE 0.2Ø 4 S
TREE 0.4Ø 4 S
BM CUT IN TOP KERB RL=68.95 AHD

No.685
THREE – FIVE S
BRICK UNI
FLAT RO(
ROOF RL=76.7
ROOF RL=75.49
ROOF RL=69.48
2nd FLOOR VERANDAH RL=73.45
1st FLOOR VERANDAH RL=70.72
FOR WINDOW DETAILS PLEASE SEE ELEVATION PLAN

No.683
ONE & TWO STOREY
BRICK COTTAGE
TILE ROOF
RIDGE RL=74.0
ROOF LINE RL=71.38
GUTTER RL=71.15
ROOF LINE RL=70.92
GUTTER RL=71.12
GUTTER RL=70.29

No.681
SINGLE STOREY
BRICK COTTAGE
TILE ROOF
RIDGE RL=75.57
RIDGE RL=75.7

92° 13' 49.467
92° 13' 40"

VAUGHAN WADY
REGISTERED SURVEYOR #8684
Surveyor Registered under the
Surveying and Spatial Information Act 2002

DIAL 1100 BEFORE YOU DIG
www.1100.com.au

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
ACCURACY OF ORIGIN : ± 0.001m

AREA LOT B VIDE DP 324744: 37.9 m² BY CALC : 40.98 m²	AREA LOT 4 VIDE DP 192614: 524.8 m² BY CALC : 528.4 m²	AREA LOT A VIDE DP 324744: 436.3 m² BY CALC : 437. m²
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AREA LOT 1 VIDE DP 169310: 499.5 m² BY CALC : 504.3 m²	AREA LOT 1 VIDE DP 167942: 569.1 m² BY CALC : 573.2 m²	AREA LOT 1 VIDE DP 666626: 670.2 m² BY CALC : 678.0 m²

SURVPLAN SURVEYING // PLANNING // DESIGN
ABN 83 914 613 296
PO BOX 242 HELENSBURGH NSW 2508
PH 0420 944 413 Email: matt@survplan.com.au

Rev.	Amendments	Date
A	ADJ.BUILDING DESCRIPTION	17.09.18
B	ADDITIONAL SURVEY INFORMATION	12.04.21
C	UPDATE SURVEY INFORMATION	17.11.23

PLAN SHOWING DETAIL AND LEVELS OVER LOT 2 DP10314 - LOT 1 DP167942 BEING No.671-683 OLD SOUTH HEAD RD VAUCLUSE FOR DESIGN PURPOSES AND TO SUPPORT A DEVELOPMENT APPLICATION

JOB No. 1308	YOUR REF: MEISSEN PROPERTIES		
DRAWING No. 1308CO_MHN.dwg	CLIENT: MHN DESIGN UNION		
SCALE: 1:100 (A1)	SURVEYED M.S. DATE: 5.12.17	DRAWN M.S. DATE: 11.12.17	CHECKED M.S. DATE: 14.12.17
DATUM: A.H.D.			
SHEET: 4 OF 9			

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5. THIS SURVEY SHOULD NOT BE USED TO SETOUT BOUNDARY FENCING OR BUILDING WORKS NEAR OR ON THE BOUNDARIES. A SETOUT PLACING ACCURATE MAKES SHOULD BE CARRIED OUT PRIOR TO ANY BUILDING WORKS.
6. THE CONTOUR INTERVAL IS 0.2m. UNLESS SHOWN OTHERWISE. THE CONTOURS HAVE BEEN PLOTTED FROM INTERPOLATION METHODS.

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
1	75.5	1.54	0.92	CLEAR
2	73.01	1.1	1.07	CLEAR
3	72.1	2.05	0.85	DOOR
4	73.01	1.1	1.1	CLEAR
5	73.01	1.1	1.2	CLEAR
6	69.8	2.1	1.1	DOOR
7	71.72	1.46	2.8	CLEAR
8	71.72	1.46	2.8	CLEAR
9	71.0	2.18	1.9	CLEAR
10	71.0	2.18	1.9	CLEAR
11	70.83	2.5	4.53	CLEAR

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
11	70.83	2.5	4.53	CLEAR
12	70.83	2.5	4.53	CLEAR
13	70.99	2.28	7.96	CLEAR
14	73.87	1.2	2	CLEAR
15	77.3	1.6	1.9	CLEAR
16	77.3	1.6	1.9	CLEAR
17	74.18	0.94	2.18	CLEAR
18	73.3	1.14	1.2	CLEAR
19	71.97	1.24	1	CLEAR
20	73.07	1.22	2.16	CLEAR
21	73.07	1.22	2.16	CLEAR

LEGEND

- TELSTRA PILLAR
- TELSTRA MARKER POST
- TELSTRA PIT
- POWER POLE
- ELECTRICAL PILLAR
- POWER LIGHT POLE
- LIGHT POLE
- GAS METER
- GAS DIRECTION MARKER
- WATER MAIN
- HYDRANT
- RECYCLED WATER
- WATER METER
- STOP VALVE
- WATER TAP
- STREET SIGN
- PRAM CROSSING
- VEHICLE CROSSING
- TREE: Ø DIAMETER S SPREAD
- SEWER MANHOLE
- SEWER VENT
- SEWER LAMPHOLE
- STORMWATER PIT
- STORMWATER GRATE
- SURFACE INLET PIT
- STORMWATER PIPE INCLUDING PIPE SIZE
- HEADWALL
- CLOTHES LINE
- E OVERHEAD ELECTRICITY LINE
- T OVERHEAD TELECOM LINE
- S SEWER LINE

A1

L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND

0 1 2 3 4 5 10m
1 : 100

VAUGHAN WADY
REGISTERED SURVEYOR #8684
Surveyor Registered under the
Surveying and Spatial Information Act 2002

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
ACCURACY OF ORIGIN : ± 0.001m

DIAL 1100 BEFORE YOU DIG
www.1100.com.au

DIAGRAM: N.T.S.
APPROX TN
M.M. 12.593°
FOR BASIX PURPOSES

No.685
THREE - FIVE STOREY
BRICK UNITS
FLAT ROOF

ROOF RL=76.67
ROOF RL=76.7
ROOF RL=75.49
ROOF RL=69.48
ROOF RL=69.49
FOR WINDOW DETAILS PLEASE SEE ELEVATION PLAN
2nd FLOOR VERANDAH RL=73.45
1st FLOOR VERANDAH RL=70.72

SP4707

No.683
ONE & TWO STOREY
BRICK COTTAGE
TILE ROOF

RIDGE RL=74.0
RIDGE RL=75.57
RIDGE RL=75.7
ROOF LINE RL=71.38
ROOF LINE RL=70.92
ROOF LINE RL=71.21
GUTTER RL=71.15
GUTTER RL=71.12
GUTTER RL=71.25
GUTTER RL=70.9
VERANDAH RL=68.24
SUB FLOOR RL=68.56
GFL=68.85

No.681
SINGLE STOREY
BRICK COTTAGE
TILE ROOF

2 DP316716
1 DP666626

No.9
ONE & TWO STOREY
RENDERED COTTAGE
TILE ROOF
FOR WINDOW DETAILS PLEASE SEE ELEVATION PLAN
VERANDAH RL=66.91
RIDGE RL=71.17

No.11
ONE & TWO STOREY
RENDERED COTTAGE
TILE ROOF
RIDGE RL=72.23
RIDGE RL=72
GUTTER RL=71.03

TILED AREA
TILED DRIVEWAY
GARDEN AREA
GRASS AREA
METAL AWNING
TIMBER
PALING
FENCE
CONIFER HEDGING APPROX. 4m HIGH
THICK HEDGE TOP RL=69.82

PLEASE NOTE:
SOME ADJOINING INFORMATION NOT VISIBLE FROM SUBJECT PROPERTY DUE TO DENSE VEGETATION AND OR FENCING. IF MORE INFORMATION IS REQUIRED, ACCESS TO THIS PROPERTY WILL NEED TO BE OBTAINED BY OUR SURVEYORS.

AREA LOT B VIDE DP 324744: 37.9 m² BY CALC : 40.98 m²	AREA LOT 4 VIDE DP 192614: 524.8 m² BY CALC : 528.4 m²	AREA LOT A VIDE DP 324744: 436.3 m² BY CALC : 437. m²
AREA LOT 2 VIDE DP 10314: 474.2 m² BY CALC : 480.3 m²	AREA LOT 1 VIDE DP 168877: 550.1 m² BY CALC : 552.4 m²	AREA LOT 2 VIDE DP 316716: 550.1 m² BY CALC : 550.5 m²
AREA LOT 1 VIDE DP 169310: 499.5 m² BY CALC : 504.3 m²	AREA LOT 1 VIDE DP 167942: 569.1 m² BY CALC : 573.2 m²	AREA LOT 1 VIDE DP 666626: 670.2 m² BY CALC : 678.0 m²

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
1	75.5	1.54	0.92	CLEAR
2	73.01	1.1	1.07	CLEAR
3	72.1	2.05	0.85	DOOR
4	73.01	1.1	1.1	CLEAR
5	73.01	1.1	1.2	CLEAR
6	69.8	2.1	1.1	DOOR
7	71.72	1.46	2.8	CLEAR
8	71.72	1.46	2.8	CLEAR
9	71.0	2.18	1.9	CLEAR
10	71.0	2.18	1.9	CLEAR
11	70.83	2.5	4.53	CLEAR

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
11	70.83	2.5	4.53	CLEAR
12	70.83	2.5	4.53	CLEAR
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14	73.87	1.2	2	CLEAR
15	77.3	1.6	1.9	CLEAR
16	77.3	1.6	1.9	CLEAR
17	74.18	0.94	2.18	CLEAR
18	73.3	1.14	1.2	CLEAR
19	71.97	1.24	1	CLEAR
20	73.07	1.22	2.16	CLEAR
21	73.07	1.22	2.16	CLEAR

LEGEND

- TELSTRA PILLAR
- TELSTRA MARKER POST
- TELSTRA PIT
- POWER POLE
- ELECTRICAL PILLAR
- POWER LIGHT POLE
- LIGHT POLE
- GAS METER
- GAS DIRECTION MARKER
- WATER MAIN
- HYDRANT
- RECYCLED WATER
- WATER METER
- STOP VALVE
- WATER TAP
- STREET SIGN
- PRAM CROSSING
- VEHICLE CROSSING
- TREE: Ø DIAMETER S SPREAD
- SEWER MANHOLE
- SEWER VENT
- SEWER LAMPHOLE
- STORMWATER PIT
- STORMWATER GRATE
- SURFACE INLET PIT
- STORMWATER PIPE INCLUDING PIPE SIZE Ø225
- HEADWALL
- CLOTHES LINE
- E OVERHEAD ELECTRICITY LINE
- T OVERHEAD TELECOM LINE
- S SEWER LINE

PLEASE NOTE:
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SURVPLAN SURVEYING // PLANNING // DESIGN
ABN 83 914 613 296
PO BOX 242 HELENSBURGH NSW 2508
PH 0420 944 413 Email: matt@survplan.com.au

Rev.	Amendments	Date
A	ADJ.BUILDING DESCRIPTION	17.09.18
B	ADDITIONAL SURVEY INFORMATION	12.04.21
C	UPDATE SURVEY INFORMATION	17.11.23

PLAN SHOWING DETAIL AND LEVELS OVER LOT 2 DP10314 - LOT 1 DP167942 BEING No.671-683 OLD SOUTH HEAD RD VAUCLUSE FOR DESIGN PURPOSES AND TO SUPPORT A DEVELOPMENT APPLICATION

JOB No. 1308		YOUR REF: MEISSEN PROPERTIES	
DRAWING No. 1308CO_MHN.dwg		CLIENT: MHN DESIGN UNION	
SCALE: 1:100 (A1)	SURVEYED M.S. DATE: 5.12.17	DRAWN M.S. DATE: 11.12.17	CHECKED M.S. DATE: 14.12.17
DATUM: A.H.D.			
SHEET: 5 OF 9			

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A1

L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND

0 1 2 3 4 5 10m

1 : 100

VAUGHAN WADY
REGISTERED SURVEYOR #8684
Surveyor Registered under the
Surveying and Spatial Information Act 2002

DIAGRAM: N.T.S.

APPROX TN M.M. 12.593°

FOR BASIX PURPOSES

FOR WINDOW DETAILS PLEASE SEE ELEVATION PLAN

No.679
SINGLE STOREY
RENDERED COTTAGE
TILE ROOF

No.677
ONE & TWO STOREY
RENDERED COTTAGE
TILE ROOF

No.675
ONE & TWO STOREY
RENDERED COTTAGE
TILE ROOF

No.673
SINGLE STOREY

No.2
THREE & FOUR STOREY
BRICK UNITS
FLAT ROOF

1 DP167942
1 DP168877
4 DP192614
1 DP169310

AREA LOT B VIDE DP 324744: 37.9 m² BY CALC : 40.98 m²	AREA LOT 4 VIDE DP 192614: 524.8 m² BY CALC : 528.4 m²	AREA LOT A VIDE DP 324744: 436.3 m² BY CALC : 437. m²
AREA LOT 2 VIDE DP 10314: 474.2 m² BY CALC : 480.3 m²	AREA LOT 1 VIDE DP 168877: 550.1 m² BY CALC : 552.4 m²	AREA LOT 2 VIDE DP 316716: 550.1 m² BY CALC : 550.5 m²
AREA LOT 1 VIDE DP 169310: 499.5 m² BY CALC : 504.3 m²	AREA LOT 1 VIDE DP 167942: 569.1 m² BY CALC : 573.2 m²	AREA LOT 1 VIDE DP 666626: 670.2 m² BY CALC : 678.0 m²

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
ACCURACY OF ORIGIN : ± 0.001m

DIAL 1100 BEFORE YOU DIG
www.1100.com.au

LEGEND

- TELSTRA PILLAR
- TELSTRA MARKER POST
- TELSTRA PIT
- POWER POLE
- ELECTRICAL PILLAR
- POWER LIGHT POLE
- LIGHT POLE
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- WATER MAIN
- HYDRANT
- RECYCLED WATER
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- WATER TAP
- STREET SIGN
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6	69.8	2.1	1.1	DOOR
7	71.72	1.46	2.8	CLEAR
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9	71.0	2.18	1.9	CLEAR
10	71.0	2.18	1.9	CLEAR
11	70.83	2.5	4.53	CLEAR

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
11	70.83	2.5	4.53	CLEAR
12	70.83	2.5	4.53	CLEAR
13	70.99	2.28	7.96	CLEAR
14	73.87	1.2	2	CLEAR
15	77.3	1.6	1.9	CLEAR
16	77.3	1.6	1.9	CLEAR
17	74.18	0.94	2.18	CLEAR
18	73.3	1.14	1.2	CLEAR
19	71.97	1.24	1	CLEAR
20	73.07	1.22	2.16	CLEAR
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JOB No. 1308		YOUR REF: MEISSEN PROPERTIES	
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DATUM: A.H.D.			
SHEET: 6 OF 9			

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A1

L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND

0 1 2 3 4 5 10m
1 : 100

No.671
TWO STOREY
RENDERED COTTAGE
TILE ROOF

No.699
ONE & TWO STOREY
BRICK UNITS AND MIXED
BUSINESS UNITS
METAL ROOF

SINGLE STOREY
BRICK FLATS
TILE ROOF

~31.8 TITLE
~31.885 SURVEY

VERANDAH RL=75.47
FL=72.26
RIDGE RL=80.7
RIDGE RL=79.65
1ST FL=75.57
VERANDAH RL=75.45
RIDGE RL=77.63
PARAPET RL=79.28
ROOF RL=74.6
ROOF RL=78.62
AWNING RL=74.65
AWNING RL=74.49
GUTTER RL=78.3
GUTTER RL=78.27
GUTTER RL=75.17
GUTTER RL=74.8
GUTTER RL=76.3
GUTTER RL=75.5
GUTTER RL=75.04
GUTTER RL=77.84
GUTTER RL=75.17
GUTTER RL=74.7
GUTTER RL=75.34
GUTTER RL=75.98
GUTTER RL=75.83
GUTTER RL=74.82
GUTTER RL=76.2
FL=74.83
FL=71.3
FL=71.5
FL=72.09
FL=71.83
FL=71.95
FL=72.33
FL=72.47
FL=72.51
FL=72.30
FL=71.59
FL=71.63
FL=71.51
FL=71.26
FL=71.37
FL=71.56
FL=71.52
FL=71.32
FL=71.34
FL=71.21
FL=71.07
FL=71.87
FL=71.89
FL=71.68
FL=71.90
FL=71.94
FL=71.98
FL=72.07
FL=72.08
FL=72.18
FL=72.15
FL=72.22
FL=72.27
FL=72.32
FL=72.44
FL=72.55
FL=72.39
FL=72.08
FL=71.97
FL=71.91
FL=72.05
FL=72.00
FL=72.52
FL=72.55
FL=72.61
FL=72.76
FL=72.91
FL=72.72
FL=72.52
FL=72.51
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OLD SOUTH HEAD ROAD
OCEANVIEW AVENUE
FOOTPATH
CONCRETE
KERB
AND
GUTTER
CONCRETE DRIVEWAY
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METAL ROOF
BRICK BUILDING
METAL ROOF
GARAGE
METAL ROOF
METAL
CARPORT
BRICK GARAGE
METAL ROOF
CONCRETE
DRIVEWAY
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SP4318

DIAGRAM:
N.T.S.

APPROX TN 1
12.593°
M.M.

FOR BASIX PURPOSES

N

DIAL 1100
BEFORE YOU DIG
www.1100.com.au

THE POSITION OF THE SEWER MAIN HAS BEEN SCALED FROM A DIAGRAM SUPPLIED BY SYDNEY WATER CORPORATION AND IS THEREFORE APPROXIMATE ONLY. THE EXACT LOCATION SHOULD BE DETERMINED ON SITE PRIOR TO ANY COMMENCEMENT OF WORKS.

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
ACCURACY OF ORIGIN : ± 0.001m

VAUGHAN WADY
REGISTERED SURVEYOR #8684
Surveyor Registered under the
Surveying and Spatial Information Act 2002

LEGEND

- TELSTRA PILLAR
- TELSTRA MARKER POST
- TELSTRA PIT
- POWER POLE
- ELECTRICAL PILLAR
- POWER LIGHT POLE
- LIGHT POLE
- GAS METER
- GAS DIRECTION MARKER
- WATER MAIN
- HYDRANT
- RECYCLED WATER
- WATER METER
- STOP VALVE
- WATER TAP
- STREET SIGN
- PRAM CROSSING
- VEHICLE CROSSING
- TREE: Ø DIAMETER S SPREAD
- SEWER MANHOLE
- SEWER VENT
- SEWER LAMPHOLE
- STORMWATER PIT
- STORMWATER GRATE
- SURFACE INLET PIT
- STORMWATER PIPE INCLUDING PIPE SIZE
- HEADWALL
- CLOTHES LINE
- E OVERHEAD ELECTRICITY LINE
- T OVERHEAD TELECOM LINES
- S SEWER LINE

AREA LOT B	AREA LOT 4	AREA LOT A
VIDE DP 324744: 37.9 m²	VIDE DP 192614: 524.8 m²	VIDE DP 324744: 436.3 m²
BY CALC : 40.98 m²	BY CALC : 528.4 m²	BY CALC : 437. m²
AREA LOT 2	**AREA LOT 1**	**AREA LOT 2**
VIDE DP 10314: 474.2 m²	VIDE DP 168877: 550.1 m²	VIDE DP 316716: 550.1 m²
BY CALC : 480.3 m²	BY CALC : 552.4 m²	BY CALC : 550.5 m²
AREA LOT 1	**AREA LOT 1**	**AREA LOT 1**
VIDE DP 169310: 499.5 m²	VIDE DP 167942: 569.1 m²	VIDE DP 666626: 670.2 m²
BY CALC : 504.3 m²	BY CALC : 573.2 m²	BY CALC : 678.0 m²

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
1	75.5	1.54	0.92	CLEAR
2	73.01	1.1	1.07	CLEAR
3	72.1	2.05	0.85	DOOR
4	73.01	1.1	1.1	CLEAR
5	73.01	1.1	1.2	CLEAR
6	69.8	2.1	1.1	DOOR
7	71.72	1.46	2.8	CLEAR
8	71.72	1.46	2.8	CLEAR
9	71.0	2.18	1.9	CLEAR
10	71.0	2.18	1.9	CLEAR
11	70.83	2.5	4.53	CLEAR

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
11	70.83	2.5	4.53	CLEAR
12	70.83	2.5	4.53	CLEAR
13	70.99	2.28	7.96	CLEAR
14	73.87	1.2	2	CLEAR
15	77.3	1.6	1.9	CLEAR
16	77.3	1.6	1.9	CLEAR
17	74.18	0.94	2.18	CLEAR
18	73.3	1.14	1.2	CLEAR
19	71.97	1.24	1	CLEAR
20	73.07	1.22	2.16	CLEAR
21	73.07	1.22	2.16	CLEAR

SURVPLAN SURVEYING // PLANNING // DESIGN
ABN 83 914 613 296
PO BOX 242 HELENSBURGH NSW 2508
PH 0420 944 413 Email: matt@survplan.com.au

Rev.	Amendments	Date
A	ADJ.BUILDING DESCRIPTION	17.09.18
B	ADDITIONAL SURVEY INFORMATION	12.04.21
C	UPDATE SURVEY INFORMATION	17.11.23

PLAN SHOWING DETAIL AND LEVELS OVER LOT 2 DP10314 - LOT 1 DP167942 BEING No.671-683 OLD SOUTH HEAD RD VAUCLUSE FOR DESIGN PURPOSES AND TO SUPPORT A DEVELOPMENT APPLICATION

JOB No. 1308		YOUR REF: MEISSEN PROPERTIES	
DRAWING No. 1308CO_MHN.dwg		CLIENT: MHN DESIGN UNION	
SCALE: 1:100 (A1)	SURVEYED M.S. DATE: 5.12.17	DRAWN M.S. DATE: 11.12.17	CHECKED M.S. DATE: 14.12.17
DATUM: A.H.D.			
SHEET: 7 OF 9			

WARNING:

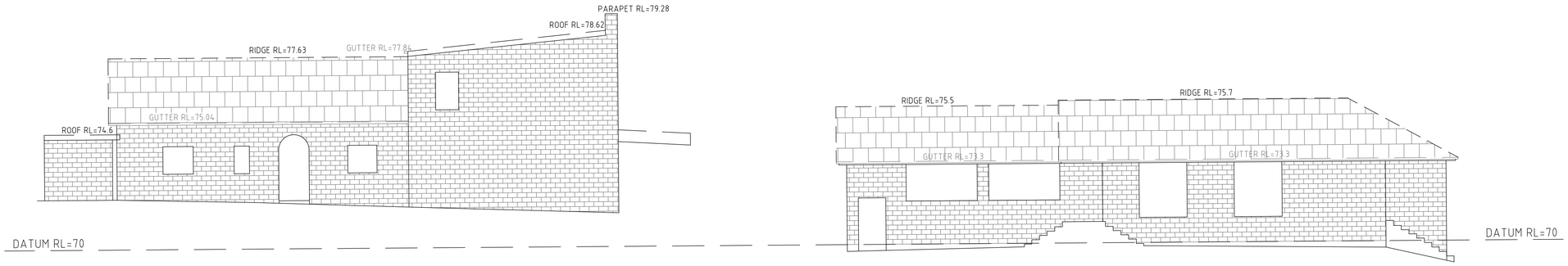
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2. THE BOUNDARIES SHOWN HAVE BEEN COMPILED FROM THE INFORMATION SUPPLIED BY THE DEPARTMENT OF LANDS AND THEREFORE THE DIMENSIONS, AREA AND LOCATION OF EASEMENTS ARE SUBJECT TO A IDENTIFICATION SURVEY.
3. ALL DETAILS AND FEATURES SHOWN HAVE BEEN PLOTTED IN RELATION TO THE OCCUPATIONS, FENCING AND/OR OLD BRICK/RENDERED WALLS. AND ARE APPROXIMATE ONLY. A BOUNDARY SURVEY SHOULD BE DONE TO DETERMINE THE POSITIONS ACCURATELY.
4. SERVICES SHOWN HEREON ARE THOSE THAT WERE VISIBLE AT THE TIME OF SURVEY AND HAVE BEEN LOCATED BY FIELD SURVEY. FURTHER SERVICES MAY BE PRESENT. PRIOR TO ANY CONSTRUCTION OR EXCAVATION ON SITE THE RELEVANT AUTHORITIES SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES. DIAL BEFORE YOU DIG!
5. THIS SURVEY SHOULD NOT BE USED TO SETOUT BOUNDARY FENCING OR BUILDING WORKS NEAR OR ON THE BOUNDARIES. A SETOUT PLACING ACCURATE MAKES SHOULD BE CARRIED OUT PRIOR TO ANY BUILDING WORKS.
6. THE CONTOUR INTERVAL IS 0.2m. UNLESS SHOWN OTHERWISE. THE CONTOURS HAVE BEEN PLOTTED FROM INTERPOLATION METHODS.

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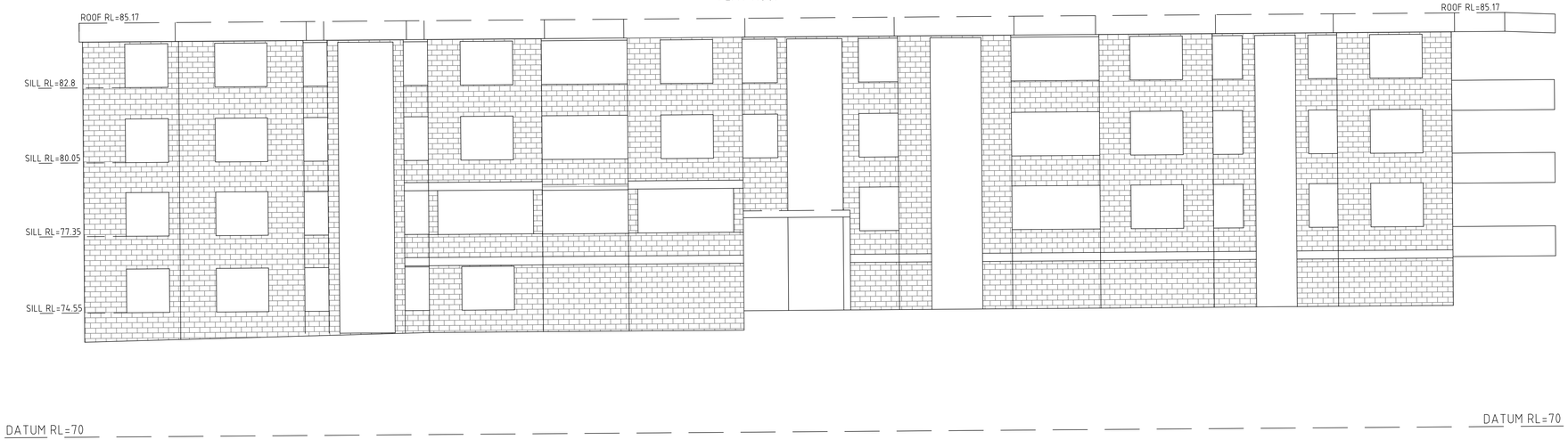
L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND

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ADJOINING ELEVATIONS



No.2
THREE & FOUR STOREY
BRICK UNITS
FLAT ROOF



DIAL 1100 BEFORE YOU DIG
www.1100.com.au

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
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Rev.	Amendments	Date
A	ADJ.BUILDING DESCRIPTION	17.09.18
B	ADDITIONAL SURVEY INFORMATION	12.04.21
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JOB No. 1308		YOUR REF: MEISSEN PROPERTIES	
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6. THE CONTOUR INTERVAL IS 0.2m. UNLESS SHOWN OTHERWISE. THE CONTOURS HAVE BEEN PLOTTED FROM INTERPOLATION METHODS.

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
1	75.5	1.54	0.92	CLEAR
2	73.01	1.1	1.07	CLEAR
3	72.1	2.05	0.85	DOOR
4	73.01	1.1	1.1	CLEAR
5	73.01	1.1	1.2	CLEAR
6	69.8	2.1	1.1	DOOR
7	71.72	1.46	2.8	CLEAR
8	71.72	1.46	2.8	CLEAR
9	71.0	2.18	1.9	CLEAR
10	71.0	2.18	1.9	CLEAR
11	70.83	2.5	4.53	CLEAR

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
11	70.83	2.5	4.53	CLEAR
12	70.83	2.5	4.53	CLEAR
13	70.99	2.28	7.96	CLEAR
14	73.87	1.2	2	CLEAR
15	77.3	1.6	1.9	CLEAR
16	77.3	1.6	1.9	CLEAR
17	74.18	0.94	2.18	CLEAR
18	73.3	1.14	1.2	CLEAR
19	71.97	1.24	1	CLEAR
20	73.07	1.22	2.16	CLEAR
21	73.07	1.22	2.16	CLEAR

LEGEND

- TELSTRA PILLAR
- TELSTRA MARKER POST
- TELSTRA PIT
- POWER POLE
- ELECTRICAL PILLAR
- POWER LIGHT POLE
- LIGHT POLE
- GAS METER
- GAS DIRECTION MARKER
- WATER MAIN
- HYDRANT
- RECYCLED WATER
- WATER METER
- STOP VALVE
- WATER TAP
- STREET SIGN
- PRAM CROSSING
- VEHICLE CROSSING
- TREE: Ø DIAMETER S SPREAD
- SEWER MANHOLE
- SEWER VENT
- SEWER LAMPHOLE
- STORMWATER PIT
- STORMWATER GRATE
- SURFACE INLET PIT
- Ø 225 STORMWATER PIPE INCLUDING PIPE SIZE
- HEADWALL
- CLOTHES LINE
- E OVERHEAD ELECTRICITY LINE
- T OVERHEAD TELECOM LINE
- S SEWER LINE

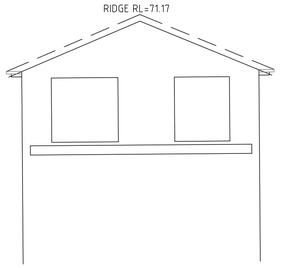
A1

L.G.A. : WAVERLEY
PARISH : ALEXANDRIA
COUNTY : CUMBERLAND

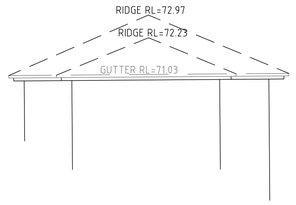
0 1 2 3 4 5 10m
1 : 100

ADJOINING ELEVATIONS

No.9
ONE & TWO STOREY
RENDERED COTTAGE
TILE ROOF
RIDGE RL=71.17

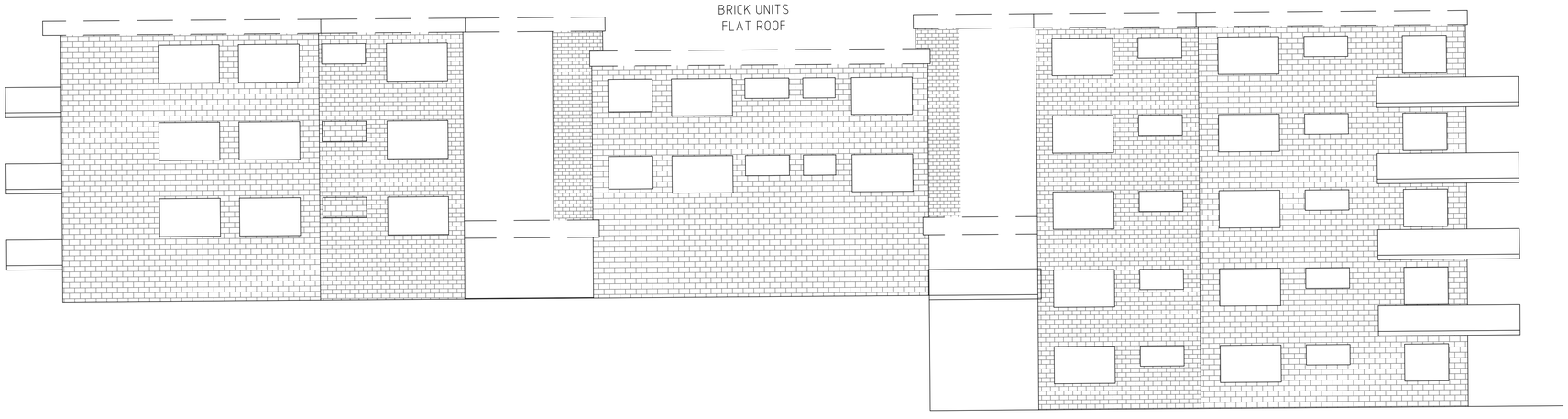


No.11
ONE & TWO STOREY
RENDERED COTTAGE
TILE ROOF



DATUM RL=60

No.685
THREE - FIVE STOREY
BRICK UNITS
FLAT ROOF



DATUM RL=60

DIAL 1100 BEFORE YOU DIG
www.1100.com.au

ORIGIN OF LEVELS :
SSM 60860 RL=65.336 (AHD) FOUND NEAR THE INTERSECTION OF MILITARY ROAD & OLD SOUTH HEAD ROAD.
ACCURACY OF ORIGIN : ± 0.001m

VAUGHAN WADY
REGISTERED SURVEYOR #8684
Surveyor Registered under the
Surveying and Spatial Information Act 2002

SURVPLAN SURVEYING // PLANNING // DESIGN
ABN 83 914 613 296
PO BOX 242 HELENSBURGH NSW 2508
PH 0420 944 413 Email: matt@survplan.com.au

Rev.	Amendments	Date
A	ADJ.BUILDING DESCRIPTION	17.09.18
B	ADDITIONAL SURVEY INFORMATION	12.04.21
C	UPDATE SURVEY INFORMATION	17.11.23

PLAN SHOWING DETAIL AND LEVELS OVER LOT 2 DP10314 - LOT 1 DP167942 BEING No.671-683 OLD SOUTH HEAD RD VAUCLUSE FOR DESIGN PURPOSES AND TO SUPPORT A DEVELOPMENT APPLICATION

JOB No. 1308		YOUR REF: MEISSEN PROPERTIES		
DRAWING No. 1308CO_MHN.dwg		CLIENT: MHN DESIGN UNION		
SCALE: 1:100 (A1)	SURVEYED M.S. DATE: 5.12.17	DRAWN M.S. DATE: 11.12.17	CHECKED M.S. DATE: 14.12.17	
DATUM: A.H.D.				
SHEET: 9 OF 9				

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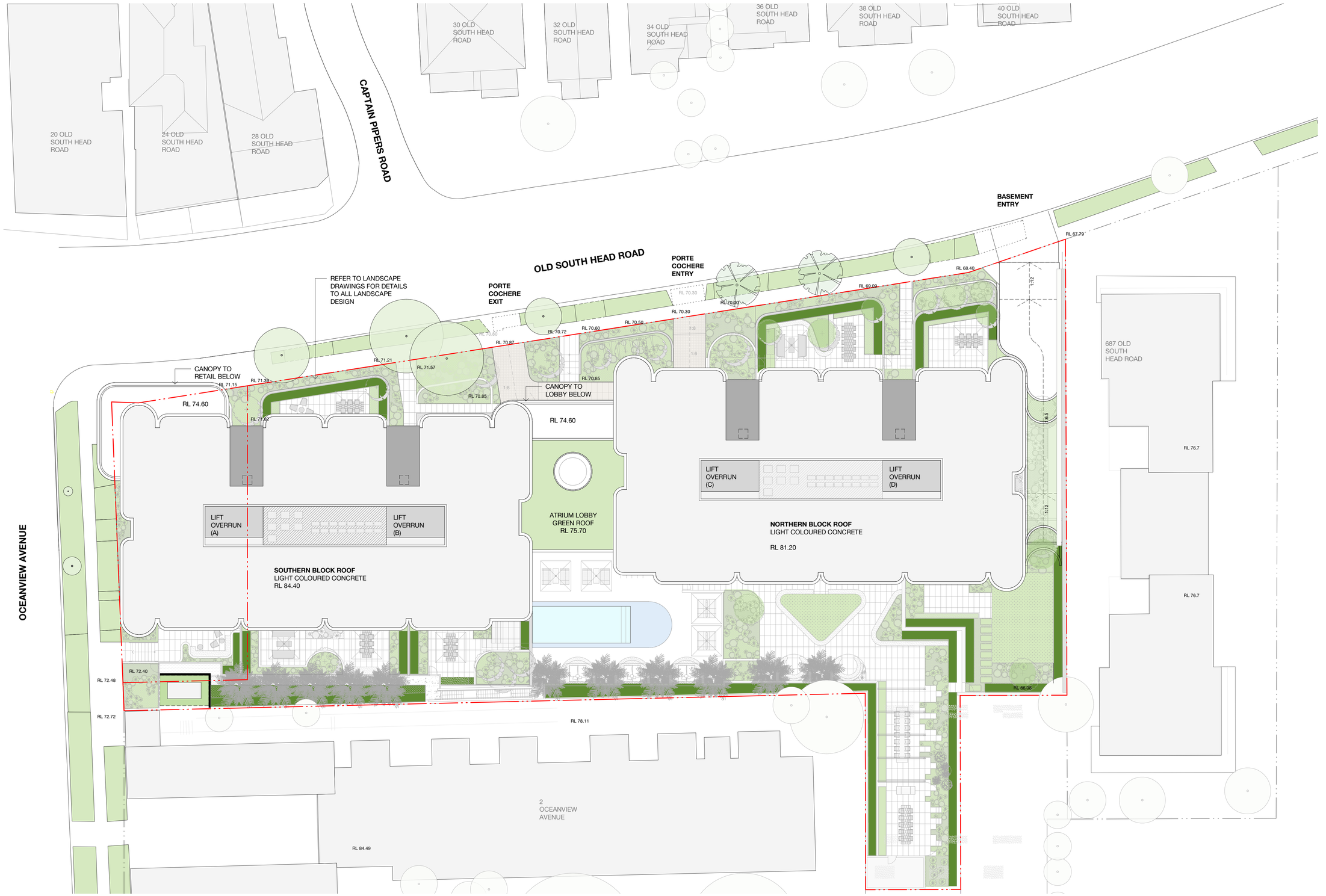
1. SURVPLAN OWNS THE RIGHTS TO THIS SURVEY AND RELATED DOCUMENTS. THE INFORMATION PROVIDED IN THIS DOCUMENT IS FOR THE CLIENT NAMED WITHIN. USE OF THIS PLAN BY ANY OTHER PERSON/S IS NOT PERMITTED UNLESS WRITTEN CONSENT IS PROVIDED BY SURVPLAN.
2. THE BOUNDARIES SHOWN HAVE BEEN COMPILED FROM THE INFORMATION SUPPLIED BY THE DEPARTMENT OF LANDS AND THEREFORE THE DIMENSIONS, AREA AND LOCATION OF EASEMENTS ARE SUBJECT TO A IDENTIFICATION SURVEY.
3. ALL DETAILS AND FEATURES SHOWN HAVE BEEN PLOTTED IN RELATION TO THE OCCUPATIONS, FENCING AND/OR OLD BRICK/RENDERED WALLS. AND ARE APPROXIMATE ONLY. A BOUNDARY SURVEY SHOULD BE DONE TO DETERMINE THE POSITIONS ACCURATELY.
4. SERVICES SHOWN HEREON ARE THOSE THAT WERE VISIBLE AT THE TIME OF SURVEY AND HAVE BEEN LOCATED BY FIELD SURVEY. FURTHER SERVICES MAY BE PRESENT. PRIOR TO ANY CONSTRUCTION OR EXCAVATION ON SITE THE RELEVANT AUTHORITIES SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES. DIAL BEFORE YOU DIG!
5. THIS SURVEY SHOULD NOT BE USED TO SETOUT BOUNDARY FENCING OR BUILDING WORKS NEAR OR ON THE BOUNDARIES. A SETOUT PLACING ACCURATE MAKES SHOULD BE CARRIED OUT PRIOR TO ANY BUILDING WORKS.
6. THE CONTOUR INTERVAL IS 0.2m. UNLESS SHOWN OTHERWISE. THE CONTOURS HAVE BEEN PLOTTED FROM INTERPOLATION METHODS.

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
1	75.5	1.54	0.92	CLEAR
2	73.01	1.1	1.07	CLEAR
3	72.1	2.05	0.85	DOOR
4	73.01	1.1	1.1	CLEAR
5	73.01	1.1	1.2	CLEAR
6	69.8	2.1	1.1	DOOR
7	71.72	1.46	2.8	CLEAR
8	71.72	1.46	2.8	CLEAR
9	71.0	2.18	1.9	CLEAR
10	71.0	2.18	1.9	CLEAR
11	70.83	2.5	4.53	CLEAR

WINDOW	SILL RL	HEIGHT	WIDTH	GLASS TYPE
11	70.83	2.5	4.53	CLEAR
12	70.83	2.5	4.53	CLEAR
13	70.99	2.28	7.96	CLEAR
14	73.87	1.2	2	CLEAR
15	77.3	1.6	1.9	CLEAR
16	77.3	1.6	1.9	CLEAR
17	74.18	0.94	2.18	CLEAR
18	73.3	1.14	1.2	CLEAR
19	71.97	1.24	1	CLEAR
20	73.07	1.22	2.16	CLEAR
21	73.07	1.22	2.16	CLEAR

LEGEND

- TELSTRA PILLAR
- TELSTRA MARKER POST
- TELSTRA PIT
- POWER POLE
- ELECTRICAL PILLAR
- POWER LIGHT POLE
- LIGHT POLE
- GAS METER
- GAS DIRECTION MARKER
- WATER MAIN
- HYDRANT
- RECYCLED WATER
- WATER METER
- STOP VALVE
- WATER TAP
- STREET SIGN
- PRAM CROSSING
- VEHICLE CROSSING
- TREE: Ø DIAMETER S SPREAD
- SEWER MANHOLE
- SEWER VENT
- SEWER LAMPHOLE
- STORMWATER PIT
- STORMWATER GRATE
- SURFACE INLET PIT
- STORMWATER PIPE INCLUDING PIPE SIZE (Ø 0.225)
- HEADWALL
- CLOTHES LINE
- E OVERHEAD ELECTRICITY LINE
- T OVERHEAD TELECOM LINE
- S SEWER LINE



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DA01
SITE PLAN

Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
2	23.11.08	ISSUE FOR INFORMATION	SH	
1	23.11.30	ISSUE FOR INFORMATION	SH	

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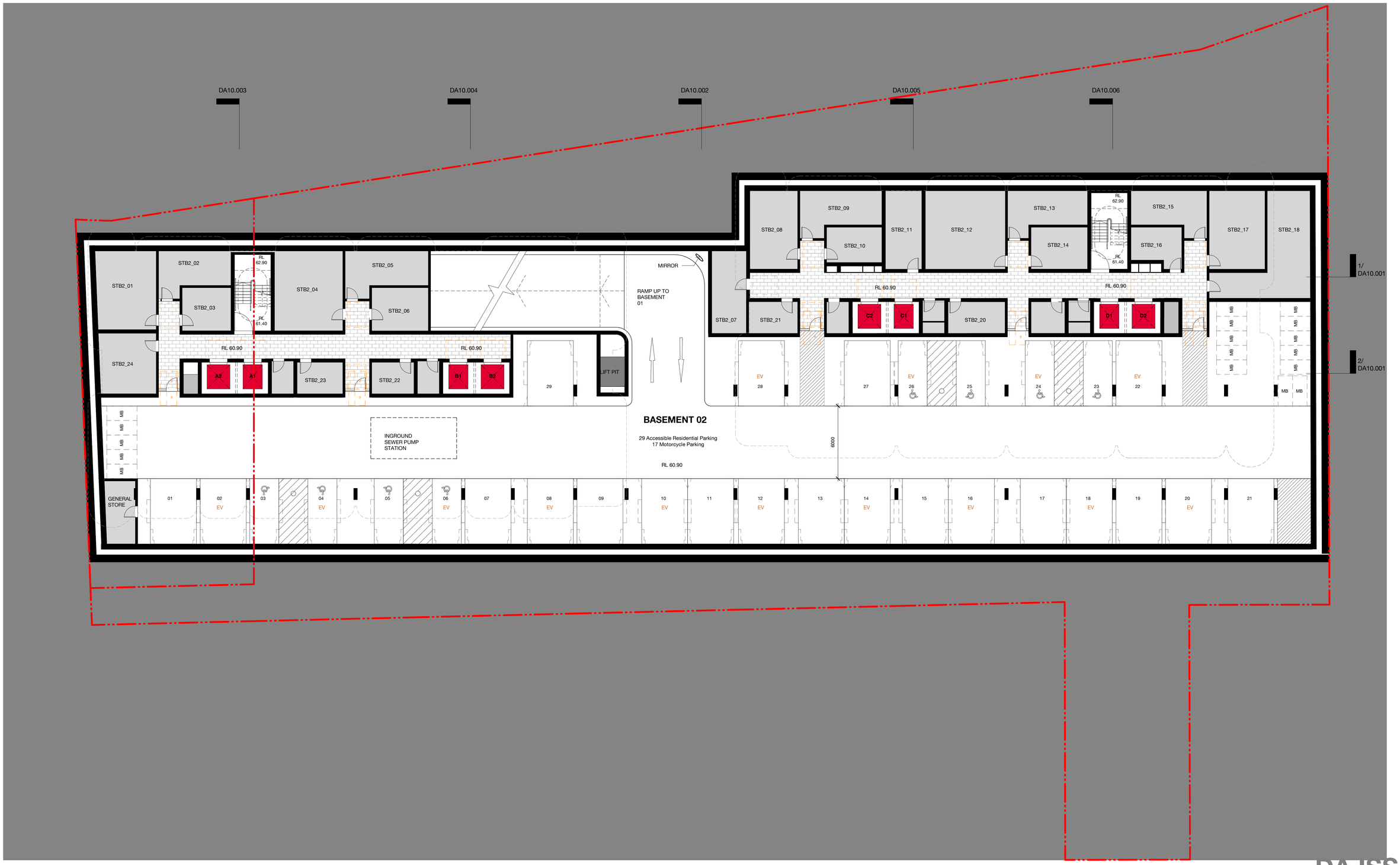
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Drawn	SH	Checked	SH
Project no.	S12551		
Status	DEVELOPMENT APPLICATION		
Plot Date	15/12/2023 10:08:23 AM		
Drawing no.		Revision	
DA01.003		A	

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VAUCLUSE SENIORS LIVING
669- 683 OSH RD VAUCLUSE

DA03
BASEMENT 02

Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
3	23.11.08	ISSUE FOR INFORMATION	SH	
2	23.11.21	ISSUE FOR INFORMATION	SH	
1	23.10.25	ISSUE FOR INFORMATION	SH	

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Scale	1 : 150 @ A1
Drawn	SH
Checked	SH
Project no.	S12551
Status	DEVELOPMENT APPLICATION
Plot Date	15/12/2023 10:08:29 AM
Drawing no.	DA03.001
Revision	A

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DA10.003
DA10.004
DA10.002
DA10.005
DA10.006
RAINWATER TANK B
STB1_01
STB1_02
STB1_03
RETAIL STORAGE
RL 65.90
RL 64.40
STORE
MIRROR
RAMP DOWN TO BASEMENT 02
RL 63.90
A2
A1
GB RM
GB STORE
B1
B2
BICYCLE STORAGE (38)
LOADING ZONE
BULK STORAGE
DOCK-MASTER
COLD WATER PUMP ROOM
HOT WATER PLANT ROOM
FIRE PUMP ROOM & SPR VALVE ROOM
RAINWATER TANK
RAINWATER FILTRATION TANK
GENERAL STORE
COMMS ROOM
C2
C1
D1
D2
CAR SHARE 01
CAR SHARE 02
EV
LOADING ZONE FOR BLOCK C
GB STORE
V01
BLOCK D LOADING
V02
1:6.5
1:12
1/ DA10.001
2/ DA10.001
MIRROR & TRAFFIC SIGNAL
6000
BASEMENT 01
11 Accessible Residential Parking
6 Accessible Visitor Parking
RL 63.90
MIRRORS
01
02
03
04
05
06
07
POOL SERVICES TO POOL ABOVE
08
09
10
11
V06
V05
V04
V03
GENERAL STORE

DA ISSUE

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Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
2	23.11.21	ISSUE FOR INFORMATION	SH	
1	23.10.25	ISSUE FOR INFORMATION	SH	

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DA03
BASEMENT 01

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Scale	1 : 150 @ A1
Drawn	SH
Checked	SH
Project no.	S12551
Status	DEVELOPMENT APPLICATION
Plot Date	15/12/2023 10:08:35 AM
Drawing no.	DA03.002
Revision	A

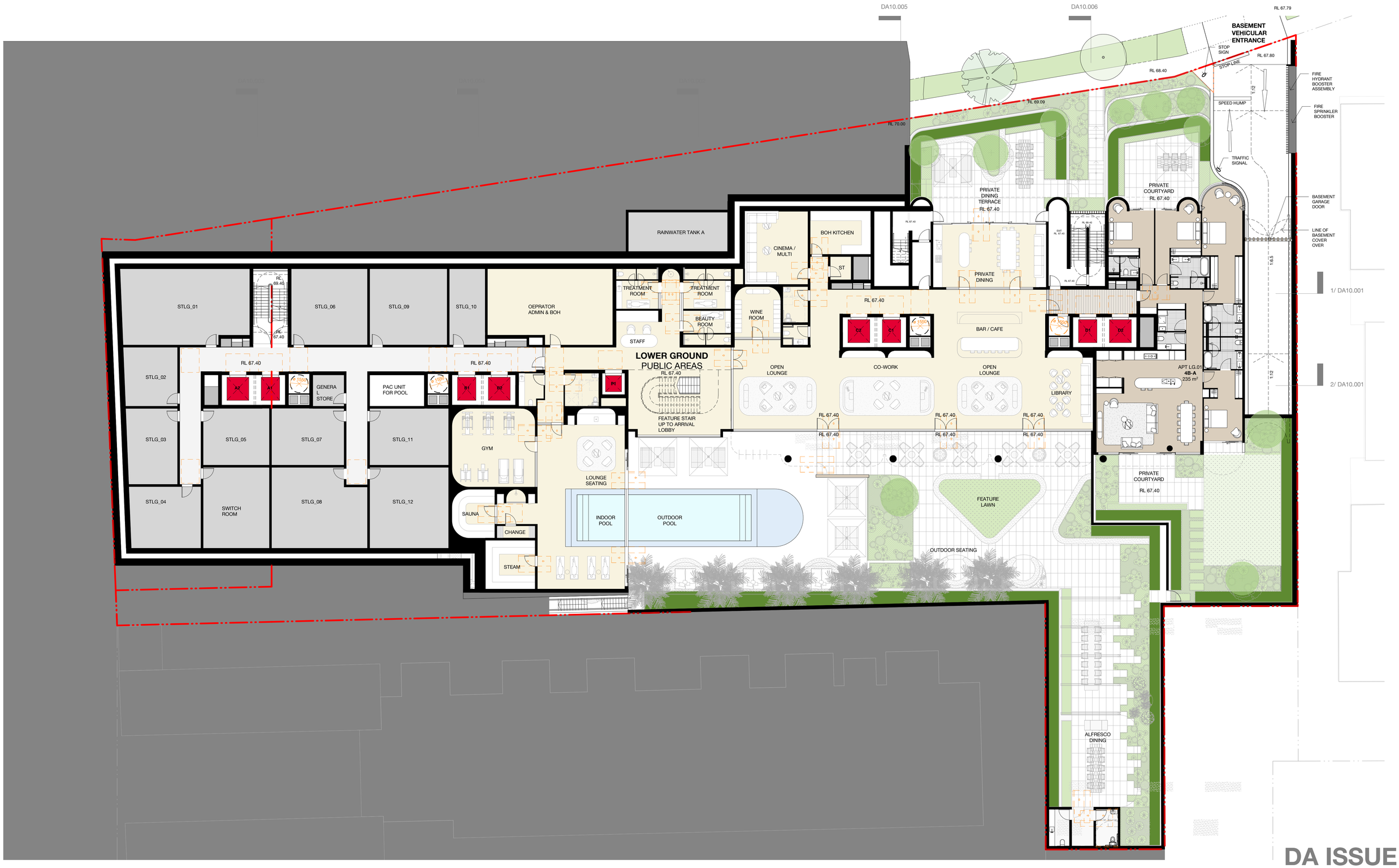
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Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
2	23.11.21	ISSUE FOR INFORMATION	SH	
1	23.10.25	ISSUE FOR INFORMATION	SH	

VAUCLUSE SENIORS LIVING
669- 683 OSH RD VAUCLUSE

DA03
GROUND LOWER PLAN

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Scale	1 : 150 @ A1
Drawn	SH
Checked	SH
Project no.	S12551
Status	DEVELOPMENT APPLICATION
Plot Date	15/12/2023 10:08:43 AM
Drawing no.	DA03.003
Revision	A

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OCEANVIEW AVENUE

OLD SOUTH HEAD ROAD

DA10.003 DA10.004 DA10.002 DA10.005 DA10.006

BASEMENT ENTRY

PORTE COCHERE ENTRY

PORTE COCHERE EXIT

PEDESTRIAN ACCESS

REFER TO LANDSCAPE DRAWINGS FOR DETAILS TO ALL LANDSCAPE DESIGN

687 OLD SOUTH HEAD ROAD

1/ DA10.001

2/ DA10.001

RETAIL
225m²
RL 71.00

RETAIL COURTYARD
RL 71.00

SUBSTATION

APT UG.07
2B-E.2
106m²

APT UG.06
3B-E
157m²

APT UG.05
2B-F
111m²

APT UG.04
2B-E
103m²

APT UG.03
3B-D
160m²

APT UG.02
3B-C
137m²

APT UG.01
3B-A
187m²

LINE OF CANOPY ABOVE

LINE OF FLOOR ABOVE

LINE OF OCULUS SKYLIGHT ABOVE

MEETING ROOM

BOARD ROOM

RECEPTION

ARRIVAL LOBBY

UPPER GROUND
RESIDENTIAL LOBBY

VOID TO PUBLIC AREAS BELOW

MAIL

PARCEL

COURTYARD TO LOWER GROUND BELOW

RL 70.80 RL 70.84 RL 71.15 RL 71.39 RL 71.21 RL 71.57 RL 70.80 RL 70.72 RL 70.60 RL 70.50 RL 70.30 RL 70.30 RL 70.00 RL 69.09 RL 68.40 RL 67.79 RL 71.83 RL 70.85 RL 71.25 RL 71.40 RL 72.40 RL 72.48 RL 72.72 RL 78.11 RL 84.49 RL 66.08 RL 67.05

1:8 1:6 1:8 1:8 1:12

2
OCEANVIEW
AVENUE

DA ISSUE

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Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
2	23.11.21	ISSUE FOR INFORMATION	SH	
1	23.10.25	ISSUE FOR INFORMATION	SH	

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DA03
GROUND UPPER PLAN

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Scale	1 : 150 @ A1
Drawn	SH
Checked	SH
Project no.	S12551
Status	DEVELOPMENT APPLICATION
Plot Date	15/12/2023 10:08:52 AM
Drawing no.	DA03.004
Revision	A

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Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
2	23.11.21	ISSUE FOR INFORMATION	SH	
1	23.10.25	ISSUE FOR INFORMATION	SH	

VAUCLUSE SENIORS LIVING
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DA03
LEVEL 01 PLAN

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Scale	1 : 150	@ A1	
Drawn	SH	Checked	SH
Project no.	S12551		
Status	DEVELOPMENT APPLICATION		
Plot Date	15/12/2023 10:09:00 AM		
Drawing no.	DA03.005	Revision	A

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Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
2	23.11.21	ISSUE FOR INFORMATION	SH	
1	23.10.25	ISSUE FOR INFORMATION	SH	

VAUCLUSE SENIORS LIVING
669- 683 OSH RD VAUCLUSE

DA03
LEVEL 02 PLAN

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Scale	1 : 150	@ A1	
Drawn	SH	Checked	SH
Project no.	S12551		
Status	DEVELOPMENT APPLICATION		
Plot Date	15/12/2023 10:09:07 AM		
Drawing no.		Revision	
DA03.006		A	

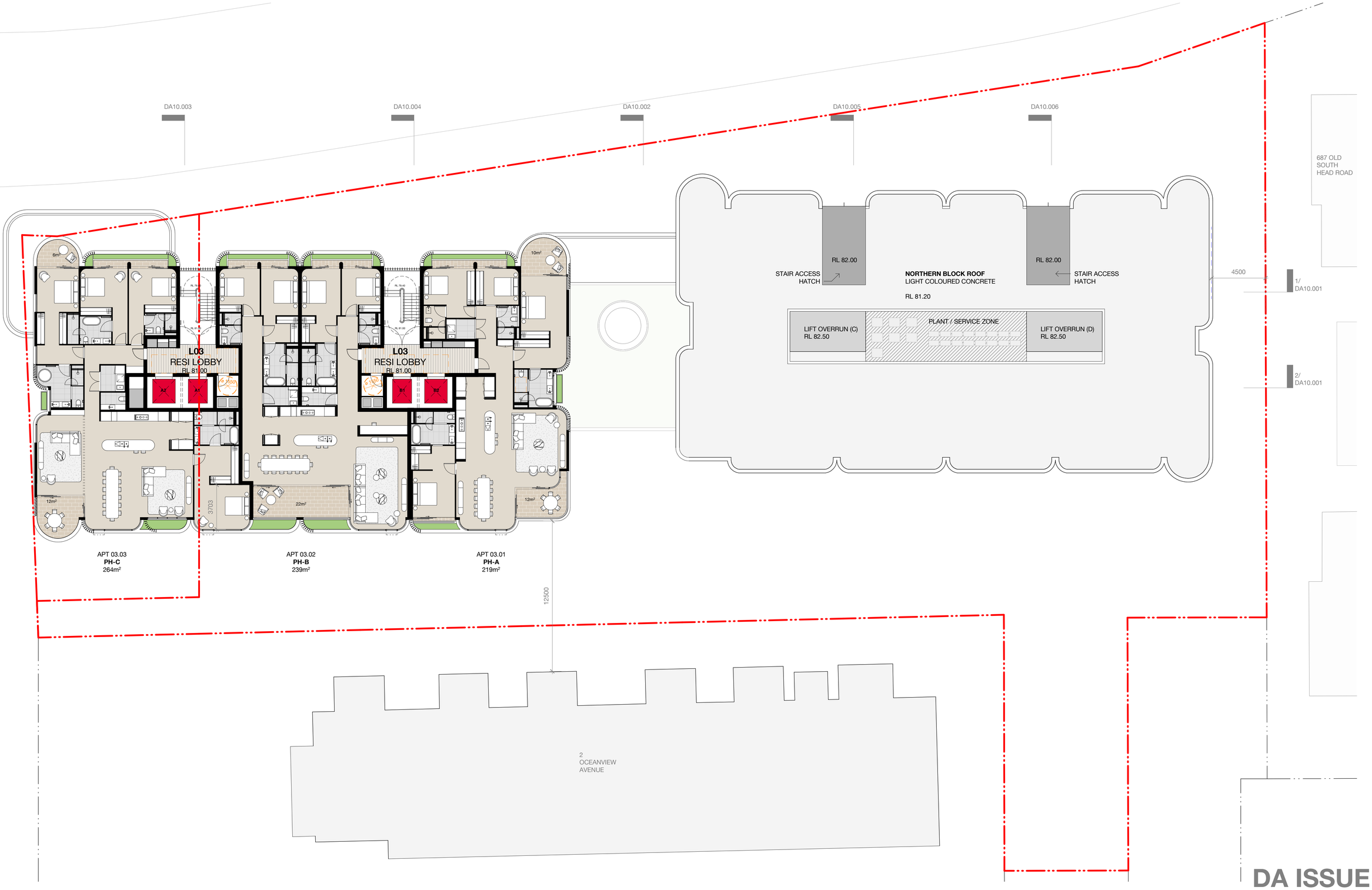
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Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
2	23.11.21	ISSUE FOR INFORMATION	SH	
1	23.10.25	ISSUE FOR INFORMATION	SH	

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DA03
LEVEL 03 PLAN

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Scale	1 : 150	@ A1	
Drawn	SH	Checked	SH
Project no.	S12551		
Status	DEVELOPMENT APPLICATION		
Plot Date	15/12/2023 10:09:14 AM		
Drawing no.	DA03.007	Revision	A

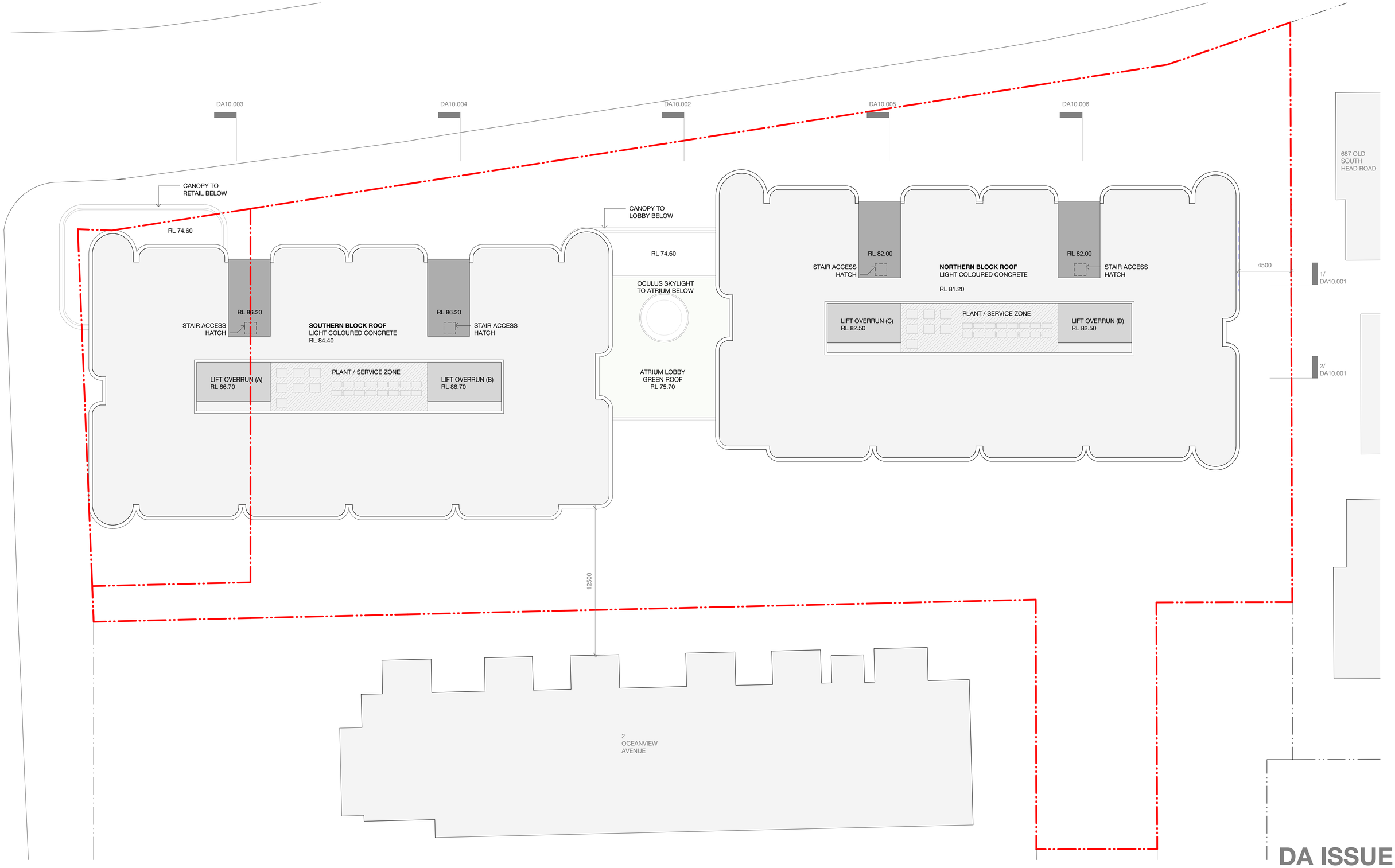
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HOLDINGS PTY LTD

Revision	Date	Description	Initial	Checked
A	23.12.15	ISSUE FOR DA	SH	
2	23.11.21	ISSUE FOR INFORMATION	SH	
1	23.10.25	ISSUE FOR INFORMATION	SH	

VAUCLUSE SENIORS LIVING
669- 683 OSH RD VAUCLUSE

DA03
ROOF PLAN

Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and or the fabrication of any components.

Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the architect for clarification.

All drawings may not be reproduced or distributed without prior permission from the architect.

Scale	1 : 150 @ A1
Drawn	SH Checked SH
Project no.	S12551
Status	DEVELOPMENT APPLICATION
Plot Date	15/12/2023 10:08:14 AM
Drawing no.	Revision

DA03.008 A

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Bates Smart Architects Pty Ltd ABN 68 094 740 986

NSW Nominated Responsible Architects: Kellie Payne Reg. 6454 / Philip Vivian Reg. 6696 / Guy Lake Reg. 7119 / Matthew Allen Reg. 8498

BATESSMART

APPENDIX B

FORMER GEOTECHNICAL BOREHOLE LOGS

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH201**
Hole Depth: **2.20 m**
Sheet: **1 of 1**

Project Name: **Geotechnical Investigation** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **FICO Group** Date Started: **19-AUG-21** Ground Level: **RL66.1m** (approx)
Drill Method: **SFA** Date Completed: **19-AUG-21** Latitude: **----------**
Equipment: **Ute Mounted** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests ID No.	Samples / Tests SPT	Observations / Comments
							Surface: Grass					
Solid Flight Auger	1.9m seepage 19-Aug-21	0.0	66.0		SP	Natural	**TOPSOIL**- Sand, dark brown, fine to medium grained, trace silt and roots.	loose	m			
							SAND- grey-brown, fine to medium grained.	loose	m			
		1.0	65.0		SP					BH201 1.0-1.45m	2 6 9 N=15	
					SP		**SAND**- orange-brown and brown, fine to medium grained, with trace silt and partially indurated nodules.	medium dense	m			
					SP		**SAND**- dark brown and brown, fine to coarse grained.	medium dense	m	BH201 1.6-1.8m		
		2.0	64.0			Bedrock	**SANDSTONE**- grey and orange, fine to coarse grained, likely highly weathered and estimated to be low to medium strength.		wet			seepage water noted
							Refusal at 2.20m					
		3.0	63.0									
		4.0	62.0									
		5.0										

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **19-Aug-21**
Checked By: **Stephen McCormack** Date: **05-SEP-21**

GEE DAVIES BH LOG G21071VAU.GPJ GEE.GDT 5-9-21 2:20:31 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH202**
Hole Depth: **3.95 m**
Sheet: **1 of 1**

Project Name: **Geotechnical Investigation**
Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW**
Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering**
Date Started: **19-AUG-21**
Ground Level: **RL66.05m** (approx)
Drill Method: **Hand Auger**
Date Completed: **19-AUG-21**
Latitude: ----------
Equipment: **Manual**
Longitude: ----------

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Consistency / Density	Moisture	Samples / Tests: ID No.	Samples / Tests: DCP blows/100mm	Observations / Comments
							Surface: Grass				5 10 15	
Hand Auger		0.0	66.0		SP	Natural	**TOPSOIL**- Sand, dark brown and grey, fine to medium grained, with trace roots and silt.	very loose to loose	m			
							SAND- mid-grey, fine to medium grained.	loose	m			
							becoming pale grey from 0.7m.					
		1.0	65.0		SP					BH202 1.2-1.5m		
		2.0	64.0									
					SP		**SAND**- dark brown/brown, fine to medium grained, trace silt and some indurated nodules.	medium dense to dense	m	BH202 2.3-2.5m		
							SAND- orange-brown, fine to coarse grained.	medium dense to dense	m			
	3.8m Seepage 19-Aug-21	3.0	63.0		SP					BH202 3.3-3.5m		
		4.0	62.0					dense	wet			Seepage noted
							Refusal at 3.95m **Caused by sandstone bedrock**					DCP bouncing refusal at 4.1m depth
		5.0										

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **19-Aug-21**
Checked By: **Stephen McCormack** Date: **05-SEP-21**

GEE DAVIES BH LOG G21071VAU.GPJ GEE.GDT 5-9-21 2:20:31 PM

Geo Environmental Engineering
82 Bridge Street
Lane Cove NSW 2066
E info@geoenvironmental.com.au

Log Report Legen

MATERIAL SYMBOL


FILL


CONCRETE


ASPHALT


TOPSOIL


ORGANICS


ESTUARINE MUD


CLAY


SAND


SILT


GRAVEL


Sandy CLAY


Clayey SAND


Clayey SILT


Clayey GRAVEL


Silty CLAY


Silty SAND


Sandy SILT


Sandy GRAVEL


Gravelly CLAY


Gravelly SAND


Gravelly SILT


Silty GRAVEL


CLAY & SAND


SAND & CLAY


SILT & CLAY


GRAVEL & CLAY


CLAY & SILT


SAND & SILT


SILT & SAND


GRAVEL & SAND


CLAY & GRAVEL


SAND & GRAVEL


SILT & GRAVEL


GRAVEL & SILT


Sandy Silty CLAY


Clayey Silty SAND


Sandy Clayey SILT


Sandy Clayey GRAVEL


Silty Sandy CLAY


Silty Clayey SAND


Clayey Sandy SILT


Clayey Sandy GRAVEL


Sandy Gravelly CLAY


Clayey Gravelly SAND


Sandy Gravelly SILT


Silty Clayey GRAVEL


Silty Gravelly CLAY


Silty Gravelly SAND


Clayey Gravelly SILT


Clayey Silty GRAVEL


Gravelly Silty CLAY


Gravelly Silty SAND


Gravelly Clayey SILT


Sandy Silty GRAVEL


Gravelly Sandy CLAY


Gravelly Clayey SAND


Gravelly Sandy SILT


Silty Sandy GRAVEL


SANDSTONE


SHALE


GRANITE


BASALT


SHALE / SANDSTONE


PORCELLANITE


GNEISS


SHALE / CLAYSTONE


MUDSTONE


CLAYSTONE


MUDSTONE / CLAYSTONE


SHALE / SILTSTONE


IRONSTONE

ATER LEVELS


Encountered Water

Standing Water

ABBREVIATIONS

PT	Pushtube
SFA	Solid Flight Auger
PWS	Percussion Window Sampler
HA	Hand Auger
HFA	Hollow Flight Auger

ELL RAPHICS


Cuttings


Bentonite


Screen


Gravel Pack


Grout


Cave-in

GEE LEGEND * * 29/10/09 5:04:07 PM

BOREHOLE REPORT

CLIENT: OSHR AT VAUCLUSE HOLDING PTY LTY **DATE:** 28/06/2018 **BORE No.:** 1

PROJECT: 4 LEVEL RESIDENTIAL DEVELOPMENT **PROJECT No.:** 2018-106 **SHEET:** 1 of 1

LOCATION: 671-679 OLD SOUTH HEAD ROAD, VAUCLUSE **SURFACE LEVEL:** RL å 71.80m

Depth (m)	Description of Strata	Sampling		In Situ Testing		
	PRIMARY SOIL - strength/density, colour, grainsize/plasticity, moisture, soil type incl. secondary constituents, other remarks	Type	Depth (m)	Type	Results	
0.00						
0.20	TOPSOIL: Dark brown					
0.70	FILL: Brown, fine to medium grained, sand fill					
1.00	SAND (SP): Loose, pale grey, fine to medium grained, moist sand (Superficial Soil)					
1.80	* became medium dense below 1.80m depth					
2.00						
2.60						
2.80	Gravelly SAND (SW): Medium dense, brown, medium grained, sand, medium to course ground sub-rounded to rounded gravel, moist (Superficial Soil)	D	2.63-2.80			
3.00	Sandy CLAY (CL): Firm, orange, low plasticity, moist sandy clay (Residual Soil)	D	2.80-2.88			
	* became very stiff to hard below 3.00m depth	D	3.30-3.40			
3.60						
3.80	Sandstone (EW) Extremely low strength, orange brown, fine grained (Hawksbury Sandstone)					
4.00	HAND AUGER REFUSUAL @3.80m depth in interpreted hard sandy clay to extremely low strength sandstone					

RIG: None DRILLER: CL LOGGED: JY

METHOD: Hand Auger

GROUND WATER OBSERVATIONS: no free ground water found

REMARKS: CHECKED:

BOREHOLE REPORT

CLIENT: OSHR AT VAUCLUSE HOLDING PTY LTY

DATE: 28/06/2018

BORE No.: 2

PROJECT: 4 LEVEL RESIDENTIAL DEVELOPMENT

PROJECT No.: 2018-106

SHEET: 1 of 1

LOCATION: 671-679 OLD SOUTH HEAD ROAD, VAUCLUSE

SURFACE LEVEL: RL å 73.30m

Depth (m)	Description of Strata	Sampling		In Situ Testing		
	PRIMARY SOIL - strength/density, colour, grainsize/plasticity, moisture, soil type incl. secondary constituents, other remarks	Type	Depth (m)	Type	Results	
0.00						
	TOPSOIL: Dark brown					
0.20						
	FILL: Brown, fine to medium grained, sand fill					
0.70						
	SAND (SP): Loose, pale grey, fine to medium grained, moist sand (Superficial Soil)					
1.00						
1.35	* became medium dense, orange brown and iron cemented between 1.35m to 1.75m depth					
1.75	* became orange yellow below 1.75m depth					
2.00						
2.85	* became dense below 2.85m depth					
3.00						
3.60	* became very dense below 3.60m depth					
4.00						
5.00						
5.20						
	HAND AUGER DISCONTINUED @5.20m depth					

RIG: None

DRILLER: CL

LOGGED: JY

METHOD: Hand Auger

GROUND WATER OBSERVATIONS: no free ground water found

REMARKS:

CHECKED:

BOREHOLE REPORT

CLIENT: OSHR AT VAUCLUSE HOLDING PTY LTY

DATE: 28/06/2018

BORE No.: 3

PROJECT: 4 LEVEL RESIDENTIAL DEVELOPMENT

PROJECT No.: 2018-106

SHEET: 1 of 1

LOCATION: 671-679 OLD SOUTH HEAD ROAD, VAUCLUSE

SURFACE LEVEL: RL å 73.00m

Depth (m)	Description of Strata	Sampling		In Situ Testing		
	PRIMARY SOIL - strength/density, colour, grainsize/plasticity, moisture, soil type incl. secondary constituents, other remarks	Type	Depth (m)	Type	Results	
0.00						
0.20	TOPSOIL: Dark brown					
0.45	FILL: Brown, fine to medium grained, sand fill					
1.00	SAND (SP) : Very loose to loose, pale grey, fine to medium grained, moist sand (Superficial Soil) * became medium dense, brown orange and iron cemented below 1.00m depth					
1.20	HAND AUGER DISCONTINUED @1.20m depth in medium dense sand					
2.00						
3.00						
4.00						
5.00						

RIG: None

DRILLER: CL

LOGGED: JY

METHOD: Hand Auger

GROUND WATER OBSERVATIONS: no free ground water found

REMARKS:

CHECKED:

BOREHOLE REPORT

CLIENT: OSHR AT VAUCLUSE HOLDING PTY LTY

DATE: 28/06/2018

BORE No.: 4

PROJECT: 4 LEVEL RESIDENTIAL DEVELOPMENT

PROJECT No.: 2018-106

SHEET: 1 of 1

LOCATION: 671-679 OLD SOUTH HEAD ROAD, VAUCLUSE

SURFACE LEVEL: RL å 71.00m

Depth (m)	Description of Strata	Sampling		In Situ Testing		
	PRIMARY SOIL - strength/density, colour, grainsize/plasticity, moisture, soil type incl. secondary constituents, other remarks	Type	Depth (m)	Type	Results	
0.00						
0.15	TILE overlaying BEDDING SAND					
	FILL: Brown, fine to medium grained, sand fill					
0.95						
1.00	SAND (SP): Loose, pale grey, fine to medium grained, moist sand (Superficial Soil)					
1.40	* became medium dense, red brown and iron cemented below 1.40m					
1.65	* became very dense between 1.65m to 1.95m depth					
1.95	* became medium dense, orange yellow below 1.95m depth					
2.00						
3.00						
4.00	* became dense below 4.05m depth					
5.00						
	HAND AUGER DISCONTINUED @5.00m depth					

RIG: None

DRILLER: CL

LOGGED: JY

METHOD: Hand Auger

GROUND WATER OBSERVATIONS: no free ground water found

REMARKS:

CHECKED:

BOREHOLE REPORT

CLIENT: OSHR AT VAUCLUSE HOLDING PTY LTY

DATE: 28/06/2018

BORE No.: 5

PROJECT: 4 LEVEL RESIDENTIAL DEVELOPMENT

PROJECT No.: 2018-106

SHEET: 1 of 1

LOCATION: 671-679 OLD SOUTH HEAD ROAD, VAUCLUSE

SURFACE LEVEL: RL å 71.00m

Depth (m)	Description of Strata PRIMARY SOIL - strength/density, colour, grainsize/plasticity, moisture, soil type incl. secondary constituents, other remarks	Sampling		In Situ Testing		
		Type	Depth (m)	Type	Results	
0.00						
	FILL: Brown, fine to medium grained, sand fill					
0.55						
	SAND (SP): Very loose, pale grey, fine to medium grained, moist sand (Superficial Soil)					
1.00						
1.20	* became loose below 1.20m depth					
1.75	* became medium dense, red brown and iron cemented below 1.75m depth					
2.00	* became dense to very dense between 1.95m to 2.25m depth					
2.35	* became medium desne and orange yellow below 2.35m depth					
3.00						
3.45	* became dense below 3.45m depth					
3.75	* became very dense below 3.75m depth					
4.00						
5.00						
5.80						
	HAND AUGER DISCONTINUED @5.80m depth					
6.00						

RIG: None

DRILLER: CL

LOGGED: JY

METHOD: Hand Auger

GROUND WATER OBSERVATIONS: no free ground water found

REMARKS:

CHECKED:

DYNAMIC PENETROMETER TEST RESULTS SHEET

CLIENT: OSHR AT VAUCLUSE HOLDIN **DATE:** 28/06/2018

PROJECT: 4 LEVEL RESIDENTIAL DEVEI **PROJECT No.:** 2018-106

LOCATION: 671-679 OLD SOUTH HEAD ROAD, VAUCLUSE **SHEET: 1 of 1**

	Test Location								
Depth (m)	DCP1	DCP1a	DCP2	DCP2a	DCP3	DCP4	DCP4a	DCP5	DCP5a
0.00 - 0.15	1	--	1	--	2	13	--	--	--
0.15 - 0.30	1	--	2	--	1	2	--	--	--
0.30 - 0.45	1	--	2	--	0	3	--	--	--
0.45 - 0.60	1	--	2	--	0	3	--	1	--
0.60 - 0.75	1	--	2	--	2	2	--	1	--
0.75 - 0.90	2	--	2	--	2	2	--	1	--
0.90 - 1.05	2	--	2	--	4	2	--	1	--
1.05 - 1.20	2	--	2	--	6	2	--	1	--
1.20 - 1.35	2	--	3	--	5	3	--	2	--
1.35 - 1.50	2	--	5	--	3	3	--	2	--
1.50 - 1.65	3	--	4	--	4	3	--	2	--
1.65 - 1.80	3	--	4	--	4	16	--	5	--
1.80 - 1.95	4	--	3	--	5	12	--	6	--
1.95 - 2.10	4	--	4	--	6	7	--	14	--
2.10 - 2.25	5	--	4	--	7	6	--	17	--
2.25 - 2.40	6	--	5	--	8	7	--	9	--
2.40 - 2.55		--		--			--		--
2.55 - 2.70		--		--			--		--
2.70 - 2.85		8		7			5		--
2.85 - 3.00		3		14			5		--
3.00 - 3.15		7		12			4		--
3.15 - 3.30		18		13			3		4
3.30 - 3.45		29		12			4		10
3.45 - 3.60		40		14			3		14
3.60 - 3.75				19			3		14
3.75 - 3.90				19			6		17
3.90 - 4.05				22			9		18
4.05 - 4.20							11		21
4.20 - 4.35									

TEST METHOD: AS 1289. F3.2, CONE PENETROMETER -- DCP2a, 4a
AS 1289. F3.3, PERTH SAND PENETROMETER -- DCP1, 2, 3, 4, 5, 1a, 5a

REMARKS: **(B)** Test hammer bouncing upon refusal on solid object
-- No test undertaken at this level due to prior excavation of soils

APPENDIX C

LOTSEARCH REPORT

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 24 Oct 2023 14:03:51

Reference: LS049493 EP

Address: 669 - 683 Old South Head Road, Vaucluse, NSW 2030

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

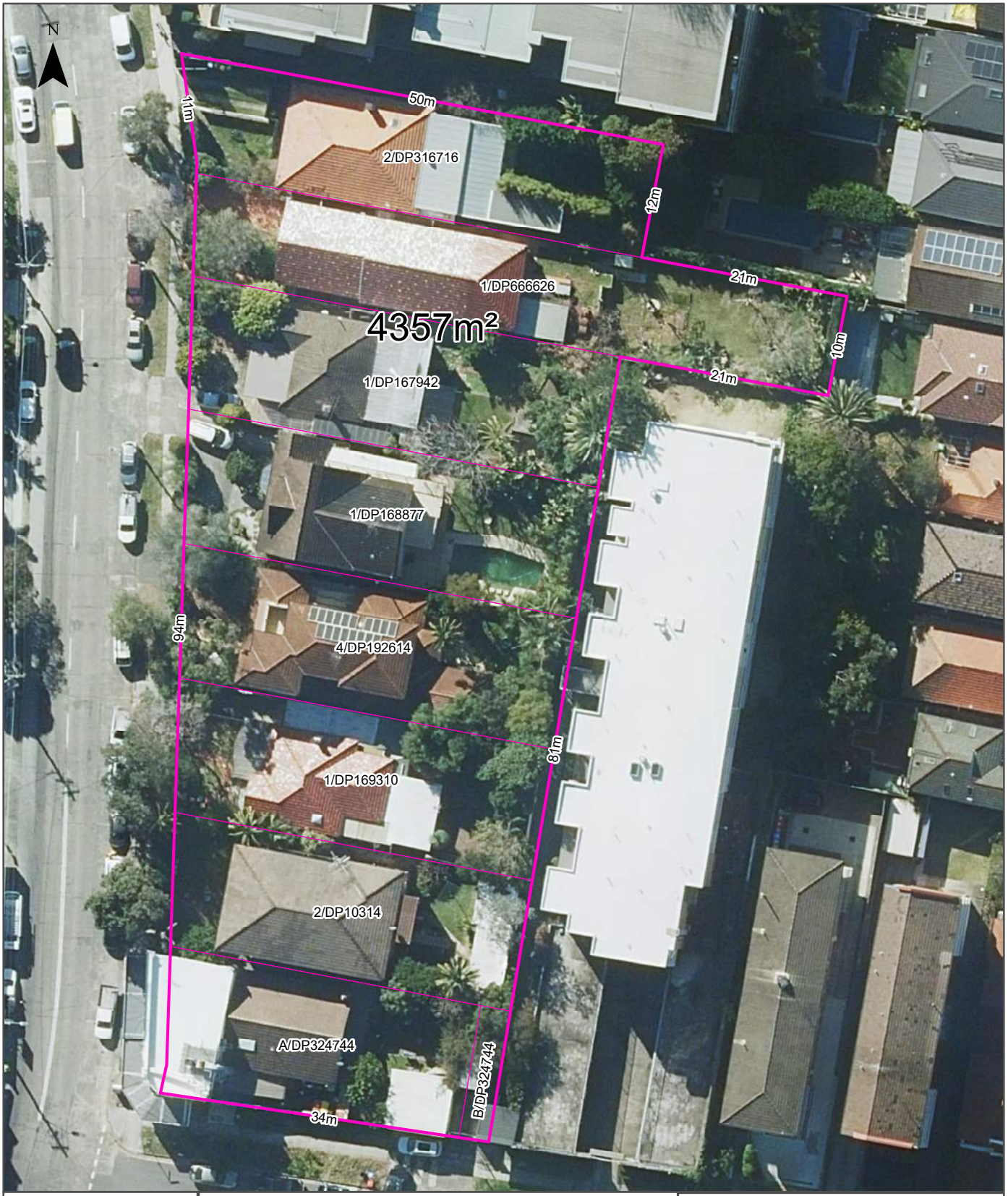
Datasets contained within this report, detailing their source and data currency:

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	14/09/2023	14/09/2023	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	16/10/2023	10/10/2023	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	06/10/2023	06/10/2023	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	16/10/2023	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority	26/07/2023	26/07/2023	Monthly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	20/09/2023	07/09/2020	Annually	1000m	0	0	2
EPA PFAS Investigation Program	Environment Protection Authority	23/10/2023	23/09/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	19/10/2023	19/10/2023	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	19/10/2023	19/10/2023	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	19/10/2023	19/10/2023	Monthly	2000m	0	0	0
Defence Controlled Areas	Department of Defence	10/10/2023	10/10/2023	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	19/10/2023	02/09/2022	Quarterly	2000m	0	0	0
National Unexploded Ordnance (UXO)	Department of Defence	10/10/2023	10/10/2023	Quarterly	2000m	0	0	2
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	23/10/2023	23/10/2023	Monthly	1000m	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	23/10/2023	23/10/2023	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	23/10/2023	23/10/2023	Monthly	1000m	0	0	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	100m	29	299	299
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	100m	-	27	27
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	250m	0	66	66
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	250m	-	10	10
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	2	44
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	1
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	2
Major Easements	NSW Department of Customer Service - Spatial Services	19/10/2023	19/10/2023	Quarterly	1000m	0	1	8
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	16/02/2023	31/12/2022	Annually	1000m	0	0	1
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	As required	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 2018	NSW Department of Planning, Industry and Environment	09/05/2023	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	18/04/2023	13/07/2022	Annually	2000m	0	0	97
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	6
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	2	3
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	1	1	6
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	10/10/2023	01/09/2023	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	16/10/2023	16/10/2023	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	23/10/2023	23/10/2023	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	23/10/2023	23/10/2023	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	23/10/2023	23/10/2023	Monthly	1000m	10	10	12
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	31/08/2023		Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	10/10/2023	15/09/2023	Monthly	1000m	2	7	54
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	20/10/2023	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	20/10/2023	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	06/09/2023	03/03/2023	Quarterly	1000m	0	0	6
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	10/10/2023	22/09/2023	Monthly	1000m	0	0	69
Bush Fire Prone Land	NSW Rural Fire Service	28/09/2023	15/08/2023	Monthly	1000m	0	0	0
NSW Native Vegetation Type Map	NSW Department of Planning and Environment	26/05/2023	12/12/2022	Quarterly	1000m	1	1	3
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	09/05/2023	01/11/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	13/09/2023	13/09/2023	Weekly	10000m	-	-	-

Site Diagram

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 4357m²

Total Perimeter: 333m

Scale: 0 — 12.5 Meters — 25

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Disclaimers:

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

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

Coordinate System:
GDA 1994 MGA Zone 56

Date: 24 October 2023

Contaminated Land

669 - 683 Old South Head Road, Vaucluse, NSW 2030

List of NSW contaminated sites notified to EPA

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

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

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Contaminated Land

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

EPA Notices

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

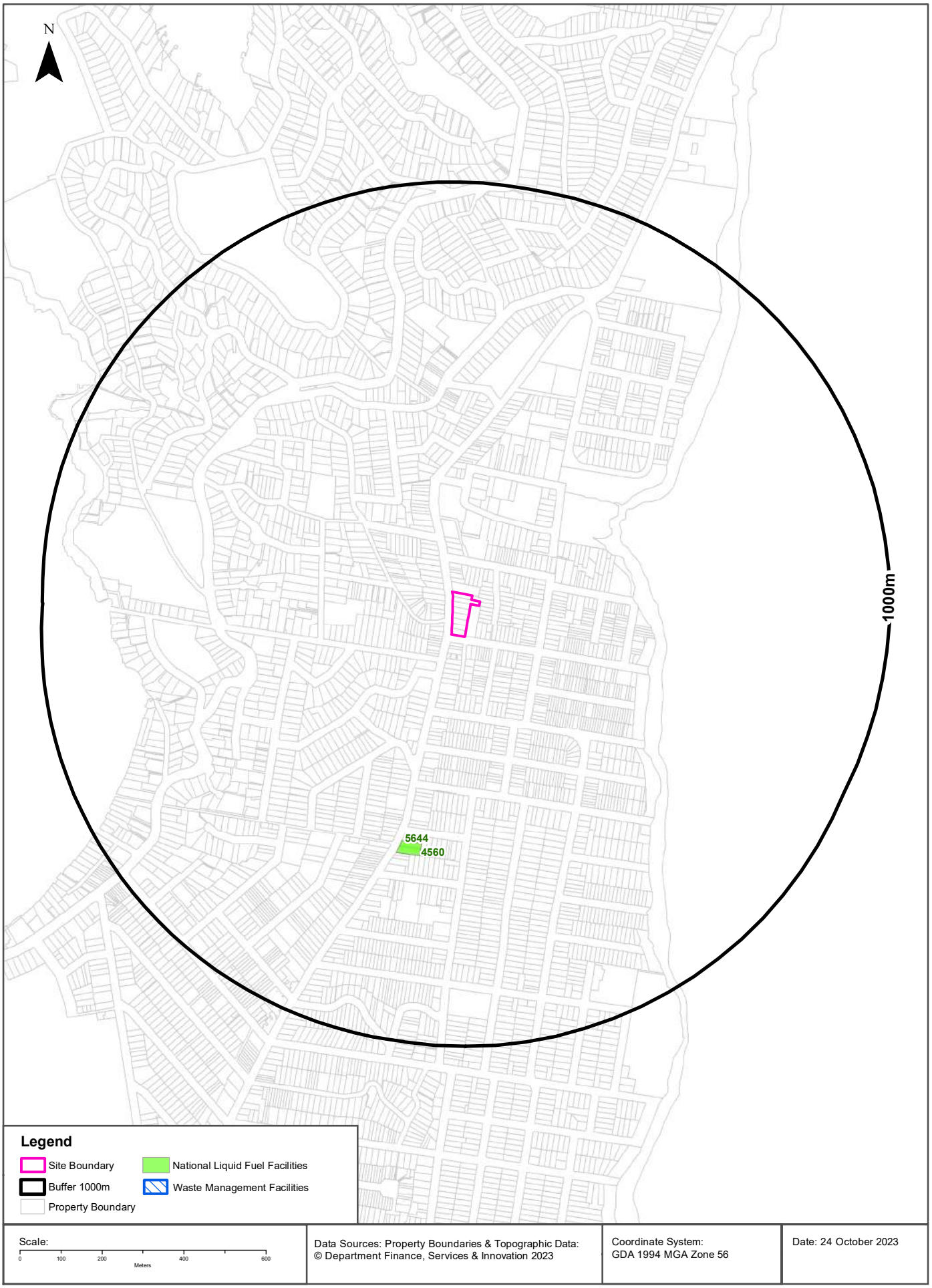
Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
N/A	No records in buffer										

NSW EPA Notice Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Waste Management & Liquid Fuel Facilities

669 - 683 Old South Head Road, Vaucluse, NSW 2030

National Waste Management Site Database

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

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

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

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
4560	BP	BP Express Rose Bay	595 Old South Head Road	Rose Bay	Petrol Station	Operational		25/07/2011	Premise Match	515m	South
5644	BP	BP ROSE BAY	599 OLD SOUTH HEAD ROAD	ROSE BAY	PETROL STATION	OPERATIONAL			Premise Match	515m	South

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

PFAS Investigation & Management Programs

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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

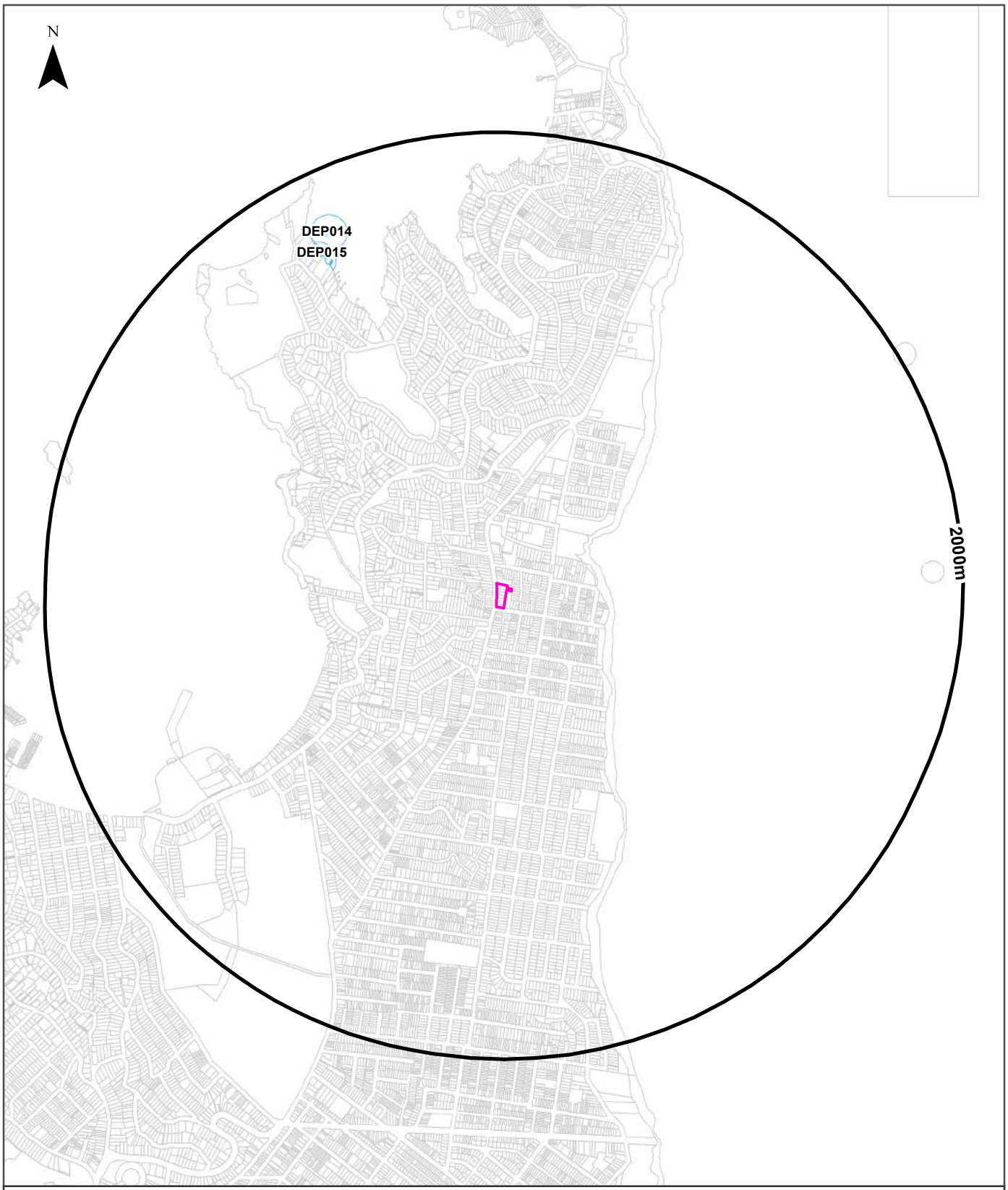
Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

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

Defence Sites and Unexploded Ordnance

669 - 683 Old South Head Road, Vaucluse, NSW 2030



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:	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023	Coordinate System: GDA 1994 MGA Zone 56	Date: 24 October 2023

Scale: 0 200 400 800 1,200 Meters

Defence Sites and Unexploded Ordnance

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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
N/A	No records in buffer					

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
DEP015	Potential Depth Charge UXO - Port Jackson	Sea Dumping of Depth Charges	This site was an area where Depth Charges were used in WW2.		Not Commonwealth Land	As Supplied	1567m	North West
DEP014	Potential Depth Charge UXO - Port Jackson	Sea Dumping of Depth Charges	This site was an area where Depth Charges were used in WW2.		Not Commonwealth Land	As Supplied	1645m	North West

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

EPA Other Sites with Contamination Issues

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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

EPA Activities

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Licensed Activities under the POEO Act 1997

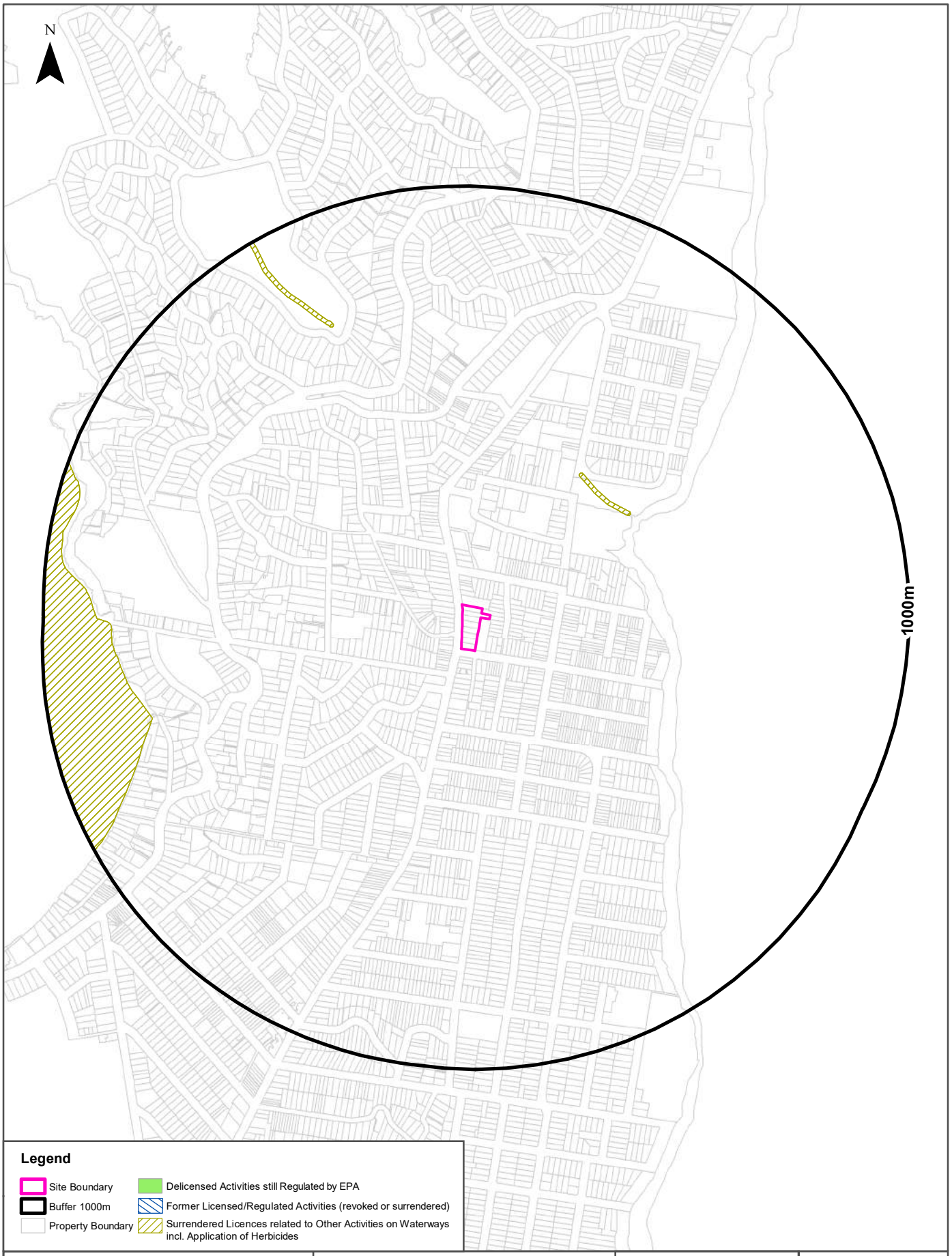
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

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

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

Delicensed & Former Licensed EPA Activities

669 - 683 Old South Head Road, Vaucluse, NSW 2030



EPA Activities

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Delicensed Activities still regulated by the EPA

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

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

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

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

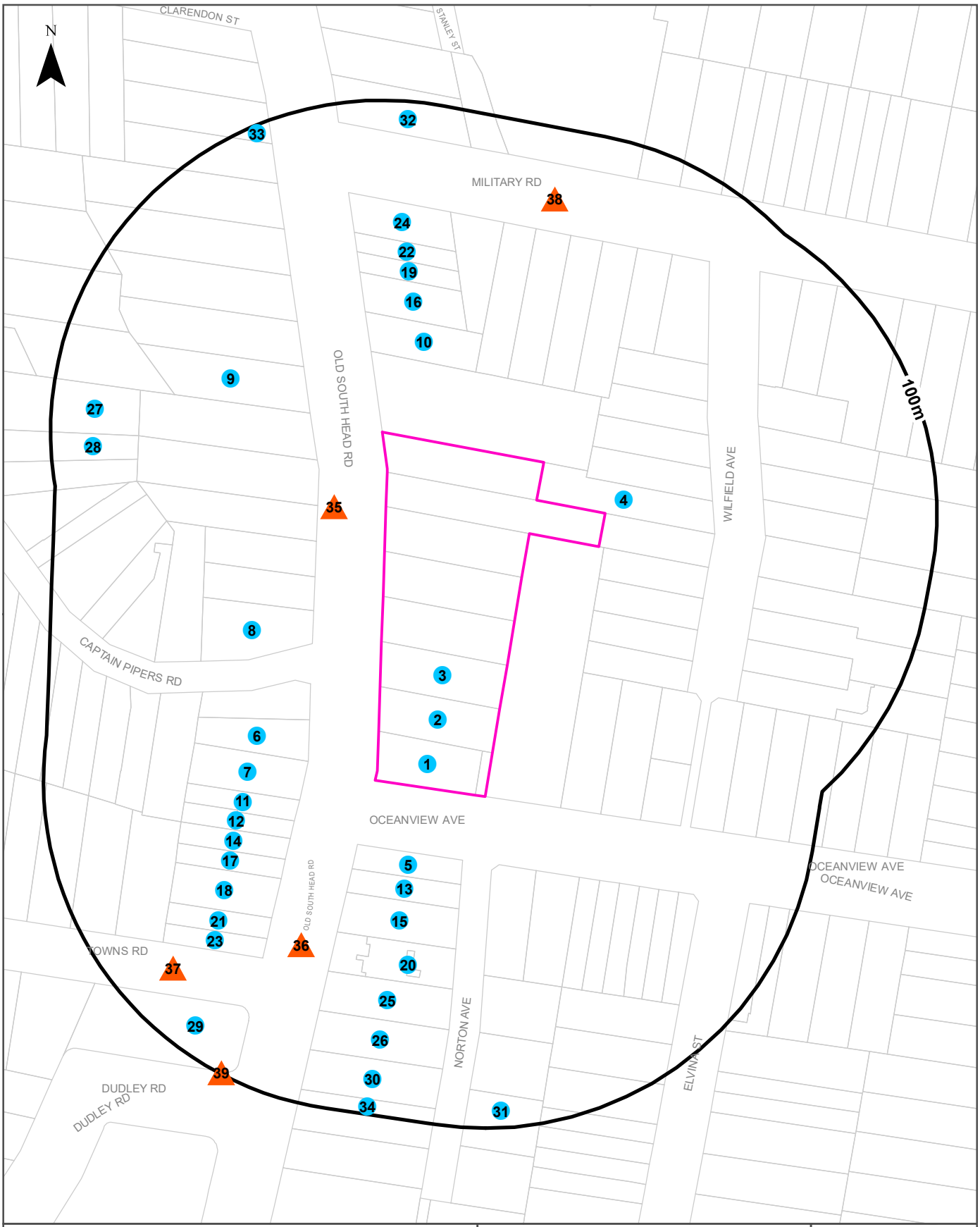
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	383m	West
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	383m	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	383m	West

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

Historical Business Directories

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Legend

- Site Boundary
- Buffer 100m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 20 40 60 80 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 24 October 2023

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

Historical Business Directories

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records 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	CAKE SHOPS &/OR PASTRYCOOKS.	Roma Continental Cakes, 669B Old South Head Rd., Rose Bay North. 2030	11916	1986	Premise Match	0m	On-site
	FLORISTS-RETAIL.	Stems, 669A Old South Head Rd., Rose Bay North. 2030	33926	1986	Premise Match	0m	On-site
	FISH MERCHANTS-RETAIL.	Vaucluse Ocean Foods, 669 Old South Head Rd., Rose Bay North. 2030	33296	1986	Premise Match	0m	On-site
	FISH MERCHANTS - RETAIL (F2825)	Cons Fish Shop, 669 Old South Head Rd., Rose Bay North. 2030.	30922	1982	Premise Match	0m	On-site
	FLORISTS - RETAIL. (F4125)	Red Rose, 669A Old South Head Rd., Rose Bay North. 2030.	31588	1982	Premise Match	0m	On-site
	CAKE SHOPS &/OR PASTRYCOOKS. (C0465)	Roma Continental Cakes, 669B Old South Head Rd., Rose Bay North. 2030.	12803	1982	Premise Match	0m	On-site
	FURNISHINGS-SOFT RETAIL	Ian Studlose, 669A Old South Head Rd., Rose Bay North. 2030	36211	1975	Premise Match	0m	On-site
	CAKE SHOPS &/OR PASTRYCOOKS.	Minto. E. C., 669B Old South Head Rd., Rose Bay North. 2030	12682	1975	Premise Match	0m	On-site
	FISH MERCHANTS-RETAIL	Rose Bay North Fresh Fish & Poultry, 669 Old South Head Rd., Rose Bay North. 2030	32578	1975	Premise Match	0m	On-site
	CAKE SHOPS & PASTRYCOOKS (C045)	Minto, C., 669b Old South Head Rd., Rose Bay North	276727	1970	Premise Match	0m	On-site
	FISH MERCHANTS-RETAIL (F245)	Rose Bay North Fresh Fish & Poultry., 669 Old South Head Rd., Rose Bay North	303712	1970	Premise Match	0m	On-site
	POULTRY DEALERS-RETAIL (P692)	Rose Bay North Fresh Fish & Poultry., 669 Old South Head Rd., Rose Bay North	351284	1970	Premise Match	0m	On-site
	FRUITERERS/GREENGROCERS (F640)	Rose Bay North Fruiterer., 669a-671 Old South Head Rd., Rose Bay North	307848	1970	Premise Match	0m	On-site
	CAKE SHOPS & PASTRYCOOKS (C045)	Snowdrop Cates., 669b Old South Head Rd., Rose Bay North	276890	1970	Premise Match	0m	On-site
	Cake Shops & Pastrycooks	Minto E. C., 669b Old South Head Rd., Rose Bay North	61422	1965	Premise Match	0m	On-site
	Fish Merchants - Retail	Rose Bay North Fresh Fish & Poultry, 669 Old South Head Rd., Rose Bay North	87056	1965	Premise Match	0m	On-site
	Poultry Dealers - Retail	Rose Bay North Fresh Fish & Poultry., 669 Old South Head Rd., Rose Bay North	135495	1965	Premise Match	0m	On-site
	Fruiterers & Greengrocers	Rose Bay North Fruiterer, 669a-671 Old South Head Rd., Rose Bay North	92033	1965	Premise Match	0m	On-site
	FRUITERERS/GREENGROCERS	Giglio, P., 669a-671 Old South Head Rd., Rose Bay	315455	1961	Premise Match	0m	On-site
	CAKE SHOPS & PASTRYCOOKS	Snowdrop Cakes, 669b Old South Head Rd., Rose Bay North	283331	1961	Premise Match	0m	On-site
	FISH MERCHANTS-RETAIL	Speerin, E., 669 Old South Head Rd., Rose Bay North	311225	1961	Premise Match	0m	On-site
	BUTCHERS-RETAIL	Allens, John, 669 Old South Head Rd., Rose Bay North	13049	1950	Premise Match	0m	On-site
	FISH MERCHANTS-RETAIL	Carter, E. C., 669 Old South Head Rd., Rose Bay	44274	1950	Premise Match	0m	On-site

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	FISH MERCHANTS-RETAIL	Flouskos, H., 669 Old South Head Rd., Rose Bay North	44333	1950	Premise Match	0m	On-site
	FISH BAIT DEALERS	Flouskos, H., 669 Old South Head Rd., Rose Bay North	44206	1950	Premise Match	0m	On-site
	FRUITERERS & GREENGROCERS	Giglio, P., 669a Old South Head Rd., Rose Bay	50177	1950	Premise Match	0m	On-site
	CAKE SHOPS & PASTRYCOOKS	Jones, E. M., 669b Old South Head Rd., Vaucluse	16836	1950	Premise Match	0m	On-site
2	FRUITERERS & GREENGROCERS	Ashby, A. L., 671 Old South Head Rd., Rose Bay North	49496	1950	Premise Match	0m	On-site
3	CAKE SHOPS & PASTRYCOOKS	Elizabethan (The), 673 Old South Head Rd., Rose Bay North	16655	1950	Premise Match	0m	On-site
4	OPTOMETRISTS-REGISTERED	Tilbury, O. L. C., 9 Wilfield Ave., Vaucluse	90294	1950	Premise Match	0m	North East
5	DRY CLEANERS & PRESSERS.	Joan & John, 667A Old South Head Rd., Rose Bay North. 2030	25349	1986	Premise Match	20m	South
	DRY CLEANERS & PRESSERS.(D8500)	Joan & John, 667A Old South Head Rd., Rose Bay North. 2030.	23882	1982	Premise Match	20m	South
6	RESTAURANTS.	Chinese Inn, 24 Old South Head Rd., Rose Bay North, 2030	81326	1986	Premise Match	21m	South West
	CHEMISTS-PHARMACEUTICAL.	Lee, J., 22 Old South Head Rd., Vaucluse. 2030	14451	1986	Premise Match	21m	South West
	RESTAURANTS. (R5180)	Chinese Inn, 24 Old South Head Rd., Rose Bay North. 2030.	70625	1982	Premise Match	21m	South West
	CHEMISTS - PHARMACEUTICAL.(C4110)	Griffiths, F, 22 Old South Head Rd., Rose Bay North. 2030.	15084	1982	Premise Match	21m	South West
	RESTAURANTS.	Chinese Inn, 24 Old South Head Rd, Rose Bay North. 2030	62873	1978	Premise Match	21m	South West
	CHEMISTS-PHARMACEUTICAL.	Griffiths, F., 22 Old South Head Rd., Rose Bay North. 2030	13262	1978	Premise Match	21m	South West
	RESTAURANTS.	Chinese Inn., 24 Old South Head Rd., Rose Bay North. 2030	73636	1975	Premise Match	21m	South West
	CHEMISTS-PHARMACEUTICAL	Griffiths. F., 22 Old South Head Rd., Rose Bay North. 2030	15336	1975	Premise Match	21m	South West
	CHEMISTS-PHARMACEUTICAL	Griffiths, Frank, 22 Old South Head Rd., Rose Bay North	280451	1970	Premise Match	21m	South West
	DRAPERS-RETAIL (D540)	Tiley, E. & L., 24 Old South Head Rd., Rose Bay North	290634	1970	Premise Match	21m	South West
	Chemists - Pharmaceutical	Griffiths, Frank, 22 Old South Head Rd., Rose Bay North	65073	1965	Premise Match	21m	South West
	Drapers - Retail	Tiley, E. & L., 24 Old South Head Rd., Rose Bay North	75327	1965	Premise Match	21m	South West
	BEAUTY SALONS & LADIES' HAIRDRESSERS	"Vickil Marie"., 22 Old South Head Rd., Rose Bay North	272201	1961	Premise Match	21m	South West
	DRAPERS-RETAIL	Tiley, E. & L., 24 Old South Head Rd., Rose Bay North	298175	1961	Premise Match	21m	South West
	DRY CLEANERS, PRESSERS & DYERS	"Astra" Dry Cleaners Pty. Ltd., 24 Old South Head Rd., Rose Bay North	35020	1950	Premise Match	21m	South West
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	"Vickil Marie" (Smith and White, Proprietors), 22 Old South Head Rd., Rose Bay North	6793	1950	Premise Match	21m	South West
7	GIFT SHOPS.	D. & B. Prim & Proper, 18 Old South Head Rd., Rose Bay North. 2030	38986	1986	Premise Match	21m	South West
	HAIRDRESSERS-LADIES &/OR BEAUTY SALONS.	Irene's Beauty Salon, 20 Old South Head Rd., Rose Bay North. 2030	42408	1986	Premise Match	21m	South West
	GIFT SHOPS. (G3350)	Gift Connection, 18 Old South Head Rd., Rose Bay North. 2029.	36263	1982	Premise Match	21m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Marbles, 20 Old South Head Rd., Rose Bay North. 2030.	6152	1982	Premise Match	21m	South West
	FRUITERERS &/OR GREENGROCERS.	Wigan, N. 18 Old South Head Rd. Rose Bay North. 2030	30949	1978	Premise Match	21m	South West
	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS.	Wigan. N., 18 Old South Head Rd., Rose Bay North. 2030	46241	1978	Premise Match	21m	South West
	FRUITERERS &/OR GREENGROCERS.	Wigan, N., 18 Old South Head Rd., Rose Bay North. 2030	35993	1975	Premise Match	21m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
7	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS.	Wigan, N., 18 Old South Head Rd., Rose Bay North. 2030	53971	1975	Premise Match	21m	South West
	BOOT & SHOE REPAIRERS	Gregory's Shoe Repairs., 20 Old South Head Rd., Rose Bay North	268877	1970	Premise Match	21m	South West
	FRUITERERS/GREENGROCERS (F640)	Wigan, N., 18 Old South Head Rd., Rose Bay North	308170	1970	Premise Match	21m	South West
	MILK, FRUIT JUICE BARS/CONFECTIONERS	Wigan, N., 18 Old South Head Rd., Rose Bay North	331378	1970	Premise Match	21m	South West
	Fruiterers & Greengrocers	Earl, Jack, 18 Old South Head Rd., Rose Bay North	91188	1965	Premise Match	21m	South West
	BOOT & SHOE REPAIRERS	Gregory's Shoe Repairs, 20 Old South Head Rd, Rose Bay North	53316	1965	Premise Match	21m	South West
	BOOT & SHOE REPAIRERS	Hamey, Ken G., 20 Old South Head Rd., Rose Bay North	274837	1961	Premise Match	21m	South West
	FRUITERERS/GREENGROCERS	Star Fruit Palace & Milk Bar, 18 Old South Head Rd., Rose Bay North	316234	1961	Premise Match	21m	South West
	BOOT & SHOE REPAIRERS	Gibson, J., 20 Old South Head Rd., Rose Bay North	10203	1950	Premise Match	21m	South West
	FRUITERERS & GREENGROCERS	Smith, L. H., 18 Old South Head Rd., Rose Bay	51233	1950	Premise Match	21m	South West
8	MEDICAL PRACTITIONERS.	Kosman, E., 30 Old South Head Rd., Rose Bay North. 2030	55835	1986	Premise Match	21m	West
	MEDICAL PRACTITIONERS. (M2020)	Kosman, E., 30 Old South Head Rd., Rose Bay North. 2030	48902	1982	Premise Match	21m	West
	MEDICAL PRACTITIONERS.	Kosman, E., 30 Old South Head Rd., Rose Bay North. 2030	43392	1978	Premise Match	21m	West
	MEDICAL PRACTITIONERS.	Kosman, E., 30 Old South Head Rd., Rose Bay North. 2030.	50784	1975	Premise Match	21m	West
	MEDICAL PRACTITIONERS (M216)	Kosman, E., 30 Old South Head Rd., Vaucluse	327361	1970	Premise Match	21m	West
	Medical Practitioners	Kosman, E., 30 Old South Head Rd., Vaucluse	111876	1965	Premise Match	21m	West
	MEDICAL PRACTITIONERS	Kosman, E., 30 Old South Head Rd., Vaucluse	335600	1961	Premise Match	21m	West
	MEDICAL PRACTITIONERS	Bridgeman, S., 30 Old South Head Rd., Vaucluse	72513	1950	Premise Match	21m	West
	MEDICAL PRACTITIONERS	Franklin, N. N., 30 Old South Head Rd., Vaucluse	72929	1950	Premise Match	21m	West
9	Electrical Contractors - Licensed Firms	Bilson, R. J., 42 Old South Head Rd., Rose Bay North	78901	1965	Premise Match	22m	North West
	ELECTRICAL CONTRACTORS-LICENSED	Bilson, R. J., 42 Old South Head Rd., Rose Bay North	301640	1961	Premise Match	22m	North West
	ELECTRICAL CONTRACTORS-LICENSED	Bilson, R. J., 42 Old South Head Rd., Vaucluse	301639	1961	Premise Match	22m	North West
10	AUCTIONEERS-GENERAL	Ward, H. F., 689 Old South Head Rd., Rose Bay North	270104	1961	Premise Match	23m	North
11	DRY CLEANERS & PRESSERS.	Vaucluse Laundromat, 16 Old South Head Rd., Rose Bay North. 2030	25551	1986	Premise Match	24m	South West
	LAUNDRIES &/OR LAUNDRETTES.	Vaucluse Laundromat, 16 Old South Head Rd., Rose Bay North. 2030	51275	1986	Premise Match	24m	South West
	DRY CLEANERS & PRESSERS.(D8500)	Rose Bay North Laundromat, 16 Old South Head Rd., Rose Bay North. 2030.	24029	1982	Premise Match	24m	South West
	LAUNDRIES &/OR LAUNDRETTES.(L1850)	Rose Bay North Laundromat, 16 Old South Head Rd., Rose Bay North. 2030.	44878	1982	Premise Match	24m	South West
	DELICATESSENS (D080)	Goldberg's Continental Delicatessen., 16 Old South Head Rd., Rose Bay North	287453	1970	Premise Match	24m	South West
	DELICATESSENS	Goldberg's Continental Delicatessen, 16 Old South Head Rd., Rose Bay North	72217	1965	Premise Match	24m	South West
	GROCERS-RETAIL	Eden, B. W., 16 Old South Head Rd., Rose Bay North	320416	1961	Premise Match	24m	South West
	DELICATESSENS & SMALLGOODS DEALERS	Hughes, D. and N., 16 Old South Head Rd., Rose Bay North	30660	1950	Premise Match	24m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
11	GROCERS-RETAIL	Tiley, L. Y., 16 Old South Head Rd., Vaucluse	55926	1950	Premise Match	24m	South West
12	DELICATESSENS.	Ellys Deli., 14 Old South Head Rd., Rose Bay North. 2030	21699	1986	Premise Match	27m	South West
	DELICATESSENS, (D1250)	Ellys Deli., 14 Old South Head Rd., Rose Bay North. 2030.	19383	1982	Premise Match	27m	South West
	DELICATESSENS	Nixon, A. J., 14 Old South Head Rd., Rose Bay North. 2030	20376	1975	Premise Match	27m	South West
	DELICATESSENS (D080)	Nixon, A. J., 14 Old South Head Rd., Rose Bay North	287750	1970	Premise Match	27m	South West
	DELICATESSENS	Nixon, A. J., 14 Old South Head Rd., Rose Bay North	72512	1965	Premise Match	27m	South West
	DELICATESSENS	Nixon. A. J., 14 Old South Head Rd., Rose Bay North	295102	1961	Premise Match	27m	South West
	BUTCHERS-RETAIL	Horton, S. E., 14 Old South Head Rd., Rose Bay North	13723	1950	Premise Match	27m	South West
	DELICATESSENS & SMALLGOODS DEALERS	Turner, E. C., 14 Old South Head Rd., Rose Bay North	31323	1950	Premise Match	27m	South West
	SIGNWRITERS	Turner, H. A., 14 Old South Head Rd., Rose Bay	102667	1950	Premise Match	27m	South West
13	LAUNDRIES &/OR LAUNDRETTES.	Rose Bay North Laundromat, 667 Old South Head Rd., Rose Bay North. 2030	51239	1986	Premise Match	27m	South
	GARDENERS SUPPLIES - RETAIL(G0750)	Pem Fountains, 667 Old South Head Rd., Rose Bay North. 2030.	35765	1982	Premise Match	27m	South
14	BUTCHERS-RETAIL.	Gourmet Joint, The, 12 Old South Head Rd., Rose Bay North. 2030	9975	1986	Premise Match	31m	South West
	BUTCHERS - RETAIL. (B8040)	T. & T. Gourmet Butchery, 12 Old South Head Rd., Rose Bay North. 2030.	11677	1982	Premise Match	31m	South West
	BUTCHERS-RETAIL.	Hannan. J. & Son. 12 Old South Head Rd., Rose Bay North. 2030	9278	1978	Premise Match	31m	South West
	BUTCHERS-RETAIL	Hannan, J. & Son, 12 Old South Head Rd., Rose Bay North. 2030	10498	1975	Premise Match	31m	South West
	BUTCHERS-RETAIL (B860)	Elliott, G. A., 12 Old South Head Rd., Rose Bay North	273538	1970	Premise Match	31m	South West
	Butchers - Retail	Elliot, G. A., 12 Old South Head Rd, Rose Bay North	58246	1965	Premise Match	31m	South West
	BUTCHERS-RETAIL	Elliott, G. A., 12 Old South Head Rd., Rose Bay North	280239	1961	Premise Match	31m	South West
	BUTCHERS-RETAIL	Graham, H., 12 Old South Head Rd., Rose Bay	13569	1950	Premise Match	31m	South West
	FRUITERERS & GREENGROCERS	Lafaci, A. A., 12 Old South Head Rd., Rose Bay North	50463	1950	Premise Match	31m	South West
15	Banks	Westpac Banking Corporation, 665 Old South Head Rd, Rose Bay North 2030	35632	1991	Premise Match	35m	South
	REAL ESTATE AGENTS/VALUERS(R205)	Armstrong, B. W., 665 Old South Head Rd., Rose Bay	354946	1970	Premise Match	35m	South
	SLOT CAR RACEWAYS (S369)	Franka Salen, 665 Old South Head Rd., Rose Bay North	361942	1970	Premise Match	35m	South
	HAIRDRESSERS (GENT.'S) (H070)	Franka's Salon., 665b Old South Head Rd., Rose Bay North	313897	1970	Premise Match	35m	South
	Real Estate Agents/Valuers - Rosebay	Armstrong, Armstrong, B. W., 665 Old South Head Rd.,Rosebay	139635	1965	Premise Match	35m	South
	Insurance Agents	Armstrong, B. W., 665 Old South Head Rd., Rose Bay North	104083	1965	Premise Match	35m	South
	Hairdressers (Gent.'s)/Tobacconists	Tony's Hairstylist, 665b Old South Head Rd., Rose Bay North	98589	1965	Premise Match	35m	South
	REAL ESTATE AGENTS/VALUERS	Armstrong & Brown Pty. Ltd., 665 Old South Head Rd., Rose Bay North	245079	1961	Premise Match	35m	South
	HAIRDRESSERS (GENT.'S) /TOBACCONISTS	Finocchlaro, A., 665b Old South Head Rd., Rose Bay North	322031	1961	Premise Match	35m	South
	REAL ESTATE AGENTS	Gray and Mudie, 665 Old South Head Rd., Rose Bay North	98303	1950	Premise Match	35m	South
	VALUERS	Gray and Mudie, 665 Old South Head Rd., Rose Bay North	111598	1950	Premise Match	35m	South

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15	HAIRDRESSERS (GENT.'S) &/OR TOBACCONISTS	Mansfield, Chas., 665b Old South Head Rd., Rose Bay North	59753	1950	Premise Match	35m	South
16	Business Agents &/or Brokers	Polyblank, N. H. & Co., 691 Old South Head Rd., Rose Bay North	57652	1965	Premise Match	35m	North
	Real Estate Agents/Valuers - Rosebay	Polyblank, N. H. & Co., 691 Old South Head Rd., Rosebay	139644	1965	Premise Match	35m	North
	Hotel Brokers	Poryblank, N. H. & Co., 691 Old South Head Rd., Rose Bay North	101281	1965	Premise Match	35m	North
	RADIO SALES &/OR SERVICEMEN	Matthews, G., 691a Old South Head Rd., Rose Bay	97417	1950	Premise Match	35m	North
17	FRUITERERS &/OR GREENGROCERS.	David's, 10 Old South Head Rd., Rose Bay North. 2030	35891	1986	Premise Match	36m	South West
	FRUITERERS &/OR GREENGROCERS. (F6775)	David's, 10 Old South Head Rd., Rose Bay North. 2030.	33475	1982	Premise Match	36m	South West
	FRUITERERS &/OR GREENGROCERS.	Saad. L., 10 Old South Head Rd., Rose Bay North. 2030	30797	1978	Premise Match	36m	South West
	FRUITERERS &/OR GREENGROCERS.	Saad, L., 10 Old South Head Rd., Rose Bay North. 2030.	35777	1975	Premise Match	36m	South West
	FRUITERERS/GREENGROCERS (F640)	Saad, Lou., 10 Old South Head Rd., Rose Bay North	307868	1970	Premise Match	36m	South West
	Fruiterers & Greengrocers	Saad, Lou, 10 Old South Head Rd., Rose Bay North	92056	1965	Premise Match	36m	South West
	FRUITERERS/GREENGROCERS	Alafaci, A., 10 Old South Head Rd., Rose Bay North	314917	1961	Premise Match	36m	South West
	FRUITERERS & GREENGROCERS	Alafaci, A., 10 Old South Head Rd., Rose Bay	49434	1950	Premise Match	36m	South West
	FRUITERERS & GREENGROCERS	Middleton, C. T., 10 Old South Head Rd., Rose Bay	50729	1950	Premise Match	36m	South West
18	CHEMISTS-PHARMACEUTICAL.	Cassimaty, P. E., 8 Old South Head Road, Rose Bay North. 2030	14056	1986	Premise Match	41m	South West
	NEWSAGENTS.	Jacksons, 6 Old South Head Rd., Rose Bay North. 2030	69406	1986	Premise Match	41m	South West
	CHEMISTS - PHARMACEUTICAL.(C4110)	Cassimaty, P. E., 8 Old South Head Road, Rose Bay North. 2030	14858	1982	Premise Match	41m	South West
	NEWSAGENTS. (N0800)	Schillers, 6 Old South Head Rd., Rose Bay North. 2030.	60800	1982	Premise Match	41m	South West
	CHEMISTS-PHARMACEUTICAL.	Cassimaty. P. E., 8 Old South Head Road. Rose Bay North. 2030	13045	1978	Premise Match	41m	South West
	CHEMISTS-PHARMACEUTICAL	Frape, E. F., 8 Old South Head Road, Rose Bay North. 2030	15291	1975	Premise Match	41m	South West
	STATIONERS-RETAIL	Frape's Newsagency., 6 Old South Head Rd., Rose Bay North. 2030	79972	1975	Premise Match	41m	South West
	NEWSAGENTS-GENERAL	Frape's Newsagency., 6 Old South Head Rd., Rose Bay North. 2030	63557	1975	Premise Match	41m	South West
	CHEMISTS-PHARMACEUTICAL	Frape, E. F., 8 Old South Head Rd., Rose Bay North	280393	1970	Premise Match	41m	South West
	NEWSAGENTS (N100)	Frapes Newsagency., 6 Old South Head Rd., Rose Bay North	343530	1970	Premise Match	41m	South West
	Chemists - Pharmaceutical	Frape, E. F., 8 Old South Head Rd., Rose Bay North	65027	1965	Premise Match	41m	South West
	STATIONERS—RETAIL	Rose Bay North P.O. (Cards), 6 Old South Head Rd., Rose Bay North	147684	1965	Premise Match	41m	South West
	Newsagents	Rose Bay North P.O., 6 Old South Head Rd., Rose Bay North	128435	1965	Premise Match	41m	South West
	CHEMISTS-PHARMACEUTICAL	Frape, E. F., 8 Old South Head Rd., Rose Bay North	287593	1961	Premise Match	41m	South West
	NEWSAGENTS	Loder, R. R., 6 Old South Head Rd., Rose Bay North	353272	1961	Premise Match	41m	South West
	CHEMISTS' SUPPLIERS & SUNDRYMEN	Frape, E. F., 8 Old South Head Rd., Rose Bay North	21171	1950	Premise Match	41m	South West
	CHEMISTS-PHARMACEUTICAL	Frape, E. F., 8 Old South Head Rd., Rose Bay North	21537	1950	Premise Match	41m	South West
	BOOKSELLERS &/OR STATIONERS	Lader, R., 6 Old South Head Rd., Rose Bay North	9573	1950	Premise Match	41m	South West
	NEWSAGENTS	Loder, R. R., 6 Old South Head Rd., Rose Bay North	88147	1950	Premise Match	41m	South West

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19	UPHOLSTERERS.	Bratton C., 693 Old South Head Rd., Vaucluse. 2030	73079	1978	Premise Match	46m	North
	UPHOLSTERERS.	Bratton, C., 693 Old South Head Rd., Vaucluse. 2030	85737	1975	Premise Match	46m	North
	UPHOLSTERERS (U050)	Bratton, C., 693 Old South Head Rd., Vaucluse	372011	1970	Premise Match	46m	North
	UPHOLSTERERS	Bratton, C. N. F., 693 Old South Head Rd., Vaucluse	111148	1950	Premise Match	46m	North
20	DRY CLEANERS & PRESSERS.	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2029	25253	1986	Premise Match	47m	South
	HAIRDRESSERS-LADIES &/OR BEAUTY SALONS.	Fontanella Beauty Salon, 663 Old South Head Rd., Rose Bay North. 2030	42063	1986	Premise Match	47m	South
	MEDICAL PRACTITIONERS.	Pozniak, M., 663 Old South Head Rd., Rose Bay. 2029	57031	1986	Premise Match	47m	South
	MEDICAL PRACTITIONERS.	Yaniv, I., 663 Old South Head Rd., Rose Bay North. 2030	58374	1986	Premise Match	47m	South
	DRY CLEANERS & PRESSERS.(D8500)	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2030.	23781	1982	Premise Match	47m	South
	MEDICAL PRACTITIONERS. (M2020)	Pozniak, M., 663 Old South Head Rd., Rose Bay. 2030.	49855	1982	Premise Match	47m	South
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Roberts Beauty Salon, 663 Old South Head Rd., Rose Bay North. 2030.	6408	1982	Premise Match	47m	South
	DRY CLEANERS, PRESSERS &/OR DYERS	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2029	20727	1978	Premise Match	47m	South
	MEDICAL PRACTITIONERS.	Pozniak, M., 663 Old South Head Rd., Rose Bay. 2029	43959	1978	Premise Match	47m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2030	23962	1975	Premise Match	47m	South
	MEDICAL PRACTITIONERS.	Pozniak, M., 663 Old South Head Rd., Rose Bay. 2030.	51322	1975	Premise Match	47m	South
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Roberts Beauty Salon, 663/2 Old South Head Rd., Rose Bay. 2030.	5863	1975	Premise Match	47m	South
21	POULTRY DEALERS - RETAIL.	Birds Galore, 4 Old South Head Rd., Rose Bay North. 2030	75544	1986	Premise Match	52m	South West
	POULTRY DEALERS - RETAIL. (P7480)	Birds Galore, 4 Old South Head Rd., Rose Bay North. 2030.	65628	1982	Premise Match	52m	South West
	BABY &/OR CHILDRENS WEAR- RETAIL.	Kiddalong. 4 Old South Head Rd., Rose Bay North. 2030	4036	1978	Premise Match	52m	South West
	DRESS SHOPS & ACCESSORIES.	Dawn's Salon, 4 Old South Head Rd., Rose Bay North. 2030	23101	1975	Premise Match	52m	South West
	DRESS SHOPS (D595)	Dawn's Salon., 4 Old South Head Rd., Rose Bay North	291173	1970	Premise Match	52m	South West
	DELICATESSENS (D080)	Food Fair Family Fare., 4 Old South Head Rd., Rose Bay North	287410	1970	Premise Match	52m	South West
	DELICATESSENS	Food Fair Family Fare, 4 Old South Head Rd., Rose Bay North	72165	1965	Premise Match	52m	South West
	DELICATESSENS	Evans, D. J., 4 Old South Head Rd., Rose Bay North	294794	1961	Premise Match	52m	South West
	GROCERS-RETAIL	Buttle, S. R. Pty. Ltd., 4 Old South Head Rd., Vaucluse	56687	1950	Premise Match	52m	South West
22	TAILORS - LADIES &/OR GENTS.(T0075)	Wigan, J., 693A Old South Head Rd., Vaucluse. 2030.	78052	1982	Premise Match	52m	North
	TAILORS-LADIES &/OR GENTS.	Wigan, J., 693A Old South Head Rd., Vaucluse. 2030	69153	1978	Premise Match	52m	North
	TAILORS-LADIES &/OR GENTS.	Wigan, J., 693A Old South Head Rd., Vaucluse. 2030	81765	1975	Premise Match	52m	North
	TAILORS-LADIES' &/OR GENTS	Wigan, J., 693a Old South Head Rd., Vaucluse	366957	1970	Premise Match	52m	North
	Tailors-Ladies'/Gents	Wigan, J., 693a Old South Head Rd., Vaucluse	149817	1965	Premise Match	52m	North
	TAILORS-LADIES'/GENT.'S	Wigan, J., 693a Old South Head Rd., Vaucluse	255169	1961	Premise Match	52m	North
23	FRUITERERS &/OR GREENGROCERS.	Krikis, S., 2 Old South Head Rd., Rose Bay North. 2030	36101	1986	Premise Match	58m	South West

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23	FRUITERERS &/OR GREENGROCERS. (F6775)	Krikls, S., 2 Old South Head Rd., Rose Bay North. 2030.	33668	1982	Premise Match	58m	South West
	FRUITERERS &/OR GREENGROCERS.	Krikis. S., 2 Old South Head Rd., Rose Bay North. 2030	30557	1978	Premise Match	58m	South West
	FRUITERERS &/OR GREENGROCERS.	Kirkis, S., 2 Old South Head Rd, Rose Bay North. 2030	35433	1975	Premise Match	58m	South West
	FRUITERERS/GREENGROCERS (F640)	Krikis, Sam., 2 Old South Head Rd., Rose Bay North	307341	1970	Premise Match	58m	South West
	Fruiterers & Greengrocers	Krikis, Sam., 2 Old South Head Rd., Rose Bay North	91534	1965	Premise Match	58m	South West
	FRUITERERS/GREENGROCERS	Denina, Leo, 2 Old South Head Rd., Rose Bay North	315265	1961	Premise Match	58m	South West
	FRUITERERS & GREENGROCERS	Rizzuto, G., 2 Old South Head Rd., Rose Bay North	51057	1950	Premise Match	58m	South West
24	GROCERS-RETAIL	Grocer 695., 695 Old South Head Rd., Vaucluse 2030	39487	1975	Premise Match	58m	North
	MILK, FRUIT JUICE BARS &/OR CONFECTIONERS.	Mick's Pacific Milk Bar, 695A Old South Head Rd, Vaucluse. 2030	53592	1975	Premise Match	58m	North
	GROCERS-RETAIL (G655)	Grocer "695"., 695 Old South Head Rd., Vaucluse	312504	1970	Premise Match	58m	North
	MILK, FRUIT JUICE BARS/CONFECTIONERS	Mick's Pacific Milk Bar., 695a Old South Head Rd., Vaucluse	330903	1970	Premise Match	58m	North
	Grocers - Retail	Grocer "695"., 695 Old South Head Rd. Rose Bay North	96578	1965	Premise Match	58m	North
	Milk, Fruit Juice Bars/Confectioners	Mick's Pacific Milk Bar, 695a Old South Head Rd., Vaucluse	115300	1965	Premise Match	58m	North
	GROCERS-RETAIL	Freedman, B. & L., 695 Old South Head Rd., Vaucluse	320489	1961	Premise Match	58m	North
	FRUITERERS/GREENGROCERS	Gavrily, J., 695a Old South Head Rd., Vaucluse	315438	1961	Premise Match	58m	North
	GROCERS-RETAIL	Goodall and Stewart, 695 Old South Head Rd., Vaucluse	57493	1950	Premise Match	58m	North
	FRUITERERS & GREENGROCERS	Troy, P. E., 695 Old South Head Rd., Rose Bay	51426	1950	Premise Match	58m	North
	FRUITERERS & GREENGROCERS	Watt, A. L., 695 Old South Head Rd., Vaucluse	51508	1950	Premise Match	58m	North
25	BUTCHERS-RETAIL.	Barry's P. Butchery, 661 Old South Head Rd, Rose Bay. 2029	9572	1986	Premise Match	59m	South
	HAIRDRESSERS-LADIES &/OR BEAUTY SALONS.	Hairbiz-Tina Feros 661A Old South Head Rd., Rose Bay North. 2030	42296	1986	Premise Match	59m	South
	BUTCHERS - RETAIL. (B8040)	Hannon, B., 661 Old South Head Rd., Rose Bay. 2030.	10955	1982	Premise Match	59m	South
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Tina Feros Hairbuz, 661A Old South Head Rd., Rose Bay North. 2030.	6641	1982	Premise Match	59m	South
	BUTCHERS-RETAIL.	Mack. R., 661 Old South Head Rd., Rose Bay. 2030	9501	1978	Premise Match	59m	South
	BUTCHERS-RETAIL	Winston's Quality Meat, 661 Old South Head Rd., Rose Bay. 2029	11413	1975	Premise Match	59m	South
	MEDICAL PRACTITIONERS (M216)	Coleman, R. S., 661 Old South Head Rd., Rose Bay	326478	1970	Premise Match	59m	South
	DRY CLEANERS,PRESSERS/DYERS (D710)	Express Dry Cleaners, 661 Old South Head Rd., Rose Bay	292291	1970	Premise Match	59m	South
	LAUNDRIES &/OR LAUNDRETTES(L250)	Express Dry Cleaners, 661 Old South Head Rd., Rose Bay	322581	1970	Premise Match	59m	South
26	CLOTHING-RETAIL-LADIES &/OR GIRLS WEAR.	Number One In Fashion, 659 Old South Head Rd., Rose Bay. 2029	17637	1986	Premise Match	71m	South
	DRESS SHOPS & ACCESSORIES.(D7450)	Number One In Fashion, 659 Old South Head Rd., Rose Bay. 2029	23235	1982	Premise Match	71m	South
	DELICATESSENS.	Orskis Delicatessen, 659 Old South Head Rd., Rose Bay. 2029	17612	1978	Premise Match	71m	South
	DELICATESSENS	Orskis Delicatessen, 659 Old South Head Rd., Rose Bay. 2029	20393	1975	Premise Match	71m	South
	HEALTH FOODS-RETAIL	Rose Bay North Hearth Foods, 659 Old South Head Rd., Rose Bay North. 2030	41885	1975	Premise Match	71m	South

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26	HEALTH FOOD RETAILERS (H350)	Rose Bay North Health Foods., 659 Old South Head Rd., Rose Bay North	316055	1970	Premise Match	71m	South
	Health Food Retailers	Rose Bay North Health Foods, 659 Old South Head Rd., Rose Bay North	100125	1965	Premise Match	71m	South
	MIXED BUSINESS	Purcell, V. J., 659 Old South Head Rd., Rose Bay North	342163	1961	Premise Match	71m	South
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Dolly Varden, 659 Old South Head Rd., Rose Bay North	7068	1950	Premise Match	71m	South
	CAKE SHOPS & PASTRYCOOKS	Sanderson, J. A., 659 Old South Head Rd., Rose Bay North	17194	1950	Premise Match	71m	South
	DELICATESSENS & SMALLGOODS DEALERS	Sanderson, J. A., 659 Old South Head Rd., Rose Bay North	31143	1950	Premise Match	71m	South
	MILK BARS & CONFECTIONERS	Sanderson, J. A., 659 Old South Head Rd., Rose Bay North	77322	1950	Premise Match	71m	South
	MIXED BUSINESSES & GENERAL STORES	Sanderson, J. A., 659 Old South Head Rd., Rose Bay North	80934	1950	Premise Match	71m	South
27	MEDICAL PRACTITIONERS	Segal, Isaac, 15 Captain Piper Rd., Vaucluse	336284	1961	Premise Match	73m	North West
28	OPTOMETRISTS-REGISTERED	Piggott, O. A., 13 Captain Pipers Rd., Vaucluse	90230	1950	Premise Match	73m	North West
29	HAIRDRESSERS-LADIES &/OR BEAUTY SALONS.	Charlie Brown Coiffure, 700 Old South Head Rd., Rose Bay North. 2030	41787	1986	Premise Match	79m	South West
	BEAUTICIANS.	Juliet Nails, 4 Towns Rd., Rose Bay. 2030	5760	1986	Premise Match	79m	South West
	DENTISTS.	Katz, L. S., 698 Old South Head Rd., Rose Bay North. 2030	22821	1986	Premise Match	79m	South West
	HAIRDRESSERS-LADIES &/OR BEAUTY SALONS.	Kindest Cut, The, 704A Old South Head Rd., Rose Bay. 2029	42576	1986	Premise Match	79m	South West
	BEAUTICIANS.	Maya, 698 Old South Head Rd, Rose Bay North. 2030	5791	1986	Premise Match	79m	South West
	WINE &/OR SPIRIT MERCHANTS RETAIL.	Rose Bay Cellars, 704 Old South Head Rd., Rose Bay. 2029	99522	1986	Premise Match	79m	South West
	DENTISTS.	Stricker, A. G., 698 Old South Head Rd., Rose Bay. 2029	23398	1986	Premise Match	79m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Alpine Hair Design, 704A Old South Head Rd., Rose Bay. 2029.	5180	1982	Premise Match	79m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS. (B2000)	Charlie Brown Coiffure, 700 Old South Head Rd., Rose Bay North. 2029.	5400	1982	Premise Match	79m	South West
	DENTISTS. (D1800)	Katz, L. S., 698 Old South Head Rd., Rose Bay North. 2030.	20419	1982	Premise Match	79m	South West
	BEAUTICIANS. (B1985)	Maya, 698 Old South Head Rd., Rose Bay North. 2030.	5138	1982	Premise Match	79m	South West
	WINE &/OR SPIRIT MERCHANTS -. RETAIL. (W5960)	Rose Bay Cellars, 704 Old South Head Rd., Rose Bay. 2029.	84927	1982	Premise Match	79m	South West
	DENTISTS. (D1800)	Strieker, A. G., 698 Old South Head Rd., Rose Bay. 2029.	20895	1982	Premise Match	79m	South West
	TRAVEL AGENCIES &/OR BOOKING OFFICES. (T7425)	Sutherland, D., 8 Towns Pde., Vaucluse. 2030.	82141	1982	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Carlisle. R. N., 44 Dudley Rd., Rose Bay North. 2029	49763	1978	Premise Match	79m	South West
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Charlie Brown Coiffure, 700 Old South Head Rd., Rose Bay North. 2029	4831	1978	Premise Match	79m	South West
	WINE &/OR SPIRIT MERCHANTS- RETAIL.	Rose Bay Cellars, 704 Old South Head Rd., Rose Bay. 2029	74824	1978	Premise Match	79m	South West
	DENTISTS.	Stricker, A. G., 698 Old South Head Rd., Rose Bay. 2029	18528	1978	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Carlisle, R. N., 44 Dudley Rd., Rose Bay North. 2029	58636	1975	Premise Match	79m	South West
	ANIMAL &/OR BIRD DEALERS.	Pet Shop, 700 Old South Head Rd., Rose Bay North. 2029	2320	1975	Premise Match	79m	South West
	DENTISTS.	Stricker. A. G., 698 Old South Head Rd., Rose Bay. 2029	21411	1975	Premise Match	79m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
29	MOTOR GARAGES & ENGINEERS(M6S6)	Carlisle, R. N., 44 Dudley Rd., Rose Bay North	337533	1970	Premise Match	79m	South West
	MOTOR PAINTERS (M672)	Carr & Kirby, 44 Dudley St., Rose Bay North	339179	1970	Premise Match	79m	South West
	DRAPERS-RETAIL (D540)	Fuller, A. K., 2 Towns Rd., Rose Bay North	290383	1970	Premise Match	79m	South West
	LIBRARIES-LENDING (L450)	Leisure Hour Library., 6 Towns Rd., Rose Bay North	323199	1970	Premise Match	79m	South West
	WINE/SPIRIT MERCHANTS-RETAIL	May & Son, 704 Old South Head Rd., Rose Bay	374559	1970	Premise Match	79m	South West
	GROCERS-RETAIL (G655)	May and Son., 704 Old South Head Rd., Rose Bay	312738	1970	Premise Match	79m	South West
	ANTIQUE DEALERS (A400)	Morris Antiques, 8 Towns Rd, Rose Bay North	261758	1970	Premise Match	79m	South West
	DRESSMAKERS/COSTUMIERS (D600)	Paulina., 700 Old South Head Rd., Rose Bay North	292008	1970	Premise Match	79m	South West
	DRESSMAKERS/COSTUMIERS (D600)	Paulina., 700 Old South Head Rd., Rose Bay North	292009	1970	Premise Match	79m	South West
	DENTISTS (D140)	Strieker, A. G., 698 Old South Head Rd., Rose Bay North	289060	1970	Premise Match	79m	South West
	Dressmakers/Costumiers	"Paulina", 700 Old South Head Rd., Rose Bay North	75833	1965	Premise Match	79m	South West
	Motor Garages & Engineers	Carlisle, R. N., 44 Dudley Rd., Rose Bay North	123322	1965	Premise Match	79m	South West
	Motor Painters	Carr & Kirby, 44 Dudley St., Rose Bay North	123776	1965	Premise Match	79m	South West
	Drapers - Retail	Fuller, A. K., 2 Towns Rd., Rose Bay North	75049	1965	Premise Match	79m	South West
	Libraries - Lending	Leisure Hour Library, 6 Towns Rd., Rose Bay North	107721	1965	Premise Match	79m	South West
	Hardware Dealers &/or Iron Mongers	May & Son, 704 Old South Head Rd. Rose Bay	99450	1965	Premise Match	79m	South West
	Wine/Spirit Merchants - Retail	May & Son., 704 Old South Head Rd., Rose Bay	157330	1965	Premise Match	79m	South West
	Grocers - Retail	May and Son., 704 Old South Head Rd., Rose Bay	96847	1965	Premise Match	79m	South West
	Dentists	Stricker, A. G., 698 Old South Head Rd., Rose Bay North	73760	1965	Premise Match	79m	South West
	Electrical Contractors - Licensed	Wilson, E. Tom, 8 Towns Rd. Rose Bay	78809	1965	Premise Match	79m	South West
	Electrical Supplies/Appliances Retailers	Wilson, E. Tom., 8 Towns Rd., Rose Bay North	79729	1965	Premise Match	79m	South West
	DRESSMAKERS/COSTUMIERS	“Paulina,” 700 Old South Head Rd., Rose Bay North	298503	1961	Premise Match	79m	South West
	UPHOLSTERERS	Berger, M., 4 Towns Rd., Rose Bay North	260413	1961	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS	Carlisle, R. N., 44 Dudley Rd., Rose Bay North	346821	1961	Premise Match	79m	South West
	MOTOR PAINTERS	Carr & Kirby, 44 Dudley St., Rose Bay North	348714	1961	Premise Match	79m	South West
	DRAPERS-RETAIL	Fuller, A. K., 2 Towns Rd., Rose Bay North	297893	1961	Premise Match	79m	South West
	MERCERS—MEN’S & BOYS’ OUTFITTERS	Fuller, A. K., 2 Towns Rd., Rose Bay North	336901	1961	Premise Match	79m	South West
	LIBRARIES—LENDING	Leisure Hour Library, 6 Towns Rd., Rose Bay North	331449	1961	Premise Match	79m	South West
	HARDWARE DEALERS/IRONMONGERS	May & Son., 704 Old South Head Rd., ROSE BAY	323499	1961	Premise Match	79m	South West
	GROCERS-RETAIL	May and Son, 704 Old South Head Rd., Rose Bay	320847	1961	Premise Match	79m	South West
	DENTISTS	Strieker, A. G., 698 Old South Head Rd., Rose Bay North	296451	1961	Premise Match	79m	South West
	FLORISTS-RETAIL	“Ann Marie”, 700 Old South Head Rd., Rose Bay North	45690	1950	Premise Match	79m	South West
	LIBRARIES-LENDING	“Leisure Hour” (Miss D. Hagan), 6 Towns Rd., Rose Bay North	68441	1950	Premise Match	79m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
29	MERCERS & GENT'S OUTFITTERS	Fuller, A. K., 2 Towns Rd., Rose Bay North	74371	1950	Premise Match	79m	South West
	JEWELLERS-RETAIL &/OR WATCHMAKERS	Hansard, D. A., 8 Towns Rd., Rose Bay Heights	66149	1950	Premise Match	79m	South West
	FOUNTAIN PEN MFRS &/OR IMPORTERS	Jones, F. B., 702 Old South Head Rd., Rose Bay North	48001	1950	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS	King's Garage, 44 Dudley Rd., Rose Bay North	83955	1950	Premise Match	79m	South West
	MOTOR SERVICE STATIONS-PETROL, Etc.	Kings Garage, 44 Dudley Rd., Rose Bay North	86107	1950	Premise Match	79m	South West
	GROCERS-RETAIL	May and Son, 704 Old South Head Rd., Rose Bay	58230	1950	Premise Match	79m	South West
	HARDWARE DEALERS &/OR IRONMONGERS	May and Son, 704 Old South Head Rd., Rose Bay	61216	1950	Premise Match	79m	South West
	AUCTIONEERS-GENERAL	White, Mr. J., "Eastern Suburbs Auctions", 4 Towns Rd., Rose Bay North	4200	1950	Premise Match	79m	South West
30	Banks	Commonwealth Banking Corporation, 657 Old South Rd, Rose Bay North 2030	35536	1991	Premise Match	83m	South
	BEAUTY SALONS &/OR LADIES HAIRDRESSERS.	Roberts Beauty Salon, 657 Old South Head Rd., Rose Bay North. 2029	5862	1975	Premise Match	83m	South
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS (B260)	Roberts Beauty Salon., 657 Old South Head Rd., Rse By N	266553	1970	Premise Match	83m	South
	Beauty Salons &/or Ladies Hairdressers	Roberts Beauty Salon., 657 Old South Head Rd., Rose Bay North	51151	1965	Premise Match	83m	South
	BEAUTY SALONS & LADIES' HAIRDRESSERS	Roberts Beauty Salon., 657 Old South Head Rd., Rse By N	272747	1961	Premise Match	83m	South
	BANKS	Commonwealth Bank of Australia and Commonwealth Savings Bank of Australia, 657 Old South Head Rd., Rose Bay North	5897	1950	Premise Match	83m	South
31	ENGINEERS-HOT WATER, HEATING & VENTILATING	Bedwell, L. R., 6 Norton Ave., Rose Bay	41486	1950	Premise Match	88m	South
32	NEWSAGENTS	Druce, H. A., 697 Old South Head Rd., Vaucluse	353146	1961	Premise Match	89m	North
33	NEWSAGENTS	Druce, H. A., 54 Old South Head Rd., Vaucluse	87963	1950	Premise Match	93m	North West
34	BEAUTICIANS.	Art of Nails, The, 655 Old South Head Rd., Rose Bay. 2030	5664	1986	Premise Match	95m	South
	FLORISTS-RETAIL.	Red Rose Florist, 655 Old South Head Rd., Rose Bay. 2030	28599	1978	Premise Match	95m	South
	FLORISTS-RETAIL	Red Rose Florist, 655 Old South Head Rd., Rose Bay. 2030.	33133	1975	Premise Match	95m	South

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Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records 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:

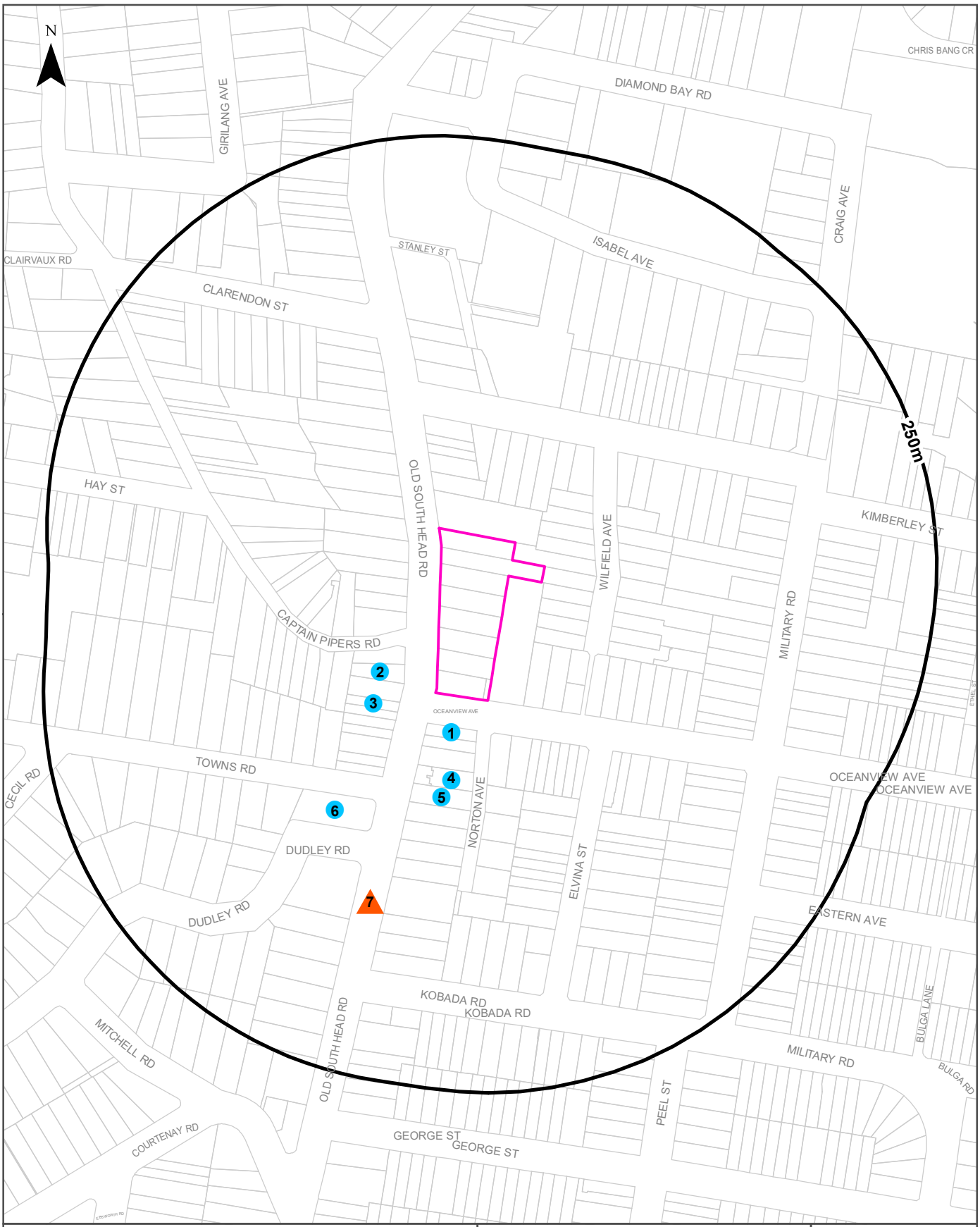
Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
35	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Christina, Miss, 157 Old South Head Rd., Vaucluse	6980	1950	Road Match	0m
36	Schools/Colleges - Private/Public	Our Lady of Mercy Girls' Colleges, Old South Head Rd., Rose Bay	142871	1965	Road Match	20m
	ENGINEERS-GENERAL/MFRG./ MECHANICAL	Austral Engineering Products Pty. Ltd., 418 Old South Head Rd., Rose Bay	306147	1961	Road Match	20m
	SCHOOLS/COLLEGES-PRIVATE/PUBLIC	Our Lady of Mercy Girls' Colleges, Old South Head Rd., Rose Bay	248350	1961	Road Match	20m
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Porter Bros., Old South Head Rd., Rose Bay North	350975	1961	Road Match	20m
	BANKS	Bank of N.S.W, 892b Old South Head Rd.	5712	1950	Road Match	20m
	BEAUTY SALONS &/OR LADIES' HAIRDRESSERS	Ford, Mrs. N., 896b Old South Head Rd., Rose Bay	7159	1950	Road Match	20m
	BAKERS-BREAD	Hawkins and Abberton Pty. Ltd. 868 Old South Head Rd., Rose Bay	5305	1950	Road Match	20m
	BOATS, LAUNCHES & YACHTS-FOR HIRE	Miller, F., 854 Old South Head Rd., Rose Bay	8937	1950	Road Match	20m
	MOTOR SERVICE STATIONS-PETROL, Etc.	Porter Bros., Old South Head Rd., Rose Bay North	86291	1950	Road Match	20m
	PICTURE THEATRES-SUBURBAN	Rose Bay Kings, Old South Head Rd., Rose Bay	92890	1950	Road Match	20m
	FRUITERERS & GREENGROCERS	Rosonakis, J., 854 Old South Head Rd., Rose Bay	51083	1950	Road Match	20m
	BOOKSELLERS &/OR STATIONERS	Steele, L. L., 880 Old South Head Rd., Rose Bay	9791	1950	Road Match	20m
	GROCERS-RETAIL	Wilson, A., 870 Old South Head Rd., Rose Bay	56185	1950	Road Match	20m
37	FRUITERERS & GREENGROCERS	Sanders, A. T., Towns Rd., Vaucluse	51132	1950	Road Match	63m
38	PAINTERS, PAPERHANGERS/DECORATORS	Cottier, H. S., Military Rd., Vaucluse	355999	1961	Road Match	69m
	PAINTERS, PAPERHANGERS/DECORATORS	Wood & James, Military Rd., Rose Bay Heights, ROSE BAY	356502	1961	Road Match	69m
39	MOTOR PAINTERS.	Carr & Kirby., 44 Dudley St., Rose Bay North. 2029	60028	1975	Road Match	99m
	MOTOR PANEL BEATERS (M680)	Gittoes, N., 44 Dudley Rd., Rose Bay North	340064	1970	Road Match	99m
	Upholsterers	Dight & Coy., 42 Dudley Rd., Rose Bay	154881	1965	Road Match	99m
	Motor Panel Beaters	Gittoes, N., 44 Dudley Rd., Rose Bay North	124660	1965	Road Match	99m
	Engineers - Production	Ireland, H. W., 44 Dudley Rd., Rose Bay North	83745	1965	Road Match	99m
	Engineers General &/or Mfrg. &/or Mechanical	Ireland, H. W., 44 Dudley Rd., Rose Bay North	82509	1965	Road Match	99m
	CLOTHING MFRS. &/OR W'SALERS-DRESSING GOWNS	Albion Clothing Co., 42 Dudley Rd., Rose Bay	289305	1961	Road Match	99m
	UPHOLSTERERS	Dight & Coy., 42 Dudley Rd., Rose Bay	260444	1961	Road Match	99m
	MOTOR PANEL BEATERS	Gittoes, N., 44 Dudley Rd., Rose Bay North	349596	1961	Road Match	99m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
39	MOTOR PANEL BEATERS	King Garage, 44 Dudley Rd., Rose Bay North	349696	1961	Road Match	99m

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Dry Cleaners, Motor Garages & Service Stations

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Legend

- Site Boundary
- Buffer 250m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 40 80 120 160 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 24 October 2023

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

Historical Business Directories

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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	DRY CLEANERS & PRESSERS.	Joan & John, 667A Old South Head Rd., Rose Bay North. 2030	53123	1988	Premise Match	20m	South
	DRY CLEANERS & PRESSERS.	Joan & John, 667A Old South Head Rd., Rose Bay North. 2030	25349	1986	Premise Match	20m	South
	DRY CLEANERS & PRESSERS.	Joan & John, 667A Old South Head Rd., Rose Bay North. 2030	34568	1985	Premise Match	20m	South
	DRY CLEANERS & PRESSERS.	Joan & John, 667A Old South Head Rd., Rose Bay North. 2030	22018	1984	Premise Match	20m	South
	DRY CLEANERS & PRESSERS.	Joan & John., 667A Old South Head Rd., Rose Bay North 2030	8607	1983	Premise Match	20m	South
	DRY CLEANERS & PRESSERS.(D8500)	Joan & John, 667A Old South Head Rd., Rose Bay North. 2030.	23882	1982	Premise Match	20m	South
	DRY CLEANERS & PRESSERS.	Joan & John., 667A Old South Head Rd., Rose Bay North. 2030	63363	1981	Premise Match	20m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Joan & John., 667A Old South Head Rd., Rose Bay North. 2030	46792	1980	Premise Match	20m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Joan & John., 667A Old South Head Rd., Rose Bay North. 2030.	35388	1979	Premise Match	20m	South
2	DRY CLEANERS, PRESSERS & DYERS	“Astra” Dry Cleaners Pty. Ltd., 24 Old South Head Rd., Rose Bay North	35020	1950	Premise Match	21m	South West
	DRY CLEANERS, PRESSERS & DYERS.	Astra Dry Cleaners Pty. Ltd., 24 Old South Head Rd Rose Bay North	17065	1948-49	Premise Match	21m	South West
3	DRY CLEANERS & PRESSERS.	Vaucluse Laundromat, 16 Old South Head Rd., Rose Bay North. 2030	53319	1988	Premise Match	24m	South West
	DRY CLEANERS & PRESSERS.	Vaucluse Laundromat, 16 Old South Head Rd., Rose Bay North. 2030	25551	1986	Premise Match	24m	South West
	DRY CLEANERS & PRESSERS.	Vaucluse Laundromat, 16 Old South Head Rd., Rose Bay North. 2030	38828	1985	Premise Match	24m	South West
	DRY CLEANERS & PRESSERS.	Rose Bay North Laundromat, 16 Old South Head Rd., Rose Bay North. 2030	22165	1984	Premise Match	24m	South West
	DRY CLEANERS & PRESSERS.	Rose Bay North Laundromat., 16 Old South Head Rd., Rose Bay North 2030	8759	1983	Premise Match	24m	South West
	DRY CLEANERS & PRESSERS.(D8500)	Rose Bay North Laundromat, 16 Old South Head Rd., Rose Bay North. 2030.	24029	1982	Premise Match	24m	South West
	DRY CLEANERS & PRESSERS.	Rose Bay North Laundromat., 16 Old South Head Rd., Rose Bay North. 2030	63519	1981	Premise Match	24m	South West
	DRY CLEANERS, PRESSERS &/OR DYERS.	Rose Bay North Laundromat., 16 Old South Head Rd., Rose Bay North. 2030	50001	1980	Premise Match	24m	South West
	DRY CLEANERS, PRESSERS &/OR DYERS.	Rose Bay North Laundromat., 16 Old South Head Rd., Rose Bay North. 2030.	35539	1979	Premise Match	24m	South West
4	DRY CLEANERS & PRESSERS.	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2029	53029	1988	Premise Match	47m	South
	DRY CLEANERS & PRESSERS.	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2029	25253	1986	Premise Match	47m	South

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
4	DRY CLEANERS & PRESSERS.	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2029	34469	1985	Premise Match	47m	South
	DRY CLEANERS & PRESSERS.	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2029	21915	1984	Premise Match	47m	South
	DRY CLEANERS & PRESSERS.	Capri Dry Cleaners., 663 Old South Head Rd., Rose Bay 2029	8504	1983	Premise Match	47m	South
	DRY CLEANERS & PRESSERS.(D8500)	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2030.	23781	1982	Premise Match	47m	South
	DRY CLEANERS & PRESSERS.	Capri Dry Cleaners., 663 Old South Head Rd., Rose Bay. 2030	63267	1981	Premise Match	47m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Capri Dry Cleaners., 663 Old South Head Rd., Rose Bay. 2030	46702	1980	Premise Match	47m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Capri Dry Cleaners., 663 Old South Head Rd., Rose Bay. 2030.	35300	1979	Premise Match	47m	South
	DRY CLEANERS, PRESSERS &/OR DYERS	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2029	20727	1978	Premise Match	47m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay 2030	23438	1976	Premise Match	47m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Capri Dry Cleaners, 663 Old South Head Rd., Rose Bay. 2030	23962	1975	Premise Match	47m	South
	DRY CLEANERS, PRESSERS &/OR DYERS.	Capri Dry Cleaners., 663 Old South Head Rd., Rose Bay 2029	2818	1972	Premise Match	47m	South
5	DRY CLEANERS, PRESSERS &/OR DYERS	Express Dry Cleaners., 661 Old South Head Rd Rose Bay	51033	1971	Premise Match	59m	South
	DRY CLEANERS,PRESSERS /DYERS (D710)	Express Dry Cleaners, 661 Old South Head Rd., Rose Bay	292291	1970	Premise Match	59m	South
	DRY CLEANERS, PRESSERS/ DYERS	Express Dry Cleaners., 661 Old South Head Rd Rose Bay	37096	1969	Premise Match	59m	South
	DRY CLEANERS, PRESSERS/DYERS	Express Dry Cleaners., 661 Old South Head Rd Rose Bay	20557	1968	Premise Match	59m	South
	DRY CLEANERS, PRESSERS/ DYERS	Express Dry Cleaners., 661 Old South Head Rd Rose Bay	6115	1967	Premise Match	59m	South
6	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Carlisle. R. N., 44 Dudley Rd., Rose Bay North. 2029	49763	1978	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Carlisle R. N., 44 Dudley Rd., Rose Bay North 2029	29695	1976	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Carlisle, R. N., 44 Dudley Rd., Rose Bay North. 2029	58636	1975	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Carlisle R. N., 44 Dudley Rd., Rose Bay North	12970	1972	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Carlisle R. N., 44 Dudley Rd., Rose Bay North	62635	1971	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS(M6S6)	Carlisle, R. N., 44 Dudley Rd., Rose Bay North	337533	1970	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS.	Carlisle R. N., 44 Dudley Rd., Rose Bay North	47077	1969	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS	Carlisle R. N., 44 Dudley Rd., Rose Bay North	26461	1968	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS.	Carlisle R. N., 44 Dudley Rd., Rose Bay North	10950	1967	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS.	Carlisle R. N., 44 Dudley Rd Rose Bay North.	60685	1966	Premise Match	79m	South West
	Motor Garages & Engineers	Carlisle, R. N., 44 Dudley Rd., Rose Bay North	123322	1965	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS	Carlisle, R. N., 44 Dudley Rd., Rose Bay North.,	48598	1964	Premise Match	79m	South West

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
6	MOTOR GARAGES & ENGINEERS.	Carlisle R. N., 44 Dudley Rd., Rose Bay North	33348	1962	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS	Carlisle, R. N., 44 Dudley Rd., Rose Bay North	346821	1961	Premise Match	79m	South West
	MOTOR GARAGES & ENGINEERS.	Kings Garage., 44 Dudley Rd., Rose Bay North	19912	1959	Premise Match	79m	South West
	MOTOR GARAGE/ENGINEERS.	Kings Garage., 44 Dudley Rd Rose Bay North	4401	1958	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Carlisle R. N., 44 Dudley Rd Rose Bay	57385	1956	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	King Garage., 44 Dudley Rd Rose Bay North	57917	1956	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Carlisle R. N., 44 Dudley Rd Rose Bay	49011	1954	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	King's Garage., 44 Dudley Rd Rose Bay North	49523	1954	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Carlisle R. N., 44 Dudley Rd Rose Bay	36722	1953	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	King's Garage., 44 Dudley Rd., Rose Bay North	40226	1953	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	Carlisle R. N., 44 Dudley Rd Rose Bay	31438	1952	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	King's Garage., 44 Dudley Rd., Rose Bay North	31832	1952	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS	King’s Garage, 44 Dudley Rd., Rose Bay North	83955	1950	Premise Match	79m	South West
	MOTOR SERVICE STATIONS-PETROL, Etc.	Kings Garage, 44 Dudley Rd., Rose Bay North	86107	1950	Premise Match	79m	South West
	MOTOR SERVICE STATIONS-PETROL, ETC.	Kings Garage., 44 Dudley Rd Rose Bay North	23361	1948-49	Premise Match	79m	South West
	MOTOR GARAGES &/OR ENGINEERS.	King's Garage., 44 Dudley Rd Rose Bay North	22520	1948-49	Premise Match	79m	South 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.

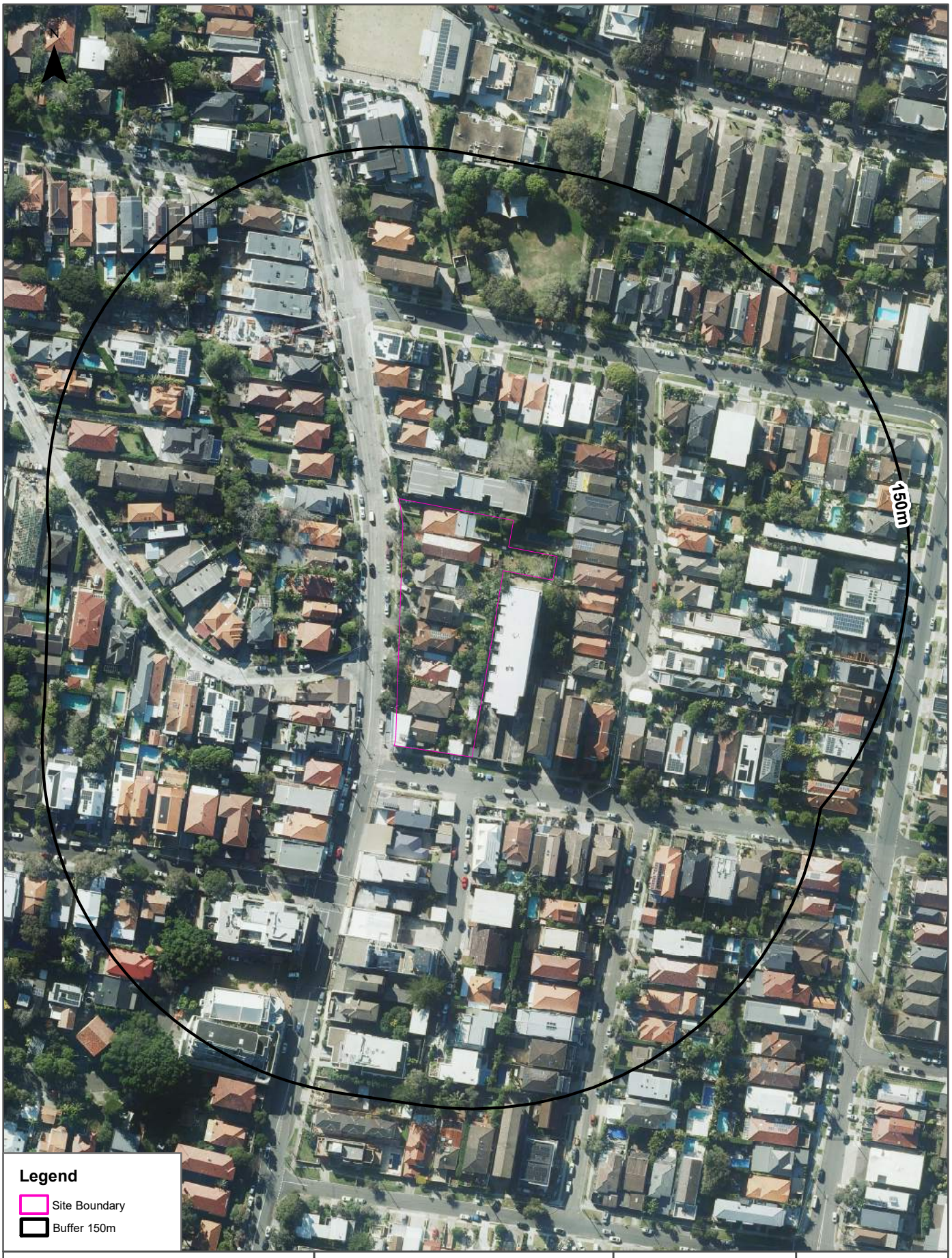
Note: The Universal Business Directories were published between 1948 and 1993. Dry Cleaners, Motor Garages & Service Stations have been extracted from all of these directories except the following years 1951, 1955, 1957, 1960, 1963, 1973, 1974, 1977, 1987.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
7	MOTOR SERVICE STATIONS-PETROL, OIL, ETC.	Porter Bros., Old South Head Rd., Rose Bay North	38637	1962	Road Match	20m
	MOTOR SERVICE STATIONS—PETROL, OIL, Etc.	Porter Bros., Old South Head Rd., Rose Bay North	350975	1961	Road Match	20m
	MOTOR SERVICE STATIONS-PETROL,. OIL, ETC.	Porter Bros., Old South Head Rd., Rose Bay North	24526	1959	Road Match	20m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Porter Bros., Old South Head Rd Rose Bay North	9753	1958	Road Match	20m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Porter Bros., Old South Head Rd., Rose Bay North	65353	1956	Road Match	20m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Porter Bros., Old South Head Rd Rose Bay North	54620	1954	Road Match	20m
	MOTOR SERVICE STATIONS–PETROL, ETC.	Porter Bros., Old South Head Rd Rose Bay North	44173	1953	Road Match	20m
	MOTOR SERVICE STATIONS–PETROL, ETC.	Porter Bros., Old South Head Rd Rose Bay North	35956	1952	Road Match	20m
	MOTOR SERVICE STATIONS-PETROL, Etc.	Porter Bros., Old South Head Rd., Rose Bay North	86291	1950	Road Match	20m
	MOTOR SERVICE STATIONS-PETROL, ETC.	Porter Bros., Old South Head Rd Rose Bay North	26702	1948-49	Road Match	20m

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Aerial Imagery 2023

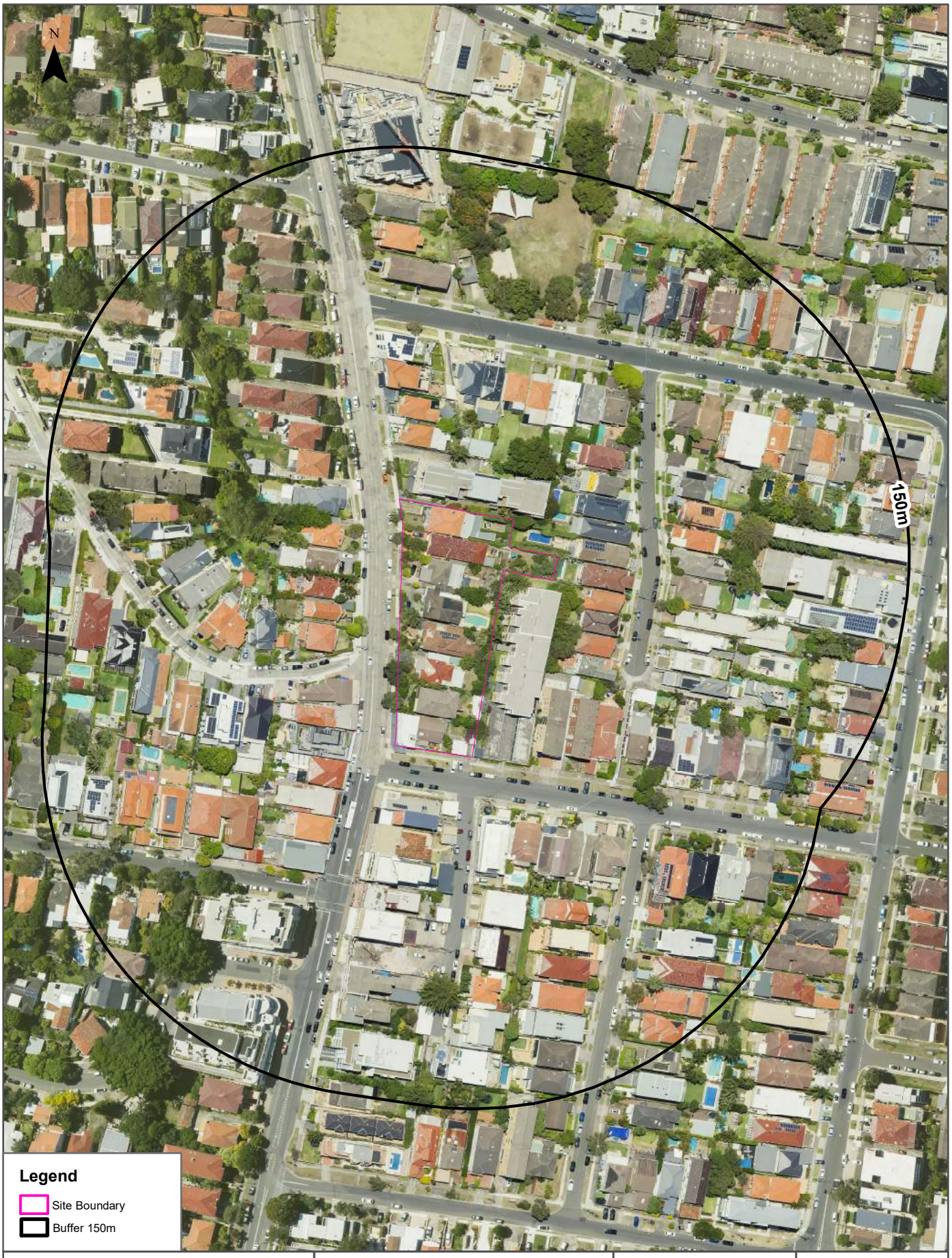
669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2020

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2017

669 - 683 Old South Head Road, Vaucluse, NSW 2030



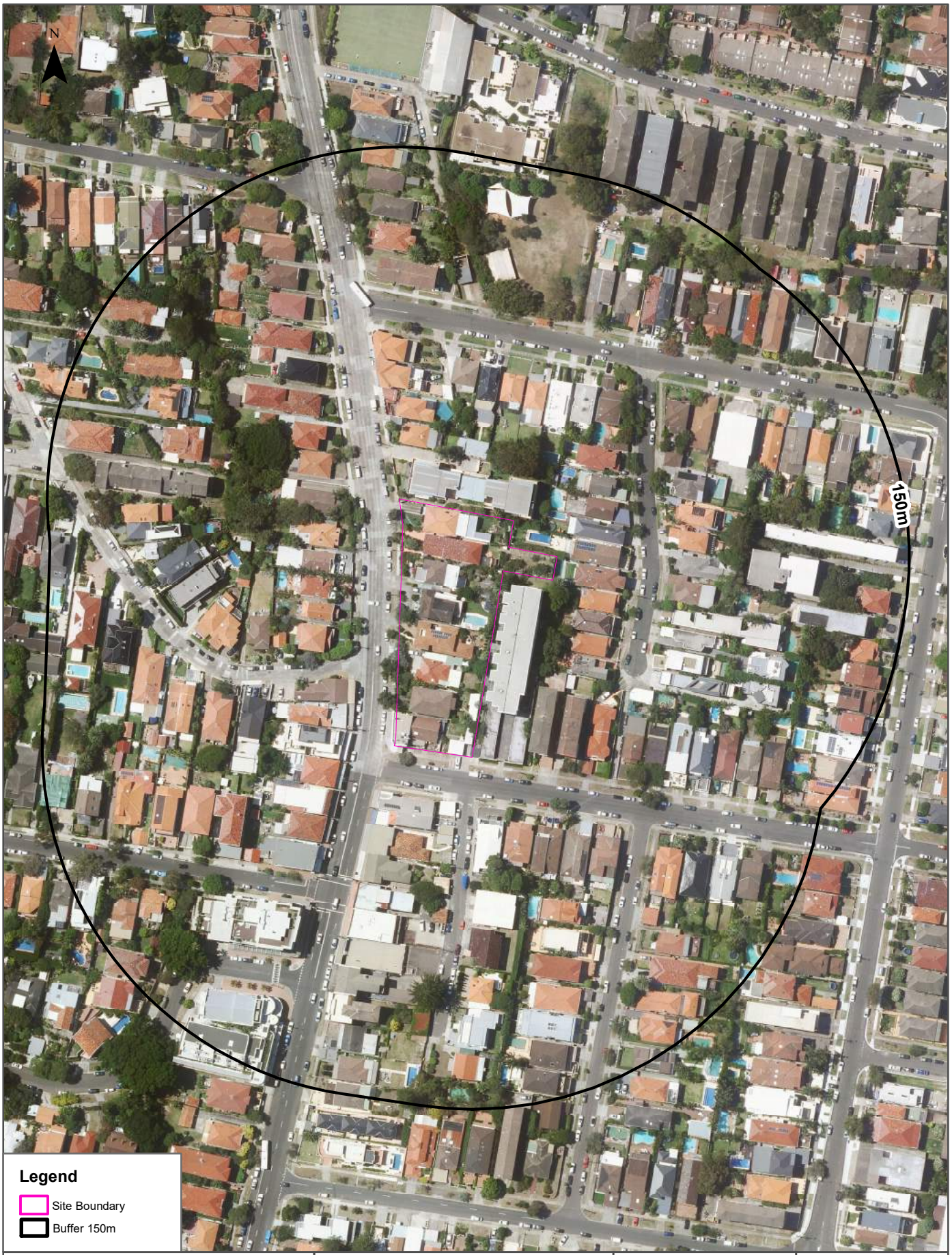
Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 56

Date: 24 October 2023

Aerial Imagery 2014

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale: 0 25 50 75 100 Meters	Data Source Aerial Imagery: © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 24 October 2023

Aerial Imagery 2011

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2007

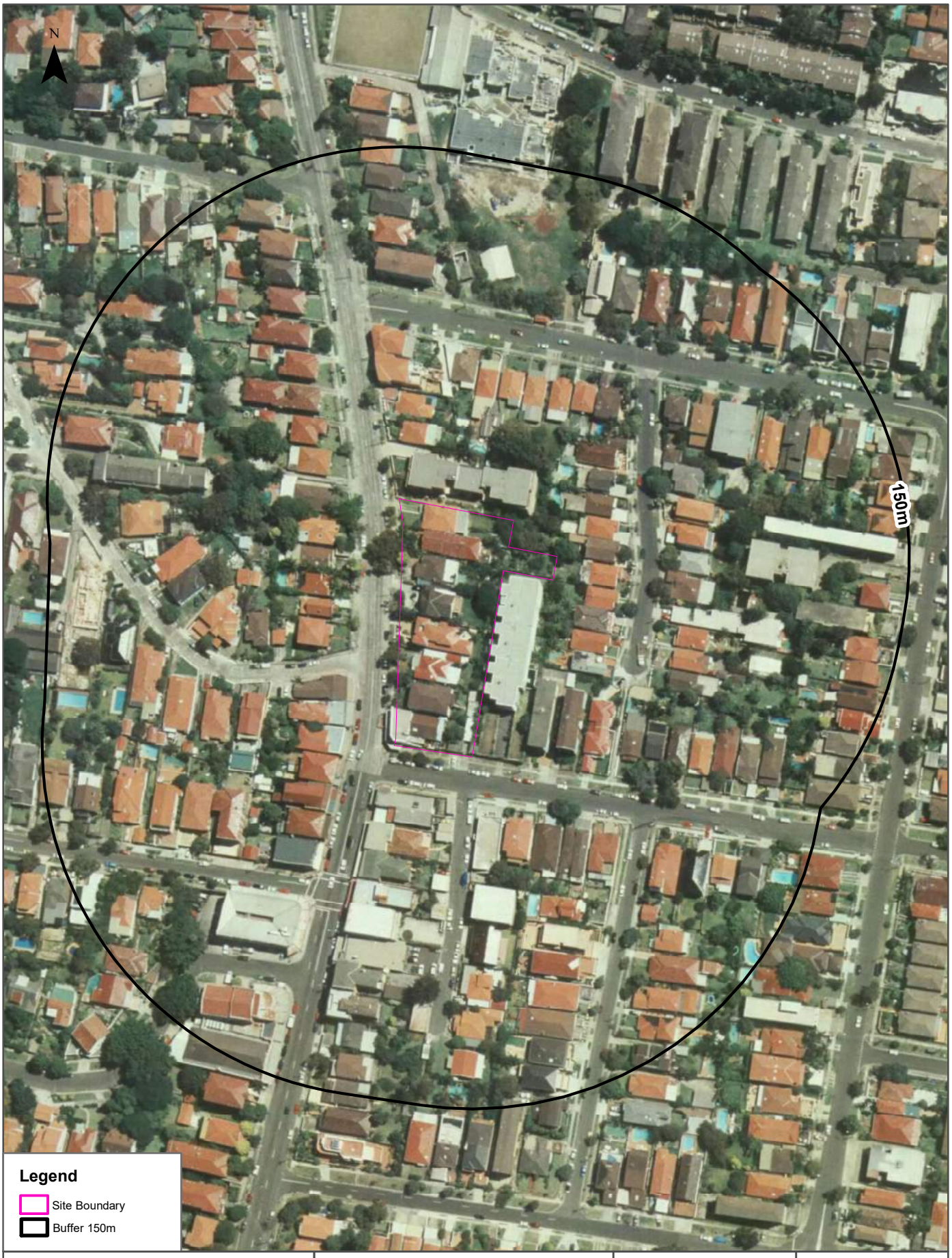
669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale: 0 25 50 75 100 Meters	Data Source Aerial Imagery: © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 24 October 2023

Aerial Imagery 2000

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Aerial Imagery 1994

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:
0 25 50 75 100
Meters

Data Sources: Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 24 October 2023

Aerial Imagery 1991

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Data Sources: Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 24 October 2023

Aerial Imagery 1986

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1982

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1978

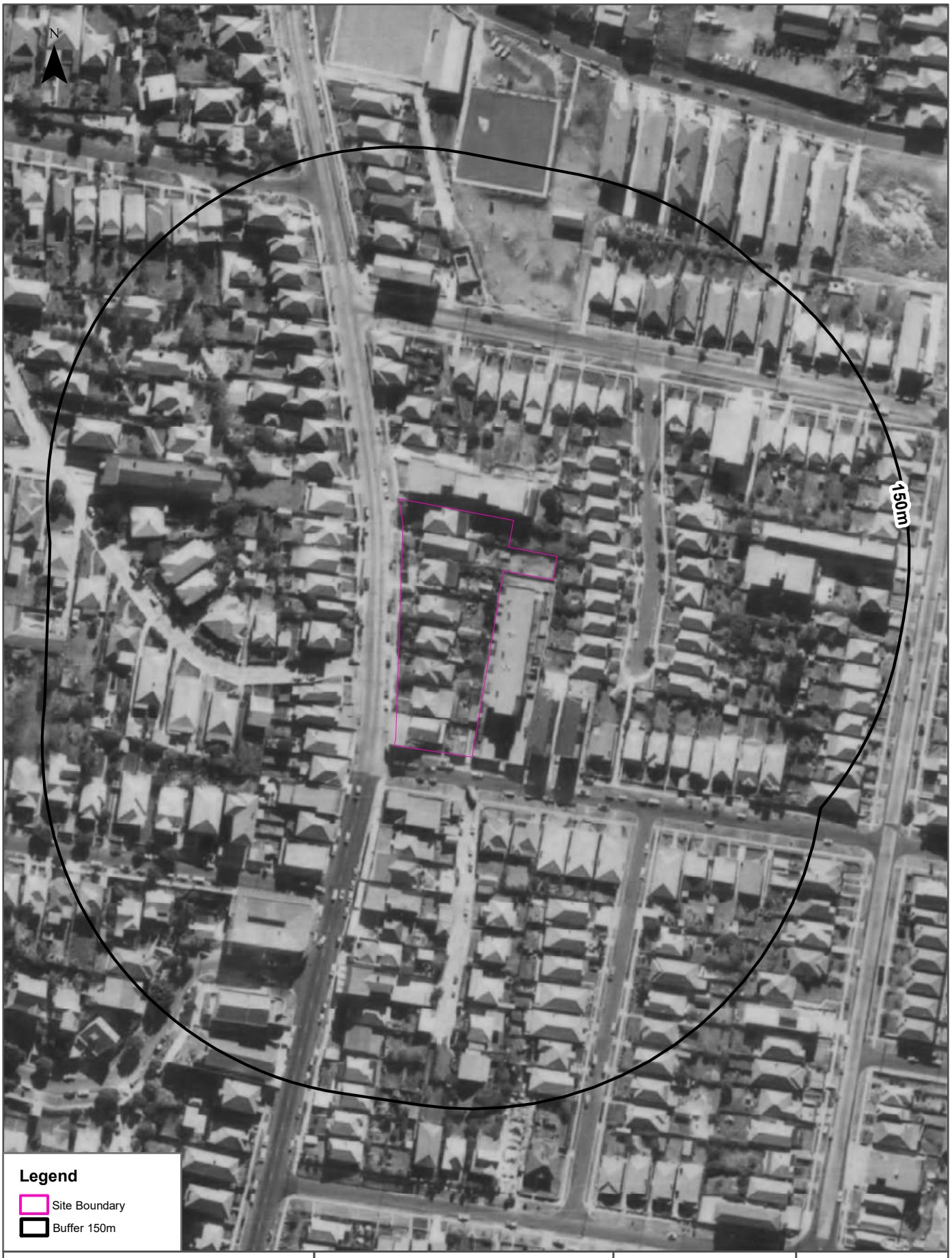
669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1970

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:
0 25 50 75 100
Meters

Data Sources: Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 24 October 2023

Aerial Imagery 1961

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1955, 1956

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1951

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Sources: Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1943

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 24 October 2023
0 25 50 75 100 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 1930

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Topographic Map 2015

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Scale: 0 140 280 420 560 Meters

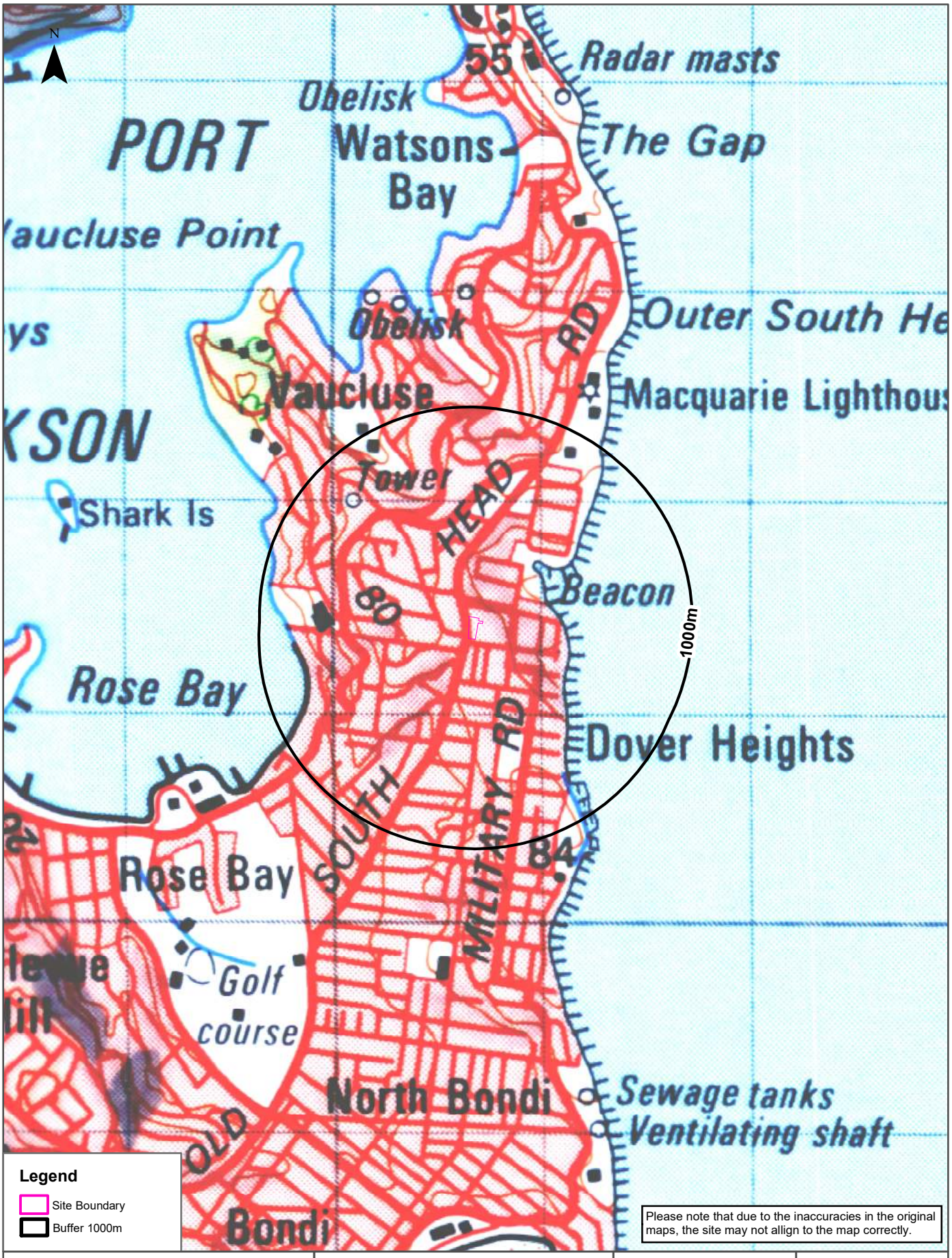
Data Sources: Topographic Map Data © NSW Land and Property Information

Coordinate System: GDA 1994 MGA Zone 56

Date: 24 October 2023

Historical Map 1975

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Historical Map c.1936

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Legend

- Site Boundary
- Buffer 1000m

Please note that due to the inaccuracies in the original maps, the site may not allign to the map correctly.

Scale: 0 290 580 870 1,160 Meters

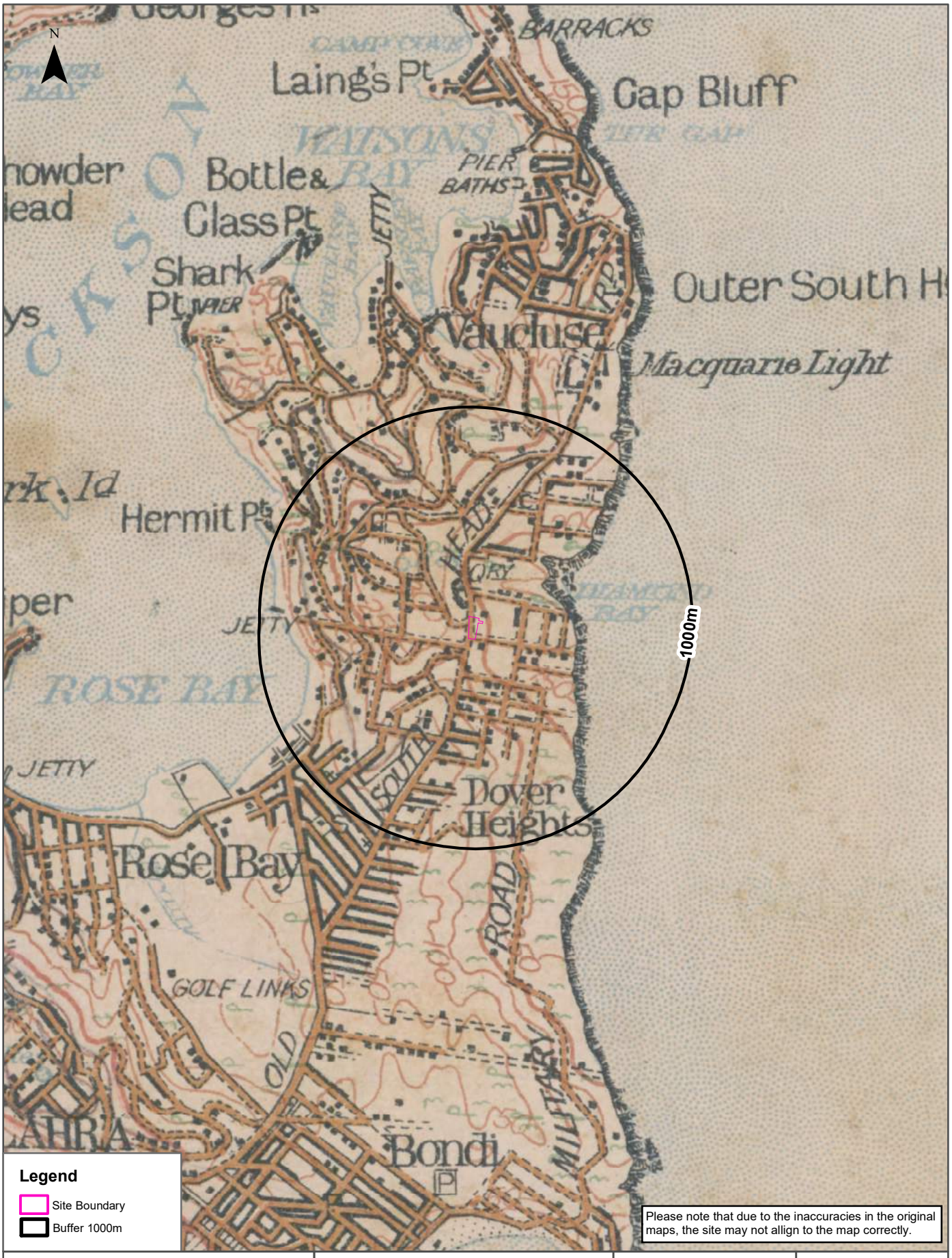
Data Sources: Australia 1:63360
Produced by Australian Section Imperial General Staff

Coordinate System:
GDA 1994 MGA Zone 56

Date: 24 October 2023

Historical Map c.1917

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Topographic Features

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 24 October 2023

Topographic Features

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
425821	Community Facility	HATZOLAH CFR	12m	North
286549	Post Office	ROSE BAY NORTH POST OFFICE	54m	South
417580	Community Facility	KIMBERLEY RESERVE COMMUNITY HALL	106m	North
308879	Park	KIMBERLEY RESERVE	120m	North
314280	Community Facility	DIAMOND BAY BOWLING CLUB	196m	North
308837	Sports Field	BOWLING GREENS	227m	North
337137	Urban Place	DIAMOND BAY	249m	North East
286548	Park	DIAMOND BAY RESERVE	326m	North East
337136	Urban Place	ROSE BAY NORTH	361m	South West
335769	Bay / Inlet / Basin	DIAMOND BAY	421m	East
286540	Place Of Worship	SOUTH HEAD SYNAGOGUE	425m	South
392962	Nursing Home	VAUCLUSE NURSING HOME	428m	North East
417522	Park	EASTERN RESERVE	454m	South East
401664	Post Office	VAUCLUSE POST OFFICE	472m	North
423687	Filtration Plant	Filtration Plant	527m	South
286539	Park	DUDLEY PAGE RESERVE	546m	South
354824	Lookout	JOHNSTONS LOOKOUT	561m	North West
422456	Nursing Home	MARKMORAN AT VAUCLUSE	580m	North
286474	Park	Park	604m	South East
286544	Park	FORSYTH PARK	613m	West
337138	Suburb	VAUCLUSE	617m	North West
353767	Sports Field	BOWLING GREENS	619m	North
286542	Combined Primary-Secondary School	KAMBALA	623m	West
286552	Cemetery	SOUTH HEAD GENERAL CEMETERY	625m	North
424798	Park	VAUCLUSE PARK	638m	North West
354547	Community Facility	VAUCLUSE BOWLING CLUB	648m	North
403816	Retirement Village	PRINCESS GARDENS	654m	South
286554	Park	SAMUEL PARK	671m	North
399639	High School	KINCOPPAL ROSE BAY SCHOOL OF THE SACRED HEART	691m	West
286543	Place Of Worship	ST MICHAEL'S ANGLICAN CHURCH	745m	West
286486	Park	DUMARESQ RESERVE	766m	West

Map Id	Feature Type	Label	Distance	Direction
403821	Primary School	KINCOPPAL ROSE BAY SCHOOL OF THE SACRED HEART	791m	West
286545	Convent/Monastery	ROSE BAY CONVENT	792m	West
425381	Historic Site	Historic Site	833m	West
286550	Park	CLARKE RESERVE	857m	North East
410344	Wharf	Wharf	864m	West
407315	Embassy	CONSULATE OF THE CZECH REPUBLIC	875m	South
399559	Primary School	MCAULEY PRIMARY SCHOOL	893m	South West
286536	Park	CAFFYN PARK	896m	South
286541	Place Of Worship	ST MARY MAGDALENE	896m	South West
286546	Park	HERMITAGE RESERVE	919m	West
286537	Combined Primary-Secondary School	KESSER TORAH COLLEGE	927m	South
286535	Place Of Worship	ST ANDREW'S PRESBYTERIAN CHURCH	967m	South West
286553	Post Office	ROSE BAY POST OFFICE	973m	South West

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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
15549	Water	Operational	VAUCLUSE RESERVOIR	01/01/2008	390m	North West

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
172884	Water	Operational		02/09/2000	369m	North West
194729	Water	Operational		01/05/2020	582m	South

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
159804255	Primary	Right of way	3m and Variable	59m	East
120122032	Primary	Undefined		492m	West
120112046	Primary	Undefined		597m	North West
120120047	Primary	Undefined		598m	North West
162758678	Primary	Right of way	variable	735m	West
151426253	Primary	Right of way	1.83 VARIABLE	810m	South West
120120155	Primary	Undefined		862m	North West
120108841	Primary	Undefined		883m	West

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

State Forest

What State Forest exist within the dataset buffer?

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

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

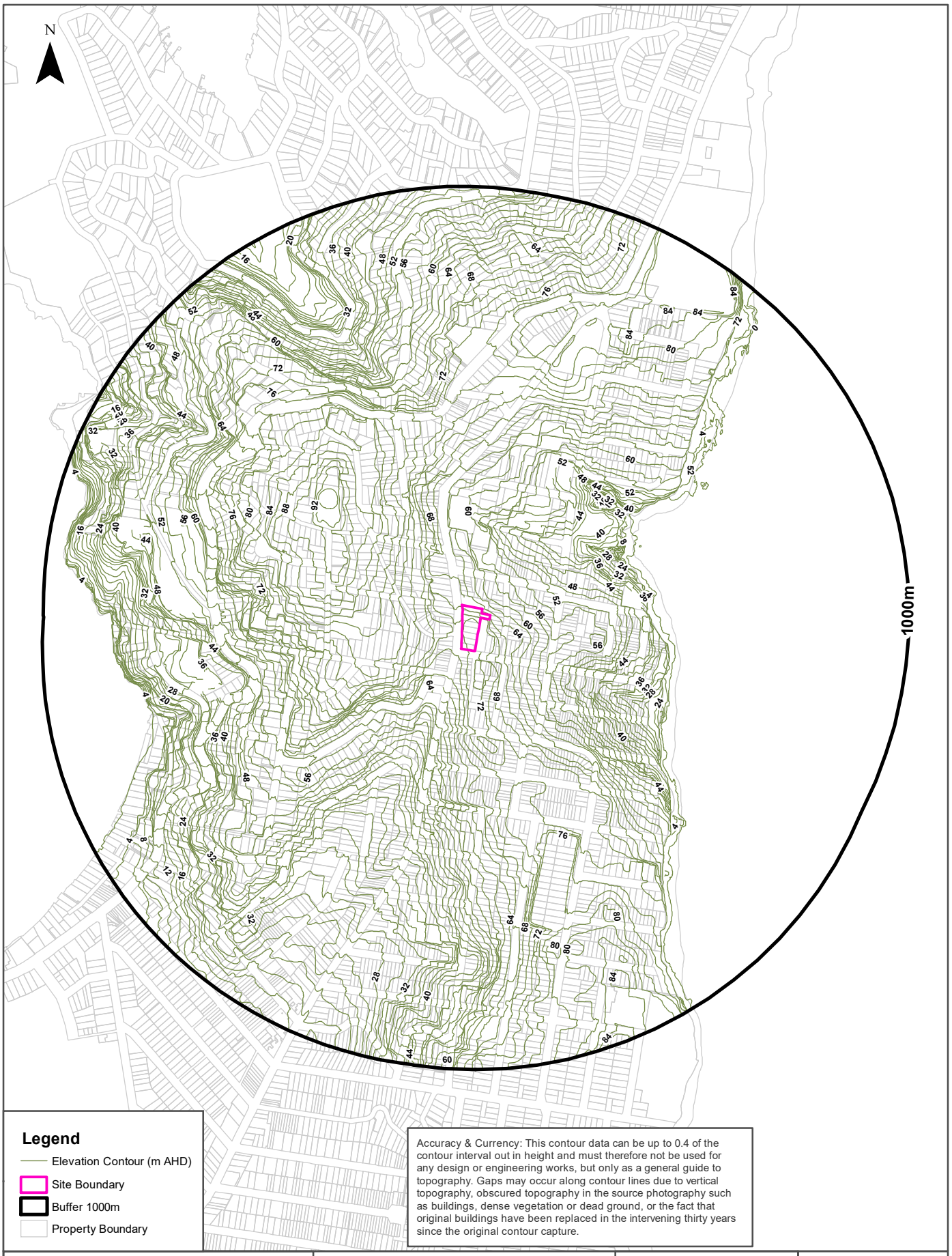
What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N0039	NATIONAL PARK	Sydney Harbour National Park	04/04/1975	839m	West

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)
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Elevation Contours (m AHD)

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Hydrogeology & Groundwater

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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 2018

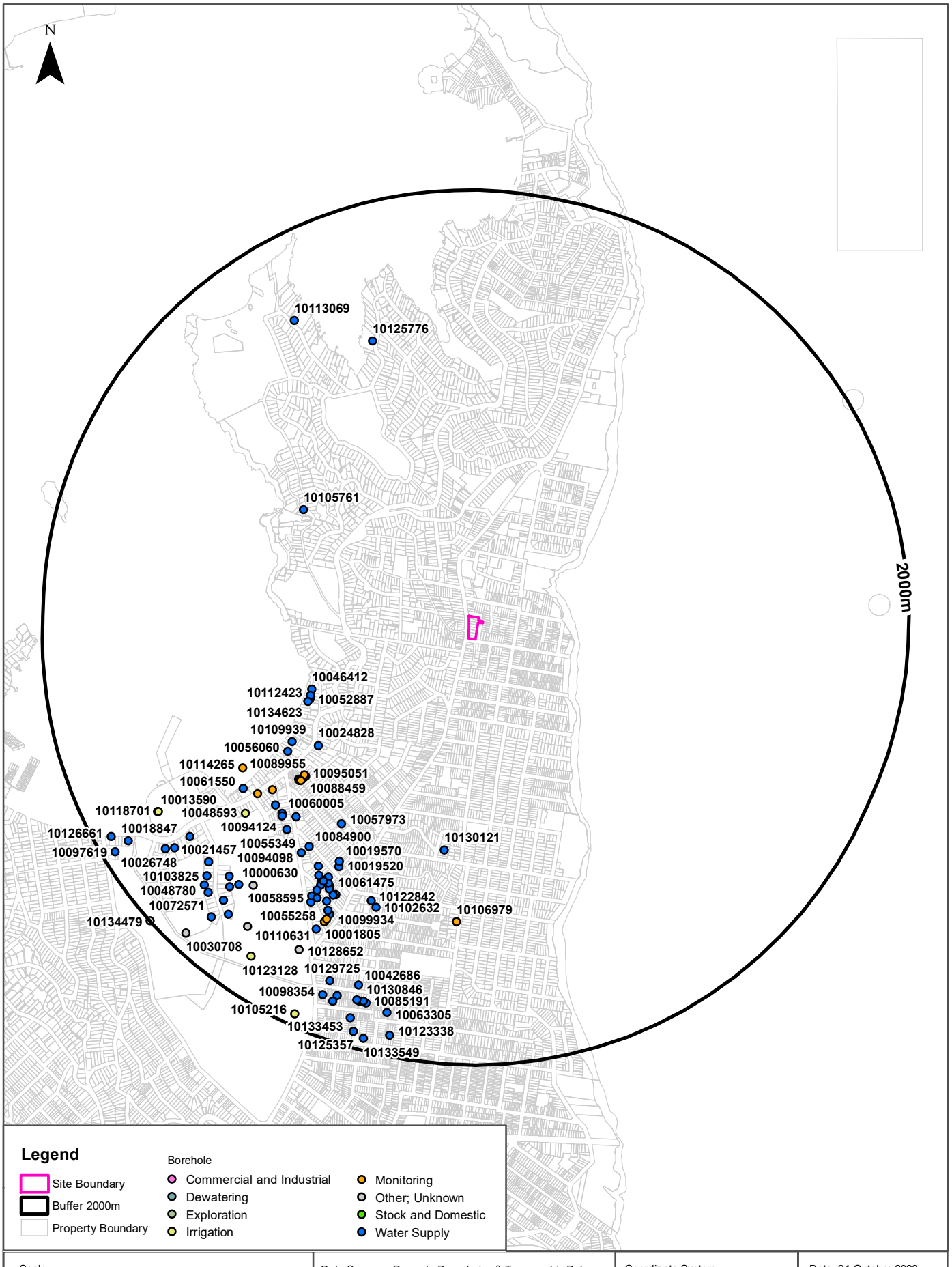
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

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

Groundwater Boreholes

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Legend

- Site Boundary
- Buffer 2000m
- Property Boundary

Borehole

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

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

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 24 October 2023

Hydrogeology & Groundwater

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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
10046412	GW110857	Water Supply	Unknown	05/05/2009	4.00		AHD	Good	0.500	2.00	771m	West
10112423	GW107986	Water Supply	Functioning	28/03/2006	3.66		AHD		1.000	1.83	788m	South West
10052887	GW106407	Water Supply	Functioning	20/09/2004	4.00		AHD		0.500	2.00	796m	South West
10134623	GW106127	Water Supply	Functioning	18/03/2004	4.00		AHD		0.500	2.00	808m	South West
10024828	GW107663	Water Supply	Functioning	12/12/2005	11.59		AHD	Good	1.000	7.63	867m	South West
10105761	GW024239	Water Supply	Functioning		8.50		AHD				922m	North West
10109939	GW116353	Water Supply	Functioning	14/02/2020	5.80		AHD				960m	South West
10056060	GW108824	Water Supply	Functioning	27/03/2007	6.10		AHD	Good	1.000	2.75	1001m	South West
10089955	GW110765	Monitoring	Unknown	01/01/2005	6.00		AHD		0.300	3.00	1001m	South West
10130121	GW109638	Water Supply	Unknown	08/10/2008	82.00		AHD	Good	1.000	37.40	1001m	South
10095051	GW110764	Monitoring	Unknown	01/01/2005	6.00		AHD		0.300	3.00	1002m	South West
10088719	GW110766	Monitoring	Unknown	01/01/2005	6.00		AHD		0.300	3.00	1015m	South West
10088459	GW110767	Monitoring	Unknown	01/01/2005	6.00		AHD		0.300	3.00	1025m	South West
10100781	GW110768	Monitoring	Unknown	01/01/2005	6.00		AHD		0.300	3.00	1032m	South West
10093057	GW110770	Monitoring	Unknown	01/01/2005	6.00		AHD		0.300	3.00	1037m	South West
10093973	GW110769	Monitoring	Unknown	01/01/2005	6.00		AHD		0.300	3.00	1037m	South West
10057973	GW023993	Water Supply	Unknown	01/03/1966	6.00		AHD	Good			1055m	South West
10107413	GW115517	Monitoring	Functioning	21/08/2012	5.00		AHD				1162m	South West
10117553	GW109047	Water Supply	Unknown	15/07/2008	12.00		AHD				1166m	South West
10126321	GW016957	Water Supply	Unknown		6.70		AHD	Good			1197m	South West
10060005	GW109090	Water Supply	Unknown	22/07/2008	6.10		AHD	Good		3.05	1200m	South West
10094124	GW107451	Water Supply	Functioning	08/03/2005	6.10		AHD		1.000	3.50	1208m	South West
10019570	GW108170	Water Supply	Functioning	05/08/2006	10.50		AHD				1210m	South West
10114265	GW115518	Monitoring	Functional	21/08/2012	5.00		AHD				1221m	South West
10111471	GW115519	Monitoring	Removed	21/08/2012	5.00		AHD				1229m	South West
10084900	GW107848	Water Supply	Unknown	20/03/2006	9.50		AHD				1232m	South West
10019520	GW111593	Water Supply	Functioning	01/01/2006	9.00		AHD			4.00	1234m	South West
10055349	GW108319	Water Supply	Functioning	25/11/2005	6.00		AHD		1.000	4.00	1240m	South West
10061550	GW108706	Water Supply	Functioning	21/05/2007	4.00		AHD	Good	0.500	2.00	1272m	South West

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10094098	GW107343	Water Supply	Unknown	15/08/2005	9.50		AHD				1276m	South West
10119324	GW111174	Water Supply	Functioning	26/10/2010	12.00		AHD				1282m	South West
10071162	GW108471	Water Supply	Unknown	05/02/2007	12.00		AHD				1301m	South West
10122842	GW108917	Water Supply	Unknown	17/06/2008	8.00		AHD				1315m	South
10096582	GW109232	Water Supply	Unknown	19/08/2008	12.00		AHD				1317m	South West
10130637	GW110426	Water Supply	Unknown	15/04/2009	13.12		AHD	Good	1.000	7.15	1325m	South West
10090508	GW106073	Water Supply	Functioning	20/05/2004	9.46		AHD		1.000	7.01	1327m	South West
10133561	GW107110	Water Supply	Functioning	18/05/2004	9.76		AHD	Good	1.000	6.71	1328m	South West
10048593	GW101708	Irrigation	Unknown	01/02/1999	6.00		AHD		0.500	2.00	1331m	South West
10106979	GW115381	Monitoring	Functional	24/01/2007	8.00		AHD				1331m	South
10061475	GW107316	Water Supply	Functioning	19/08/2005	10.98		AHD		1.000		1334m	South West
10102632	GW107574	Water Supply	Unknown	20/10/2005	10.00		AHD				1337m	South
10093546	GW107196	Water Supply	Functioning	16/05/2005	9.15		AHD		1.000	6.41	1347m	South West
10018755	GW111591	Water Supply	Functioning	31/05/2009	10.06		AHD	good	1.000	6.71	1353m	South West
10098063	GW111642	Water Supply	Functioning	16/01/2007	10.00		AHD			10.00	1356m	South West
10118830	GW108672	Water Supply	Unknown	29/03/2007	11.00		AHD				1363m	South West
10125776	GW106625	Water Supply	Unknown	28/10/2004	35.00		AHD	220	3.000	8.00	1367m	North
10043800	GW110723	Water Supply	Unknown	18/02/2007	15.00		AHD		2.500	2.00	1381m	South West
10125596	GW107527	Water Supply	Functioning	17/10/2005	12.81		AHD	Good	1.000	8.85	1403m	South West
10124324	GW106003	Water Supply	Functioning	27/07/2004	10.06		AHD	Good	1.000	7.32	1412m	South West
10058595	GW106800	Water Supply	Functioning	13/11/2004	10.00		AHD				1418m	South West
10128273	GW110702	Water Supply	Unknown	01/05/2007	12.00		AHD		0.080	12.00	1439m	South West
10055258	GW106660	Water Supply	Functioning	15/11/2004	9.00		AHD				1443m	South West
10099934	GW106077	Water Supply	Functioning	14/06/2004	12.20		AHD	Good	1.000	18.23	1451m	South West
10113674	GW115379	Monitoring	Functional	24/01/2007	8.00		AHD				1478m	South West
10113388	GW115378	Monitoring	Functional	23/01/2007	8.00		AHD				1494m	South West
10123744	GW107639	Other	Unknown	05/11/2004	23.00		AHD	160	4.000	0.90	1538m	South West
10001805	GW023930	Water Supply	Unknown	01/04/1966	7.60		AHD	Good			1542m	South West
10000630	GW031066	Water Supply	Unknown	01/04/1968	13.50		AHD				1581m	South West
10034041	GW106016	Water Supply	Functioning	01/06/2005	10.00		AHD				1585m	South West
10024860	GW108435	Water Supply	Functioning	02/09/2005	5.50		AHD		1.200	4.00	1605m	South West
10021457	GW112483	Water Supply	Functioning	01/01/2010	8.00		AHD				1609m	South West
10113069	GW108503	Water Supply	Functioning	25/01/2007	60.00		AHD	Good	2.000	9.20	1610m	North West
10111990	GW107353	Water Supply	Unknown	01/09/2005	9.50		AHD				1620m	South West

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10103825	GW107319	Water Supply	Functioning	20/07/2005	8.54		AHD		1.000	5.49	1659m	South West
10128652	GW053131	Other	Unknown	01/01/1981	18.00		AHD	0-500 ppm			1664m	South West
10118701	GW027414	Irrigation	Functioning	01/09/1965	16.30		AHD				1667m	South West
10013590	GW026441	Irrigation	Unknown	01/07/1966	8.20		AHD	Potable			1671m	South West
10134487	GW106123	Water Supply	Functioning	20/04/2004	17.00		AHD	329	0.200	11.40	1685m	South West
10090879	GW106322	Water Supply	Functioning	12/07/2004	6.00		AHD	Good	0.500	2.00	1695m	South West
10048780	GW108830	Water Supply	Functioning	28/05/2007	7.93		AHD		1.000	4.88	1697m	South West
10110631	GW103047	Other	Unknown				AHD				1707m	South West
10072571	GW110872	Water Supply	Unknown	01/01/2006	8.00		AHD		2.500	2.00	1708m	South West
10042686	GW101057	Water Supply	Functioning	08/09/1997	6.00		AHD		1.000		1710m	South
10093889	GW107453	Water Supply	Unknown	18/10/2010	26.00		AHD	good	1.000	8.00	1718m	South West
10026748	GW111466	Water Supply	Unknown	01/03/2011	4.00		AHD		0.500	2.00	1732m	South West
10129725	GW111432	Water Supply	Functioning	09/04/2011	8.00		AHD				1737m	South
10130846	GW107017	Water Supply	Functioning	29/03/2005	6.00		AHD	Good	0.500	3.00	1776m	South
10133556	GW107382	Water Supply	Functioning	09/08/2005	8.54		AHD	Good	1.000	4.58	1778m	South
10122395	GW107758	Water Supply	Functioning	09/01/2006	6.00		AHD	Good	0.500	4.00	1779m	South
10134626	GW105985	Water Supply	Functioning	05/03/2004	5.00		AHD				1780m	South West
10085191	GW111779	Water Supply	Functioning	14/12/2005	7.00		AHD	good	0.500	5.00	1781m	South
10088244	GW111274	Water Supply	Functioning	02/12/2006	6.00		AHD	good	0.500	4.00	1782m	South
10101065	GW107586	Water Supply	Functioning	12/11/2005	7.20		AHD	175	0.500	3.70	1790m	South
10063305	GW108470	Water Supply	Unknown	03/02/2007	12.00		AHD				1800m	South
10098354	GW101223	Water Supply	Functioning	17/12/1997	10.67		AHD	Good	1.000	7.62	1809m	South
10123128	GW017353	Irrigation	Unknown	01/04/1959	17.30		AHD	Good			1810m	South West
10123754	GW111310	Water Supply	Functioning	09/02/2011	8.00		AHD				1820m	South
10018847	GW107529	Water Supply	Functioning	17/10/2005	5.79		AHD	Good	1.000	2.13	1859m	South West
10133453	GW106734	Water Supply	Functioning	23/11/2004	4.00		AHD	Good	0.500	2.00	1868m	South
10123338	GW108405	Water Supply	Unknown	28/11/2006	8.00		AHD				1902m	South
10126661	GW107877	Water Supply	Functioning	27/04/2005	6.00		AHD		0.500	2.00	1917m	South West
10030708	GW108684	Other	Functioning	12/02/1996	20.00		AHD	Good	8.000	3.50	1918m	South West
10125357	GW105608	Water Supply	Unknown	15/11/2003	6.00		AHD				1925m	South
10097619	GW106321	Water Supply	Functioning	01/07/2004	4.00		AHD	Good	0.500	2.00	1938m	South West
10105216	GW027566	Irrigation	Non-functional	01/07/1965	23.80		AHD	Good			1944m	South West
10133549	GW108272	Water Supply	Unknown	08/10/2006	8.00		AHD				1945m	South
10134479	GW108001	Other	Unknown	01/03/2006	18.70		AHD	210	6.500	1.90	1999m	South West

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Driller's Logs

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

NGIS Bore ID	Drillers Log	Distance	Direction
10046412	0.00m-0.30m TOPSOIL 0.30m-2.50m SAND BROWN 2.50m-4.00m SAND YELLOW	771m	West
10112423	0.00m-3.66m sand	788m	South West
10052887	0.00m-0.30m topsoil 0.30m-3.50m sand, yellow 3.50m-4.00m sand, grey	796m	South West
10134623	0.00m-0.40m topsoil 0.40m-3.30m sand, dark brown 3.30m-4.00m sand, grey silty	808m	South West
10024828	0.00m-11.59m Sand, unconsolidated	867m	South West
10056060	0.00m-6.10m sand	1001m	South West
10130121	0.00m-1.00m TOPSOIL 1.00m-82.00m WHITE SANDSTONE	1001m	South
10057973	0.00m-0.91m Sand Grey 0.91m-1.52m Sand White 1.52m-2.13m Sand Hard Cemented 2.13m-3.65m Sand 3.65m-6.09m Sand Yellow Water Supply	1055m	South West
10094124	0.00m-6.10m sand	1208m	South West
10019570	0.00m-10.50m sand	1210m	South West
10084900	0.00m-9.50m sand	1232m	South West
10055349	0.00m-6.60m sand	1240m	South West
10061550	0.00m-0.30m topsoil 0.30m-3.00m sand, yellow 3.00m-4.00m sand, brown	1272m	South West
10094098	0.00m-9.50m sand	1276m	South West
10119324	0.00m-12.00m SAND	1282m	South West
10071162	0.00m-12.00m sand	1301m	South West
10130637	0.00m-13.12m UNCONSOLIDATED ALL SANDS	1325m	South West
10090508	0.00m-9.46m sand, unconsolidated	1327m	South West
10133561	0.00m-9.76m Sand, unconsolidated	1328m	South West
10048593	0.00m-0.50m Topsoil, Fill, Rocks 0.50m-6.00m Light Brown Sand	1331m	South West
10061475	0.00m-10.98m Sand, unconsolidated	1334m	South West
10102632	0.00m-10.00m sand	1337m	South
10093546	0.00m-9.75m sand	1347m	South West
10018755	0.00m-10.06m UNCONSOLIDATED ALL SANDS	1353m	South West
10118830	0.00m-11.00m sand	1363m	South West
10125776	0.00m-0.30m BLACK CLAY 0.30m-10.00m WEATHERED YELLOW SANDSTONE 10.00m-35.00m YELLOW/WHITE/RED SANDSDTONE	1367m	North
10043800	0.00m-14.03m UNCONSOLIDATE ALL SAND	1381m	South West

NGIS Bore ID	Drillers Log	Distance	Direction
10125596	0.00m-12.81m Sand, unconsolidated	1403m	South West
10124324	0.00m-10.06m sand, unconsolidated	1412m	South West
10058595	0.00m-10.00m sand	1418m	South West
10055258	0.00m-9.00m sand	1443m	South West
10099934	0.00m-12.20m sand, uconsolidated	1451m	South West
10123744	0.00m-0.20m TOPSOIL 0.20m-0.40m PEAT LAYER 0.40m-1.20m GREY SAND 1.20m-4.50m WHITE SAND 4.50m-6.20m BROWN SAND 6.20m-8.70m YELLOW SAND 8.70m-13.50m BROWN SILTY SAND 13.50m-17.40m WHITE SAND 17.40m-18.20m BROWN PEAT 18.20m-22.60m BROWN SILTY SAND 22.60m-23.00m GREY SANDSTONE	1538m	South West
10001805	0.00m-0.60m Stones 0.60m-3.50m Sand Hard Cemented 3.50m-7.62m Sand Yellow Water Supply	1542m	South West
10000630	0.00m-3.35m Made Ground 3.35m-4.87m Sand Peaty Moist 4.87m-7.46m Sand Peaty Wet 7.46m-10.66m Sand Grey Water Supply 10.66m-12.49m Sand Yellow Water Supply 12.49m-13.56m Sand Grey Clay Seams Water Supply	1581m	South West
10034041	0.00m-10.00m sand	1585m	South West
10024860	0.00m-5.50m Sand, unconsolidated	1605m	South West
10113069	0.00m-1.00m Soil, black, garden 1.00m-3.00m Sandy Clay, grey 3.00m-31.00m Sandstone, white yellow 31.00m-60.00m Sandstone, white	1610m	North West
10111990	0.00m-9.50m SAND	1620m	South West
10103825	0.00m-8.54m Sand, unconsolidated	1659m	South West
10128652	0.00m-2.43m Sand Peaty Water Supply 2.43m-3.00m Sand Grey Water Supply 3.00m-9.10m Sand Peat Water Supply 9.10m-14.30m Sand Water Supply 14.30m-14.60m Clay Sand Water Supply 14.30m-14.60m Peat Water Supply 14.60m-20.10m Peat Sand Water Supply 20.10m-25.90m Clay Sand 20.10m-25.90m Peat 25.90m-27.50m Sand Claybound	1664m	South West
10118701	0.00m-0.30m Made Ground 0.30m-0.60m Sand White Silty 0.60m-1.92m Peat Black Sandy 1.92m-2.68m Sand White 2.68m-6.24m Sand 6.24m-6.40m Clay Grey Sandy 6.40m-14.93m Sand White Water Supply 14.93m-16.30m Sand White Water Supply Clay Bands	1667m	South West
10013590	0.00m-0.10m Made Ground 0.10m-2.43m Sand Fossils:shell Fragments 2.43m-2.74m Peat 2.74m-3.65m Sand Fossils:shell Fragments 3.65m-4.57m Sand Silt Fossils:shell Fragments Water Supply 4.57m-8.22m Sand Grey Wet Fossils:shell Fragments Water Supply	1671m	South West
10134487	0.00m-0.50m fill, concrete 0.50m-17.00m sand 17.00m-19.80m silty sand & small clay bands	1685m	South West
10090879	0.00m-0.30m topsoil 0.30m-3.00m sand, yellow 3.00m-6.00m sand, brown silty	1695m	South West
10048780	0.00m-7.93m sand	1697m	South West
10042686	0.00m-6.00m UNCONSOLIDATED. ALL SAND	1710m	South

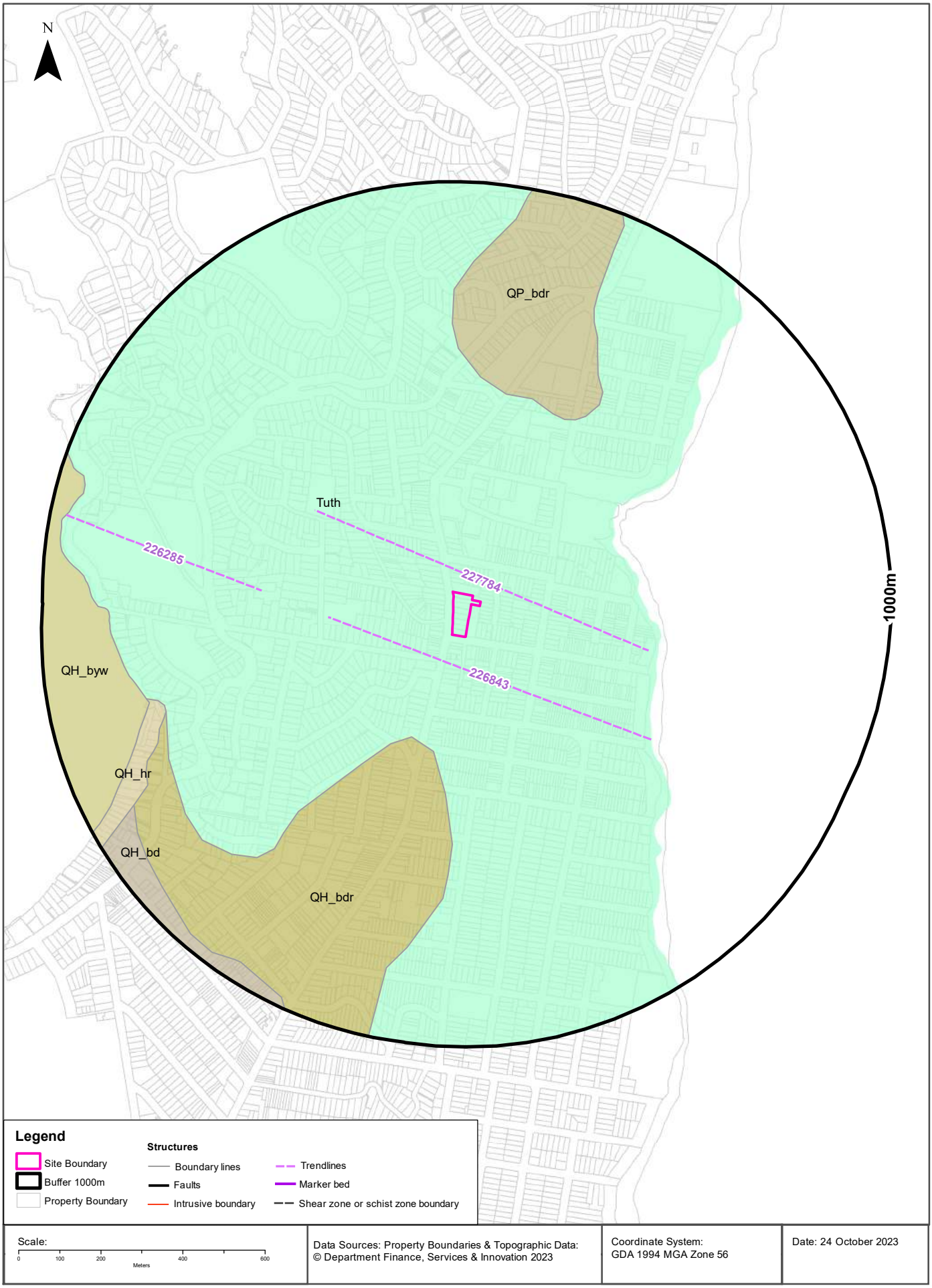
NGIS Bore ID	Drillers Log	Distance	Direction
10093889	0.00m-12.20m YELLOW SAND 12.20m-16.30m WHITE SAND 16.30m-18.50m GREY SAND 18.50m-18.70m BLACK PEAT 18.70m-21.30m BROWN SAND 21.30m-21.50m BLACK PEAT 21.50m-26.00m WHITE SAND	1718m	South West
10026748	0.00m-0.30m TOPSOIL 0.30m-4.00m SAND WHITE	1732m	South West
10129725	0.00m-8.00m SAND	1737m	South
10130846	0.00m-0.30m topsoil 0.30m-3.50m sand, brown 3.50m-5.00m sand, silty brown 5.00m-6.00m sand, grey	1776m	South
10133556	0.00m-5.54m Sand, unconsolidated	1778m	South
10122395	0.00m-0.30m topsoil 0.30m-2.50m sand, brown 2.50m-5.00m sand, yellow 5.00m-6.00m sand, grey	1779m	South
10134626	0.00m-5.00m sand	1780m	South West
10085191	0.00m-0.30m TOPSOIL 0.30m-5.00m YELLOW SAND 5.00m-7.00m BROWN SAND	1781m	South
10088244	0.00m-0.30m FILL 0.30m-3.30m SAND YELLOW 3.30m-6.00m SAND BROWN	1782m	South
10101065	0.00m-7.20m sand	1790m	South
10063305	0.00m-12.00m sand	1800m	South
10098354	0.00m-10.67m Unconsolidated - all sand.	1809m	South
10123128	0.00m-0.60m Peat 0.60m-2.43m Sand White 2.43m-6.40m Peat 2.43m-6.40m Sand White 6.40m-7.62m Sand White Water Supply 7.62m-9.14m Sand Water Supply 9.14m-10.97m Peat Sand Water Supply 10.97m-12.49m Sand White Water Supply 12.49m-17.37m Peat Sand Water Supply	1810m	South West
10123754	0.00m-8.00m SAND	1820m	South
10018847	0.00m-5.79m Sand, unconsolidated	1859m	South West
10133453	0.00m-0.30m topsoil 0.30m-1.50m sand, brown 1.50m-4.00m sand, whtie	1868m	South
10123338	0.00m-8.00m sand	1902m	South
10126661	0.00m-0.30m topsoil 0.30m-2.40m sand, yellow 2.40m-6.00m sand, brown	1917m	South West
10030708	0.00m-0.20m BROWN SANDY TOPSOIL 0.20m-1.10m YELLOW SAND WITH SHELLS 1.10m-3.00m BROWN PEAT 3.00m-5.50m LIGHT BROWN SAND 5.50m-8.50m GREY SILTY SAND 8.50m-10.50m DARK GREY SAND,PEAT 10.50m-11.50m LIGHT BROWN SILTY SAND 11.50m-13.00m WHITE SAND 13.00m-16.00m SILTY YELLOW SAND 16.00m-19.50m WHITE SILTY SAND 19.50m-20.50m WHITE SAND WITH CLAY 20.50m-21.00m WHITE SANDSTONE	1918m	South West
10125357	0.00m-6.00m sand	1925m	South
10097619	0.00m-0.30m topsoil 0.30m-2.50m sand, yellow 2.50m-4.00m sand, brown	1938m	South West

NGIS Bore ID	Drillers Log	Distance	Direction
10105216	0.00m-0.30m Sand Greyish Dry 0.30m-1.82m Sand Dark Brown Moist 1.82m-3.04m Sand Greyish Some Clean Water Supply 3.04m-4.87m Sand Peaty 4.87m-5.18m Sand Grey Slightly Peaty Water Supply 5.18m-5.79m Sand Grey Peat Bands 5.79m-6.40m Peat 6.40m-10.66m Sand Peaty Water Supply 10.66m-11.27m Sand Peat Bands 11.27m-14.02m Sand Slightly Peaty Water Supply 14.02m-16.76m Sand Peaty Water Supply 16.76m-17.06m Peat 17.06m-18.89m Sand Peaty Water Supply 18.89m-19.20m Peat 19.20m-19.50m Sand Peaty Water Supply 19.50m-19.81m Peat 19.81m-21.64m Sand Slightly Peaty Water Supply 21.64m-23.62m Sand Very Dirty Peaty Water Supply 23.62m-23.92m Clay Grey 23.92m-24.99m Sand Light Brown Slightly Clayey Quartz Gravel Some Water Supply 24.99m-25.29m Clay Grey	1944m	South West
10133549	0.00m-8.00m sand	1945m	South
10134479	0.00m-0.70m BRICKS AND FILL AND SAND 0.70m-0.80m GREY SAND 0.80m-2.90m HEAVY BLACK PEAT 2.90m-10.00m LIGHT GREY SAND 10.00m-12.00m SAND WITH SMALL PEAT BANDS 12.00m-13.50m LIGHT GREY SAND 13.50m-16.00m SAND WITH PEAT BANDS 16.00m-18.70m LIGHT GREY SAND	1999m	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

Geology

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Tuth	Hawkesbury Sandstone	Medium- to coarse-grained quartz sandstone with minor shale and laminite lenses.	/Ungrouped Triassic units//Hawkesbury Sandstone//	Anisian (base) to Anisian (top)	Sandstone	0m
QH_bdr	Coastal deposits - bedrock-mantling dune facies	Marine-deposited and aeolian-reworked fine- to coarse-grained quartz-lithic sand with abundant carbonate, sporadic humic debris in stabilised dunes.	/Coastal deposits//Coastal deposits - dune facies//	Holocene (base) to Now (top)	Sand	268m
QP_bdr	Coastal deposits - bedrock-mantling dune facies	Indurated marine-deposited and aeolian-reworked fine- to coarse-grained quartz-lithic sand with abundant carbonate, sporadic humic debris in stabilised dunes.	/Coastal deposits//Coastal deposits - dune facies/Coastal deposits-bedrock-mantling dune facies/	Pleistocene (base) to Now (top)	Sand	484m
QH_hr	Anthropogenic deposits - reclaimed estuarine areas	Natural surface elevation raised by placement of fill over former estuarine swamps and subaqueous estuarine margins (supratidal to subtidal zone); estuarine banks and islands formed from dredge spoil.	/Anthropogenic deposits//Anthropogenic deposits - reclaimed estuarine areas//	Holocene (base) to Now (top)	Anthropogenic material	721m
QH_byw	Coastal deposits - bay sand sheet (subaqueous)	Medium- to fine-grained quartzose sand; slightly shelly; well-sorted.	/Coastal deposits//Coastal deposits - bay sand sheet/Coastal deposits - bay sand sheet (subaqueous)/	Holocene (base) to Now (top)	Sand	755m
QH_bd	Coastal deposits - dune facies	Marine-deposited and aeolian-reworked coastal sand dunes.	/Coastal deposits//Coastal deposits - dune facies//	Holocene (base) to Now (top)	Sand	879m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
227784	Dyke or vein	Sydney 1:100,000 Geological Sheet	41m
226843	Dyke or vein	Sydney 1:100,000 Geological Sheet	68m
226285	Dyke or vein	Sydney 1:100,000 Geological Sheet	466m

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

Geological Data Source: Statewide Seamless Geology v2.1, Department of Regional NSW
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Naturally Occurring Asbestos Potential

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Naturally Occurring Asbestos Potential

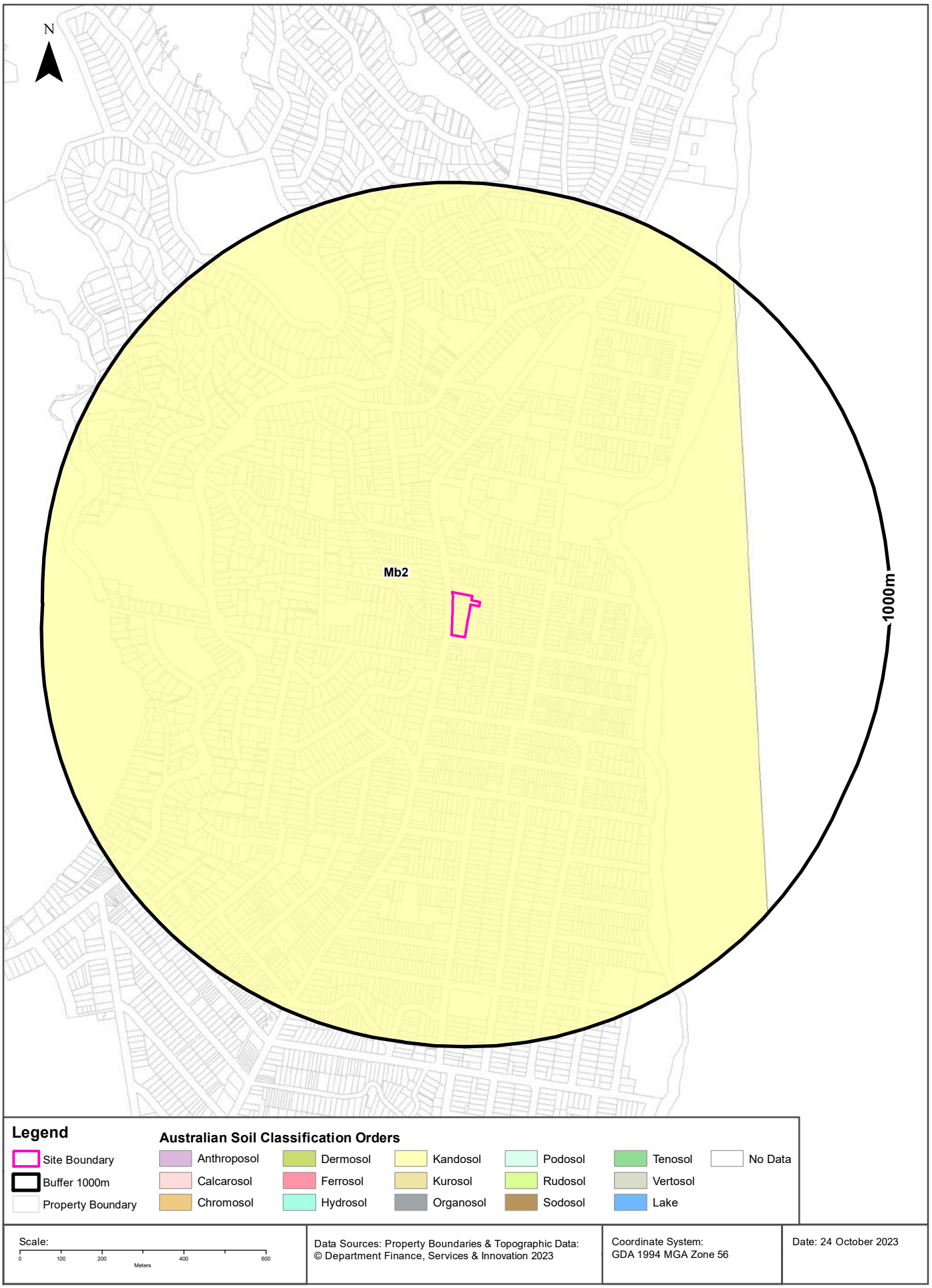
Naturally Occurring Asbestos Potential within the dataset buffer:

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

Atlas of Australian Soils

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Soils

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Atlas of Australian Soils

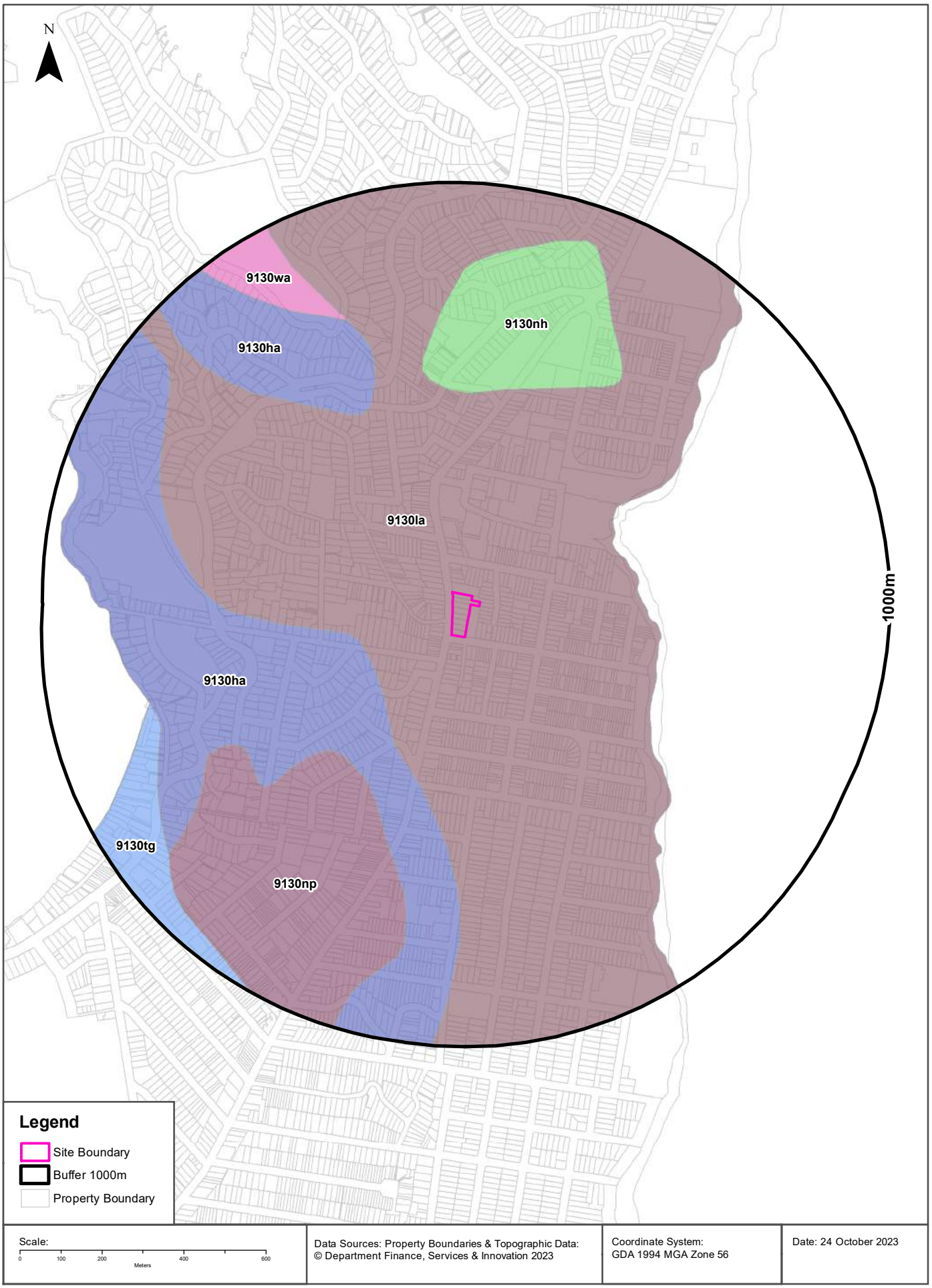
Soil mapping units and Australian Soil Classification orders within the dataset buffer:

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

Atlas of Australian Soils Data Source: CSIRO
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Soil Landscapes of Central and Eastern NSW

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Soils

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Soil Landscapes of Central and Eastern NSW

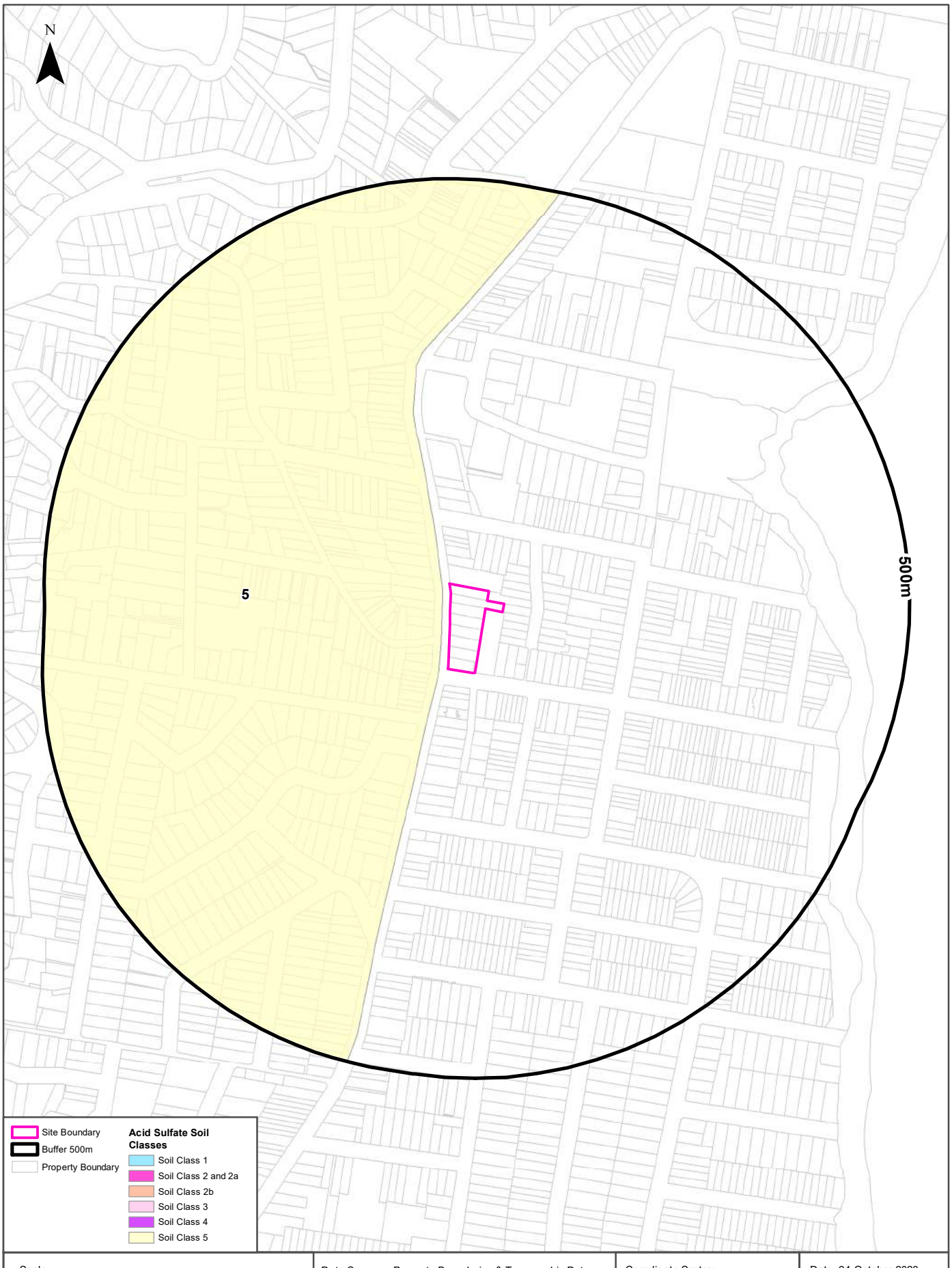
Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
9130la	Lambert	0m	On-site
9130ha	Hawkesbury	205m	West
9130np	Newport	396m	South West
9130nh	North Head	488m	North
9130wa	Warriewood	709m	North West
9130tg	Tuggerah	744m	South West

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Acid Sulfate Soils

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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		

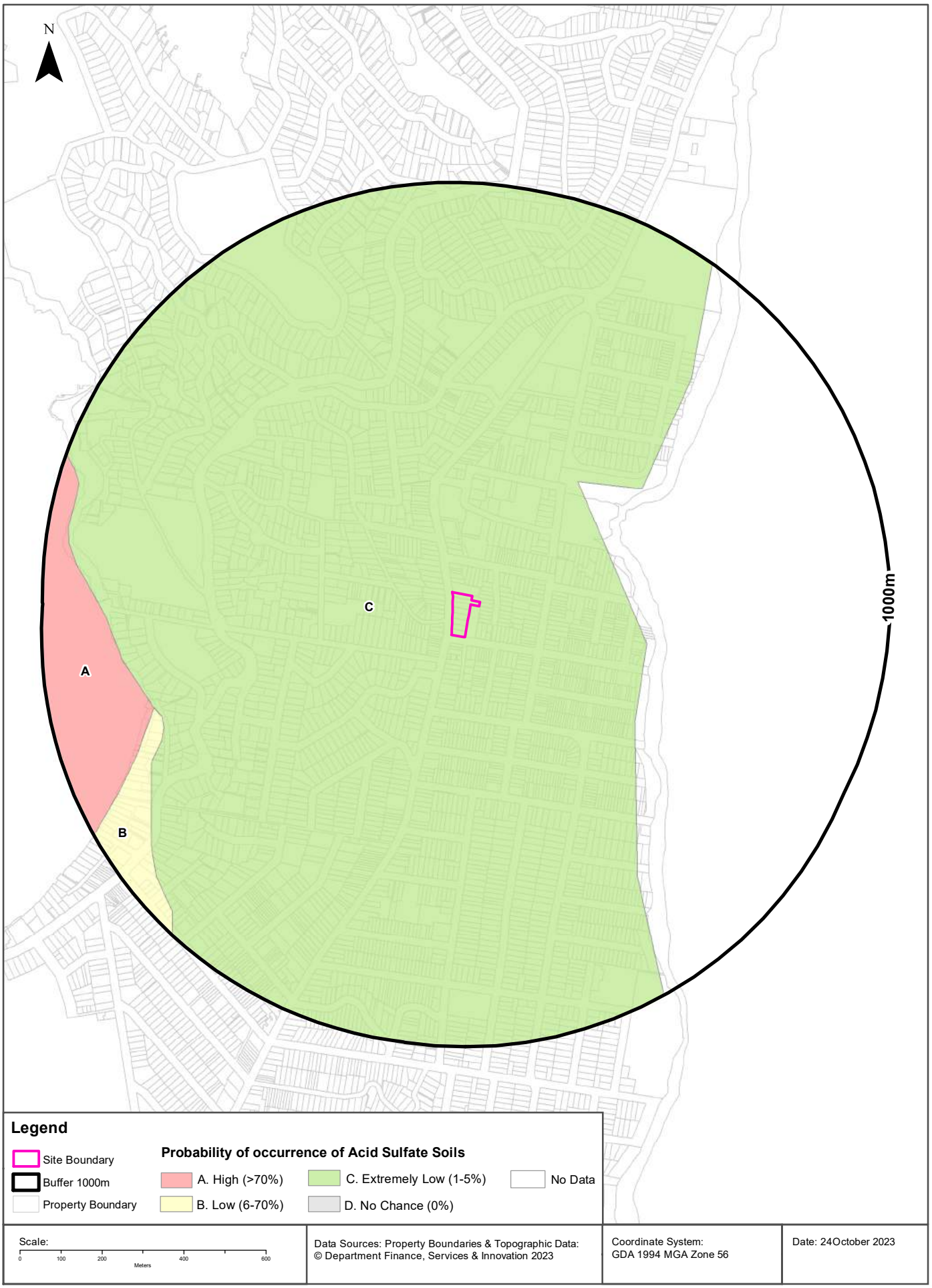
If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Atlas of Australian Acid Sulfate Soils

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Acid Sulfate Soils

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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.	734m	South West
A	High Probability of occurrence. >70% chance of occurrence.	748m	West

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Dryland Salinity

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Mining Subsidence Districts

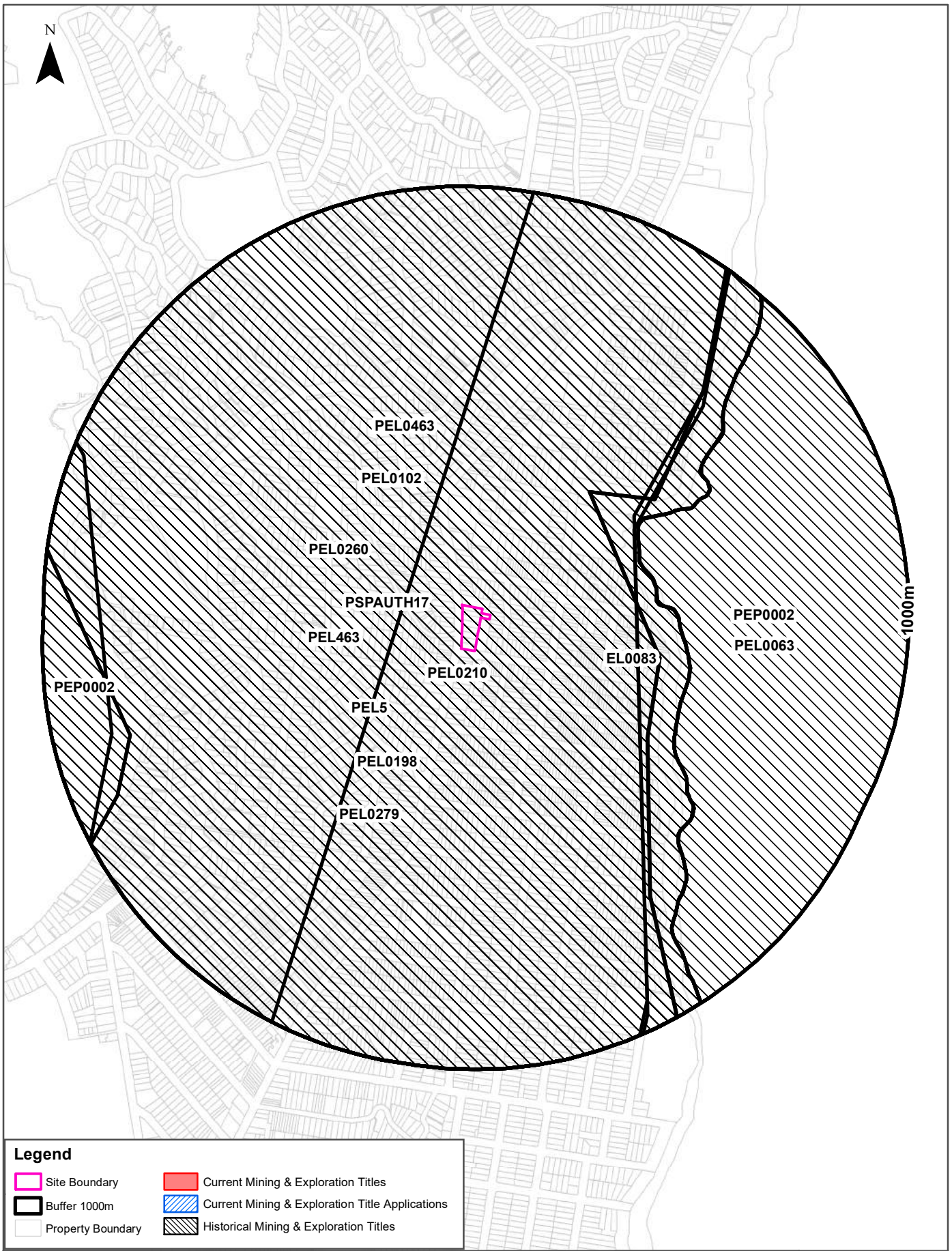
Mining Subsidence Districts within the dataset buffer:

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Mining

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0463	DART ENERGY (APOLLO) PTY LTD	20091010	20150603	PETROLEUM	Petroleum	0m	On-site
PEL0279	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	19910504	19931111	PETROLEUM	Petroleum	0m	On-site
PSPAUTH17	MACQUARIE ENERGY PTY LTD	20070803	20080703	PETROLEUM	Petroleum	0m	On-site
PEL0102	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL463	DART ENERGY (APOLLO) PTY LTD	20081022	20130227	MINERALS		0m	On-site
PEL5	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20011210	MINERALS		0m	On-site
PEL0198	JOHN STREVENS (TERRIGAL) NL			PETROLEUM	Petroleum	0m	On-site
PEL0210	THE AUSTRALIAN GAS LIGHT COMPANY (AGL), NORTH BULLI COLLIERIES PTY LTD			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
EL0083	CONTINENTAL OIL CO OF AUSTRALIA LIMITED	19670201	19680201	MINERALS		0m	On-site
PEP0002	LASKAN MINERALS LTD			PETROLEUM	Petroleum	349m	East
PEL0063	L H SMART OIL EXPLORATION CO. LTD			PETROLEUM	Petroleum	350m	East

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

State Environmental Planning Policy

669 - 683 Old South Head Road, Vaucluse, NSW 2030

State Significant Precincts

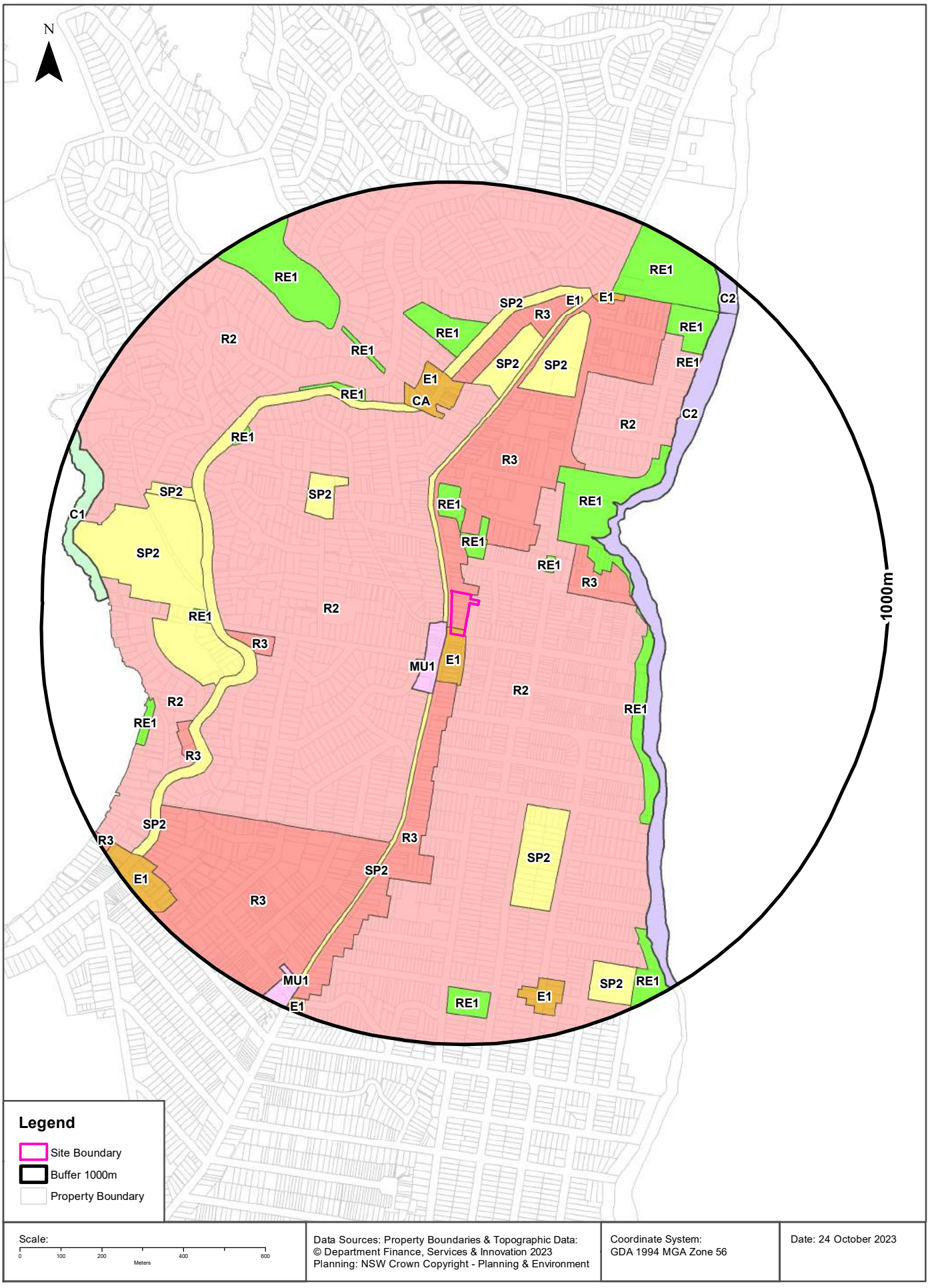
What SEPP State Significant Precincts exist within the dataset buffer?

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

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EPI Planning Zones

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Environmental Planning Instrument

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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
E1	Local Centre		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	0m	On-site
R3	Medium Density Residential		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	0m	On-site
R2	Low Density Residential		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	0m	South
SP2	Infrastructure	Classified Road	Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	10m	North
MU1	Mixed Use		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	11m	South West
R2	Low Density Residential		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	20m	West
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	89m	North
R3	Medium Density Residential		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	120m	South
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	145m	North
SP2	Infrastructure	Classified Road	Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	153m	South
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	172m	North East
R3	Medium Density Residential		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	216m	East
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	241m	North East
C2	Environmental Conservation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	315m	East
SP2	Infrastructure	Water Supply System	Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	340m	North West
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	383m	South East
R2	Low Density Residential		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	409m	North East
E1	Local Centre		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	420m	North
CA	Complex Area		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	420m	North
R3	Medium Density Residential		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	430m	West

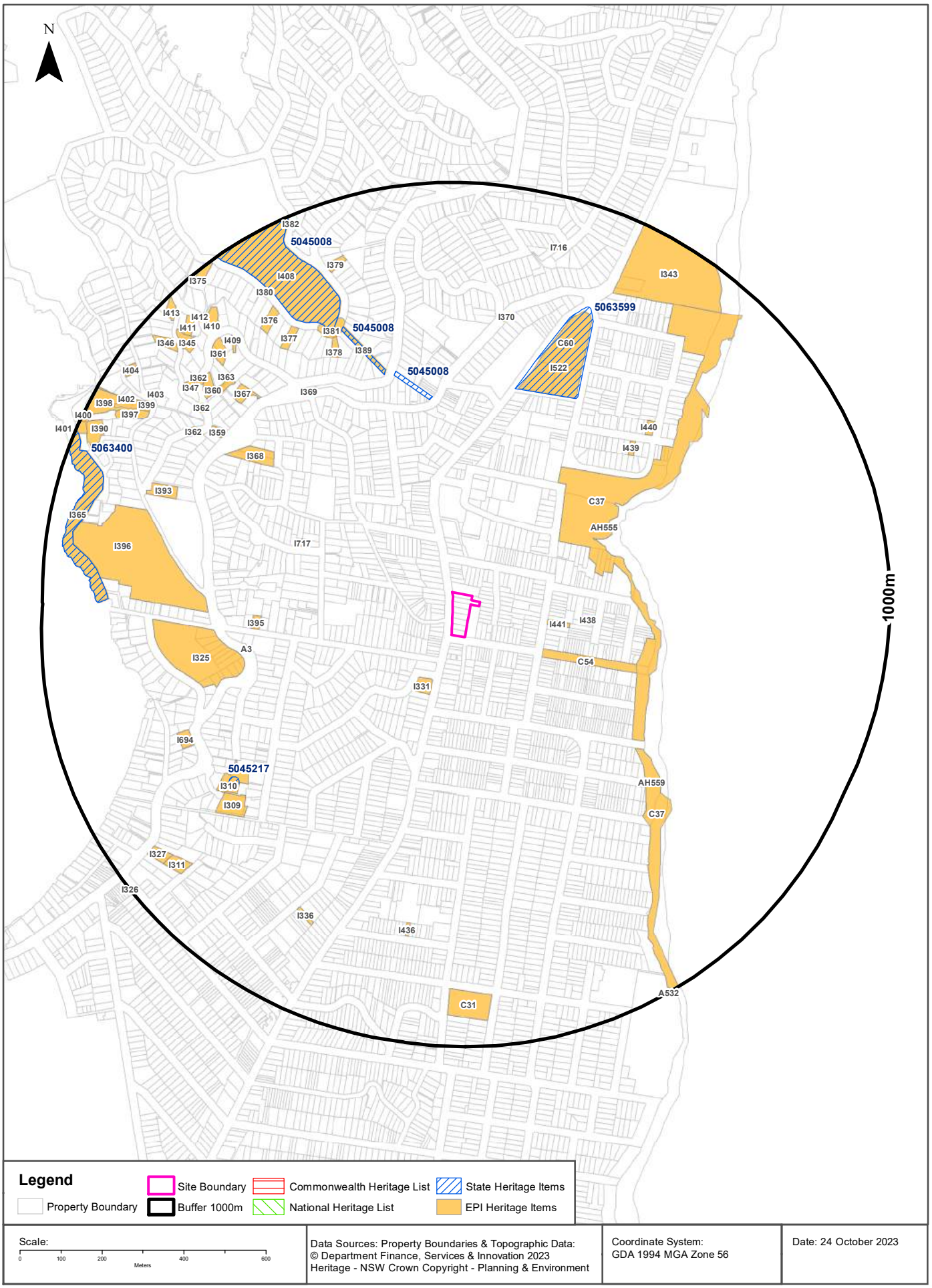
Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
SP2	Infrastructure	Water Supply System	Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	439m	South
SP2	Infrastructure	Classified Road	Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	448m	West
R2	Low Density Residential		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	473m	North West
SP2	Infrastructure	Seniors Housing	Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	482m	North
RE1	Public Recreation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	510m	North West
R3	Medium Density Residential		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	510m	North
SP2	Infrastructure	Educational Establishment	Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	510m	West
SP2	Infrastructure	Cemetery	Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	519m	North
R3	Medium Density Residential		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	532m	South West
RE1	Public Recreation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	557m	North
RE1	Public Recreation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	571m	North
RE1	Public Recreation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	588m	West
R2	Low Density Residential		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	588m	West
RE1	Public Recreation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	620m	North West
SP2	Infrastructure	Place of Public Worship	Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	664m	North West
R3	Medium Density Residential		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	665m	South West
RE1	Public Recreation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	705m	North West
RE1	Public Recreation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	744m	West
CA	Complex Area		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	748m	North
E1	Local Centre		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	748m	North
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	758m	North East
E1	Local Centre		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	782m	North East
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	785m	North East
RE1	Public Recreation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	813m	North East

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	825m	South East
C1	National Parks and Nature Reserves		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	839m	West
SP2	Infrastructure	Educational Establishment & Place of Worship	Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	856m	South
E1	Local Centre		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	856m	South
RE1	Public Recreation		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	858m	South
MU1	Mixed Use		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	904m	South West
E1	Local Centre		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	916m	South West
C2	Environmental Conservation		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	919m	North East
E1	Local Centre		Waverley Local Environmental Plan 2012	28/04/2023	28/04/2023	28/07/2023	Map Amendment No 1	963m	South West
R3	Medium Density Residential		Woollahra Local Environmental Plan 2014	14/04/2023	26/04/2023	26/04/2023	Map Amendment No 2	969m	South West

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Heritage Items

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Heritage

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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
5045008	Vaucluse House	69A Wentworth Road, Vaucluse	WOOLLAHRA	02/04/1999	00955	3197	473m	North
5063599	South Head General Cemetery	793 Old South Head Road, Vaucluse	WAVERLEY	25/08/2017	01991	3052	517m	North
5045008	Vaucluse House	69A Wentworth Road, Vaucluse	WOOLLAHRA	02/04/1999	00955	3197	557m	North
5045217	Site of Ficus superba var henneana tree	3-4 Fernleigh Gardens Rose Bay	WOOLLAHRA	02/04/1999	00578	1580	627m	South West
5045008	Vaucluse House	69A Wentworth Road, Vaucluse	WOOLLAHRA	02/04/1999	00955	3197	705m	North West
5063400	Nielsen Park and the Hermitage Foreshore Reserve	Greycliffe Avenue, Vaulcuse	WOOLLAHRA	28/08/2017	01988	2955	839m	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
I331	Former Kings Theatre building and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	119m	South West
I441	1930's style bungalow	Item - General	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	170m	East
C54	Oceanview Avenue	Conservation Area - Landscape	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	186m	East
C37	Coastal Sandstone Escarpment	Conservation Area - Landscape	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	241m	North East
I438	1950's house	Item - General	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	250m	East
AH555	Rock Engraving	Aboriginal Object	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	350m	North East
I717	Electrical Substation No. 314 including front fence	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	379m	North West
I395	4 Norfolk Island Pines	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	467m	West
A3	Emma's Well	Item - Archaeological	Local	Woollahra Local Environmental Plan 2014	23/01/2015	23/05/2015	28/07/2023	490m	West
C37	Coastal Sandstone Escarpment	Conservation Area - Landscape	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	494m	South East
I439	Georgian style stone house	Item - General	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	508m	North East
I325	Kambala School - Tivoli and interoirs, gateposts, gates and flanking walls with railing, Pines	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	510m	West
I522	South Head Cemetery	Item - General	State	Waverley Local Environmental Plan 2012	23/10/2020	23/10/2020	23/10/2020	519m	North
C60	South Head Cemetery	Conservation Area - Landscape	State	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	519m	North
I368	Werribree - house and interiors, gardens, retaining walls, fences, covered gateways, trees	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	534m	North West
I389	Sydney Pink Gum, Swamp Mahogany, Forest Red Mahogany	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	557m	North
I440	1950's house in red texture brick	Item - General	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	572m	North East
AH559	Shelter with Potential Archaeological Deposit	Aboriginal Object	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	573m	South East
I369	Bus Stop shelter, former tram stop	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	592m	North West
I396	Kincoppal, Roman Catholic Convent of the Sacred Heart and school	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	596m	West
I310	Cedar fig	Item - General	State	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	597m	South West
I378	Sydney Pink Gum	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	635m	North West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I309	Fernleigh Castle - main building and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	637m	South West
I367	Kainga - house and interiors, excluding the freestanding garage, cabana, pool, spa, gateposts	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	666m	North West
I370	Bus stop shelter, former tram stop	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	671m	North
I359	House and Interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	676m	North West
I694	Hillcrestresidential flat building, interiors and gardens	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	681m	South West
I381	Swamp Mahogany, 2 Sydney Pink Gums	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	685m	North West
I408	Vaucluse (Wentworth) Housebuildings and interiors, stables and interiors, outbuildings, gates	Item - General	State	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	705m	North West
I436	Late Victorian style terrace	Item - General	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	710m	South
I393	St. Michael's Anglican Church - church, interiors, grounds sandstone works, gatepost, arch, obelisk	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	712m	West
I377	Sydney Pink Gum, Swamp Mahogany	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	716m	North West
I362	Scribbly Gum, Sydney Pink Gum, Swamp Mahogany	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	733m	North West
I363	House and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	738m	North West
I362	Scribbly Gum, Sydney Pink Gum, Swamp Mahogany	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	749m	North West
I360	House and interiors, gardens	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	759m	North West
I336	House, interiors and grounds	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	759m	South West
I376	2 Forest Red, Sydney Pink and Scribbly Gum	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	775m	North West
I361	House and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	787m	North West
I409	Eastern Channel Lighthouse - Rear Lead	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	788m	North West
I362	Scribbly Gum, Sydney Pink Gum, Swamp Mahogany	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	795m	North West
I347	Port Jackson Fig	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	805m	North West
I343	Bicentennial Coastal Cliff Walk	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	813m	North East

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I379	2 Sydney Pink Gums	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	834m	North
I365	Hermit Bay slipway and landing	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	839m	West
I311	House and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	844m	South West
I380	Forest Red Gum	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	857m	North West
C31	Caffyn Park	Conservation Area - Landscape	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	858m	South
I397	Former gatehouse to The Hermitage and interiors, front fencing, 3 sandstone gateposts	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	859m	North West
I410	Glasson House - house and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	860m	North West
I398	The Hermitage - house and interiors, grounds, gateposts, gates, fencing, stone works	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	862m	North West
I399	Norfolk Island Pine, Hoop Pine, Bunya Pine, fencing to Vaucluse Rd	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	865m	North West
I327	Mary Magdalene Catholic Church - church and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	866m	South West
I403	Stone and wrought iron fence, formerly part of The Hermitage	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	867m	North West
I345	House and interiors, stone works, gardens	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	867m	North West
I716	Electrical Substation No. 193	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	869m	North
I402	Watercourse - stormwater drainage comprising channels, bridge and stone walling	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	881m	North West
I346	Sydney Pink Gum	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	890m	North West
I411	House and interiors, front fencing	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	894m	North West
I412	Sydney Pink Gum	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	899m	North West
I390	House and interiors, front fencing	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	932m	North West
I404	House and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	938m	North West
I413	Greenway - all buildings, interiors and works, grounds, grove of Sydney Pink Gums	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	950m	North West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I401	2 Cook Pines, Norfolk Island Pine	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	971m	North West
I375	Sydney Pink Gum	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	972m	North West
I382	Scribbly Gum	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	973m	North West
I400	Gardens formerly part of The Hermitage	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	987m	North West
I326	Rose Bay Hotel and interiors	Item - General	Local	Woollahra Local Environmental Plan 2014	28/07/2023	28/07/2023	28/07/2023	999m	South West
A532	CSIRO Astronomical Instrument Base	Item - Archaeological	Local	Waverley Local Environmental Plan 2012	26/10/2012	26/10/2012	23/10/2020	1000m	South East

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
No records in buffer		

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

Ecological Constraints - Vegetation & Ramsar Wetlands

669 - 683 Old South Head Road, Vaucluse, NSW 2030



Site Boundary
ReportBuffer
Property Boundary
Ramsar Wetland

Native Vegetation

Alpine Complex
Arid Shrublands (Acacia sub-formation)
Arid Shrublands (Chenopod sub-formation)
Dry Sclerophyll Forests (Shrub/grass sub-formation)
Dry Sclerophyll Forests (Shrubby sub-formation)
Forested Wetlands
Freshwater Wetlands
Grasslands
Grassy Woodlands
Heathlands
Rainforests
Saline Wetlands
Semi-arid Woodlands (Grassy sub-formation)
Semi-arid Woodlands (Shrubby sub-formation)
Wet Sclerophyll Forests (Grassy sub-formation)
Wet Sclerophyll Forests (Shrubby sub-formation)
Non vegetated
Unattributed
Not classified
Other

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 24 October 2023

Ecological Constraints

669 - 683 Old South Head Road, Vaucluse, NSW 2030

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
3396556	Not classified	(Not classified) Not classified	Not classified	0m	On-site
3375944	Heathlands	(Heathlands) Sydney Coastal Sandstone Headland Heath	Sydney Coastal Heaths	345m	North East
3341675	Dry Sclerophyll Forests (Shrubby sub-formation)	(Dry Sclerophyll Forests (Shrubby sub-formation)) Sydney Coastal Sandstone Foreshores Forest	Sydney Coastal Dry Sclerophyll Forests	706m	North West

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

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

669 - 683 Old South Head Road, Vaucluse, NSW 2030

NSW BioNet Atlas

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Pseudophryne australis	Red-crowned Toadlet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Anous stolidus	Common Noddy	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Category 2	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna carneipes	Flesh-footed Shearwater	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Ardenna grisea	Sooty Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris melanotos	Pectoral Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calonectris leucomelas	Streaked Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Cuculus optatus	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Diomedea exulans	Wandering Albatross	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Endangered Population, Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Erythrotriorchis radiatus	Red Goshawk	Critically Endangered	Category 2	Vulnerable	
Animalia	Aves	Esacus magnirostris	Beach Stone-curlew	Critically Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Eudyptula minor	Little Penguin	Endangered Population	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Fregata ariel	Lesser Frigatebird	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gygis alba	White Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Macronectes giganteus	Southern Giant Petrel	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Macronectes halli	Northern Giant-Petrel	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Menura alberti	Albert's Lyrebird	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Motacilla flava	Yellow Wagtail	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Onychoprion fuscata	Sooty Tern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Phaethon lepturus	White-tailed Tropicbird	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Phaethon rubricauda	Red-tailed Tropicbird	Vulnerable	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Phoebetria fusca	Sooty Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Pterodroma leucoptera leucoptera	Gould's Petrel	Vulnerable	Not Sensitive	Endangered	
Animalia	Aves	Pterodroma solandri	Providence Petrel	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stercorarius longicaudus	Long-tailed Jaeger	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Stercorarius maccormicki	South Polar Skua	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Stercorarius parasiticus	Arctic Jaeger	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stercorarius pomarinus	Pomarine Jaeger	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Sula dactylatra	Masked Booby	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Thalassarche bulleri	Buller's Albatross	Not Listed	Not Sensitive	Vulnerable	
Animalia	Aves	Thalassarche cauta	Shy Albatross	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Thalassarche chrysostoma	Grey-headed Albatross	Not Listed	Not Sensitive	Endangered	
Animalia	Aves	Thalassarche melanophris	Black-browed Albatross	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Thinornis cucullatus cucullatus	Eastern Hooded Dotterel	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Tringa incana	Wandering Tattler	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Gastropoda	Meridolum maryae	Maroubra Woodland Snail	Endangered	Not Sensitive	Not Listed	
Animalia	Insecta	Petalura gigantea	Giant Dragonfly	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Aepyprymnus rufescens	Rufous Bettong	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus forsteri	New Zealand Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Arctocephalus pusillus doriferus	Australian Fur-seal	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Balaenoptera musculus	Blue Whale	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Cercartetus nanus	Eastern Pygmy-possum	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Dugong dugon	Dugong	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Eubalaena australis	Southern Right Whale	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Perameles nasuta	Long-nosed Bandicoot	Endangered Population	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Physeter macrocephalus	Sperm Whale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aspidites ramsayi	Woma	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Dermochelys coriacea	Leatherback Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Eretmochelys imbricata	Hawksbill Turtle	Not Listed	Not Sensitive	Vulnerable	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Varanus rosenbergi	Rosenberg's Goanna	Vulnerable	Not Sensitive	Not Listed	
Fungi	Flora	Hygrocybe reesiae		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia gordonii		Endangered	Not Sensitive	Endangered	
Plantae	Flora	Acacia terminalis subsp. Eastern Sydney	Sunshine wattle	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Allocasuarina portuensis	Nielsen Park She-oak	Endangered	Category 3	Endangered	
Plantae	Flora	Amperea xiphoclada var. pedicellata		Extinct	Not Sensitive	Extinct	
Plantae	Flora	Asterolasia buxifolia		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Baeckea kandos		Endangered	Category 3	Endangered	
Plantae	Flora	Caladenia tessellata	Thick Lip Spider Orchid	Endangered	Category 2	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Chamaesyce psammogeton	Sand Spurge	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Doryanthes palmeri	Giant Spear Lily	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Epacris purpurascens var. purpurascens		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus camfieldii	Camfield's Stringybark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus fracta	Broken Back Ironbark	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus pulverulenta	Silver-leafed Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus scoparia	Wallangarra White Gum	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Euphrasia collina subsp. muelleri	Mueller's Eyebright	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Grammitis stenophylla	Narrow-leaf Finger Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Grevillea caleyi	Caley's Grevillea	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Hibbertia puberula		Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Lasiopetalum joyceae		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia integrifolia	Macadamia Nut	Not Listed	Not Sensitive	Vulnerable	
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca biconvexa	Biconvex Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Melaleuca deanei	Deane's Paperbark	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Microtis angusii	Angus's Onion Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Persoonia hirsuta	Hairy Geebung	Endangered	Category 3	Endangered	
Plantae	Flora	Persoonia laxa		Extinct	Not Sensitive	Extinct	
Plantae	Flora	Pimelea curviflora var. curviflora		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Prasophyllum fuscum	Slaty Leek Orchid	Critically Endangered	Category 2	Vulnerable	
Plantae	Flora	Prostanthera marifolia	Seaforth Mintbush	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Sarcochilus hartmannii	Hartman's Sarcochilus	Vulnerable	Category 2	Vulnerable	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca glandulosa		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Thesium australe	Austral Toadflax	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Triplarina imbricata	Creek Triplarina	Endangered	Not Sensitive	Endangered	

Data does not include NSW category 1 sensitive species.
NSW BioNet: © State of NSW and Office of Environment and Heritage

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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   (i) the Report should not be used or taken to indicate or exclude actual fitness or unfitness of Land or Property for any particular purpose
   (j) the Report should not be relied upon for determining saleability or value or making any other decisions in relation to the Property and in particular should not be taken to be a rating or assessment of the desirability or market value of the property or its features; and
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    (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of business opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,

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12. These Terms are subject to New South Wales law.

APPENDIX D

HISTORICAL TITLE SEARCH RESULTS

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Report

Address: - 671 to 683 Old South Head Road, Vaucluse

Description: - Lot B D.P. 324744, Lot 2 D.P. 10314, Lot 1 D.P. 169310, Lot 4 D.P. 192614
Also
Lot 1 D.P. 168877, Lot 1 D.P. 167942, Lot 1 D.P. 666626 & Lot 2 D.P. 326716

As regards Lot B D.P. 324744 & Lot 2 D.P. 10314 – 671 Old South Head Road.

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
27.11.1929 (1929 to 1943)	Charles Norman Paul (Medical Practitioner)	Vol 4353 Fol 41
25.09.1943 (1943 to 1962)	Albert Ernest Burton (Member of the Australian Military Forces) Nina Tilly Burton (Married Woman)	Vol 4353 Fol 41
02.03.1962 (1962 to 1962)	Nina Tilly Burton (Widow)	Vol 4353 Fol 41
26.10.1962 (1962 to 1993)	Bartolo Santa Maria (Shop Assistant) Nancy Santa Maria (Married Woman)	Vol 4353 Fol 41 Now Auto Consol 4353-41
29.10.1993 (1993 to 2000)	Nancy Santa Maria (Widow)	Auto Consol 4353-41
28.08.2000 (2000 to 2000)	Diana Margaret Rose Santamaria Elena Lisa Santamaria Paul Joseph Santamaria (Re the Estate of Nancy Santa Maria)	Auto Consol 4353-41
28.08.2000 (2000 to 2020)	Diana Margaret Rose Santamaria Elena Lisa Santamaria	Auto Consol 4353-41
06.07.2020 (2020 to 2020)	Diana Margaret Rose Santamaria	Auto Consol 4353-41
23.11.2020 (2020 to date)	# 671 OSHR At Vaucluse Pty Ltd	Auto Consol 4353-41

# Denotes current registered proprietor

Leases and Easements: - NIL

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

As regards Lot 1 D.P. 169310 – 673 Old South Head Road.

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
17.01.1921 (1921 to 1926)	William John Fleming (Engineer)	Vol 3149 Fol 17
30.07.1926 (1926 to 1946)	Henry Millington Cooke (Gentleman)	Vol 3149 Fol 17
23.09.1946 (1946 to 1947)	James Howard Catts (Managing Director)	Vol 3149 Fol 17
23.04.1947 (1947 to 1956)	Walter Gavin Mansfield Chapman (Audit Clerk)	Vol 3149 Fol 17
08.03.1956 (1956 to 1957)	The N.S.W. Asphalt Company Pty Limited	Vol 3149 Fol 17
11.06.1957 (1957 to 1964)	Vera Kathleen Hansen (Widow)	Vol 3149 Fol 17
12.06.1964 (1964 to 1985)	Charles Keith Sibley Johnston (Company Director)	Vol 3149 Fol 17 Now Vol 13638 Fol 77
11.06.1985 (1985 to 1994)	John Arane Yvonne Arane	Vol 13638 Fol 77 Now 1/169310
01.08.1994 (1994 to 2008)	Yvonne Arane	1/169310
22.04.2008 (2008 to 2021)	Rodney Basil Lepar Wendy Patricia Lepar	1/169310
14.01.2021 (2021 to date)	# 673 OSHR At Vaucluse Pty Ltd	1/169310

# Denotes current registered proprietor

Leases and Easements: - NIL

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

As regards Lot 4 D.P. 192614 – 675 Old South Head Road.

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
20.07.1920 (1920 to 1922)	Joseph Thomas Barracluff (Farmer)	Vol 3089 Fol 201
24.01.1922 (1922 to 1923)	Dorothy Munro (Spinster)	Vol 3089 Fol 201
29.11.1923 (1923 to 1929)	John Henry Pollard (Electrician) Isabella Mary Pollard (Married Woman)	Vol 3089 Fol 201
13.02.1929 (1929 to 1929)	Isabella Mary Pollard (Widow)	Vol 3089 Fol 201
01.03.1929 (1929 to 1992)	Thomas Edmund Byrne (Salesman)	Vol 3089 Fol 201 Now 4/192614
23.10.1992 (1992 to 1993)	Elizabeth Anne Byrne Patricia Willard (Re the Estate of Thomas Edmund Byrne)	4/192614
21.12.1993 (1993 to 2019)	Neta Elizabeth Lavie Now Neta Elizabeth Labi	4/192614
21.11.2019 (2019 to date)	# 675 OSHR At Vaucluse Pty Ltd	4/192614

# Denotes current registered proprietor

Leases and Easements: - NIL

As regards Lot 1 D.P. 168877 – 677 Old South Head Road.

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
18.01.1921 (1921 to 1970)	Harry Melrose McLaren (Civil Servant)	Vol 3149 Fol 97
13.11.1970 (1970 to 1984)	Richard Frank McLaren (Radio Broadcaster) (Section 93 Application not investigated)	Vol 3149 Fol 97
30.05.1984 (1984 to 1994)	Bambusia Holdings Pty Limited	Vol 3149 Fol 97 Now 1/168877
21.01.1994 (1994 to 1994)	Raymond Leung 9Interior Designer) Susan Leung (Married Woman)	1/168877
23.08.1994 (1994 to date)	# Laurence Stuart Adelman # Suanne Mary Adelman	1/168877

# Denotes current registered proprietors

Leases and Easements: - NIL

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

As regards Lot 1 D.P. 167942 – 679 Old South Head Road.

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
20.08.1920 (1920 to 1938)	Cecil Newton Mell (School Master)	Vol 3089 Fol 196
04.07.1938 (1938 to 1957)	Estelle Smith (Married Woman)	Vol 3089 Fol 196
22.11.1957 (1957 to 1998)	William Benjamin Hanslow (Technician) Dierdrie Lillian Hanslow (Married Woman)	Vol 3089 Fol 196 Now 1/167942
11.06.1998 (1998 to 2004)	William Benjamin Hanslow	1/167942
30.09.2004 (2004 to 2015)	Nicholas Myles Hanslow	1/167942
19.02.2015 (2015 to 2019)	Mary Bartolo	1/167942
23.10.2019 (2019 to date)	# 679 OSHR At Vaucluse Pty Ltd	1/167942

# Denotes current registered proprietor

Leases and Easements: - NIL

As regards Lot 1 D.P. 666626 – 681 Old South Head Road.

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
03.01.1929 (1929 to 1940)	Hedley Vicars Clark (Storekeeper)	Vol 4233 Fol 15
10.07.1940 (1940 to 1950)	Charles Frederick Viner-Hall (Company Director)	Vol 4233 Fol 15
27.10.1950 (1950 to 1962)	Harold Victor Maddock (Milk Carter) Mary Ellen Maddock (Married Woman)	Vol 4233 Fol 15
19.04.1962 (1962 to 2020)	Giovanni Alfredo Rando (Shopkeeper) Antonietta Rando (Married Woman)	Vol 4233 Fol 15 Now 1/666626
21.05.2020 (2020 to 2020)	Antonietta Rando (Widow)	1/666626
01.06.2020 (2020 to 2020)	Steve Trassari John Vincent Russell Zagame Angela Di Salvo (Re the Estate of Antonietta Rando)	1/666626
09.10.2020 (2020 to date)	# 681 OSHR At Vaucluse Pty Ltd	1/666626

# Denotes current registered proprietor

Leases and Easements: - NIL

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

As regards Lot 2 D.P. 316716 – 683 Old South Head Road.

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
30.03.1927 (1927 to 1952)	Catherine Agnes Oliver (Married Woman)	Vol 3986 Fol 234
01.10.1952 (1952 to	Ruth Mary Rheinberger (Married Woman) Francis Rheinberger (Printer) Honora Patricia Oliver (Spinster)	Vol 3986 Fol 234 Now Vol 6569 Fol's 52 to 54
05.04.1979 (1979 to 1992)	Ruth Mary Rheinberger (Married Woman) Francis Rheinberger (Printer)	Vol 6569 Fol's 52 to 54 Then Vol 13866 Fol 161 Now 2/316716
28.02.1992 (1992 to 2004)	Ruth Mary Rheinberger (Married Woman)	2/316716
30.01.2004 (2004 to 2007)	Larissa Levitt	2/316716
14.05.2007 (2007 to 2012)	James Robert Hudsmith Maria Del Mar Nunez Beltran	2/316716
12.03.2012 (2012 to date)	# Maria Del Mar Nunez Beltran	2/316716

# Denotes current registered proprietor

Leases and Easements: - NIL

Yours Sincerely,
Mark Groll
23 December 2021

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Summary of Owners Report

Address: 669-683 Old South Head Road, Vaucluse

Description: Lot A D.P. 324744

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
07.02.1921 (1921 to 1921)	Joseph Tomos Barracluff (Farmer)	Volume 3154 Folio 55
23.08.1921 (1921 to 1926)	Wilfred Robert William Bailey (Farmer)	Volume 3154 Folio 55
15.08.1926 (1926 to 1928)	Harold Charles Nadin (Agent)	Volume 3154 Folio 55
17.10.1928 (1928 to 1929)	Louie Millicent Paul (Married Woman)	Volume 3154 Folio 55
04.10.1929 (1929 to 1935)	Herbet Naylor (Builder) William Calvin Robertshaw (Builder)	Volume 3154 Folio 55 Now Volume 4353 Folio 22
27.06.1935 (1935 to 1945)	William Edmond Brown Wood (Engineer)	Volume 4353 Folio 22
20.09.1945 (1945 to 1949)	Ernest Sydney Kemmis (Retired Dentist)	Volume 4353 Folio 22
05.05.1949 (1949 to 1950)	Gerald Wilfred Kemmis (Clerk) Dudley Westgarth (Solicitor) (Transmission Application – not investigated)	Volume 4353 Folio 22
03.03.1950 (1950 to 1963)	Cecil Hollings (Builder)	Volume 4353 Folio 22
25.02.1963 (1963 to 1963)	Dororthy Cashen (Married Woman) Phyllis Patterson (Married Woman)	Volume 4353 Folio 22
22.05.1963 (1963 to 1996)	John Constantinou Scortis (Café Proprietor)	Volume 4353 Folio 22 Then Volume 12336 Folio 149 Now A/32744
17.12.1996 (1996 to 2022)	Stan Kastrissios Helen Kastrissios Emmaneul Kastrissios Cinzia Kastrissios	A/32744
14.10.2022 (2022 to date)	# 669 OSHR at Vaucluse Pty Limited	A/32744

 # Denotes current registered proprietor

Easements: - NIL

Leases, excluding premises:

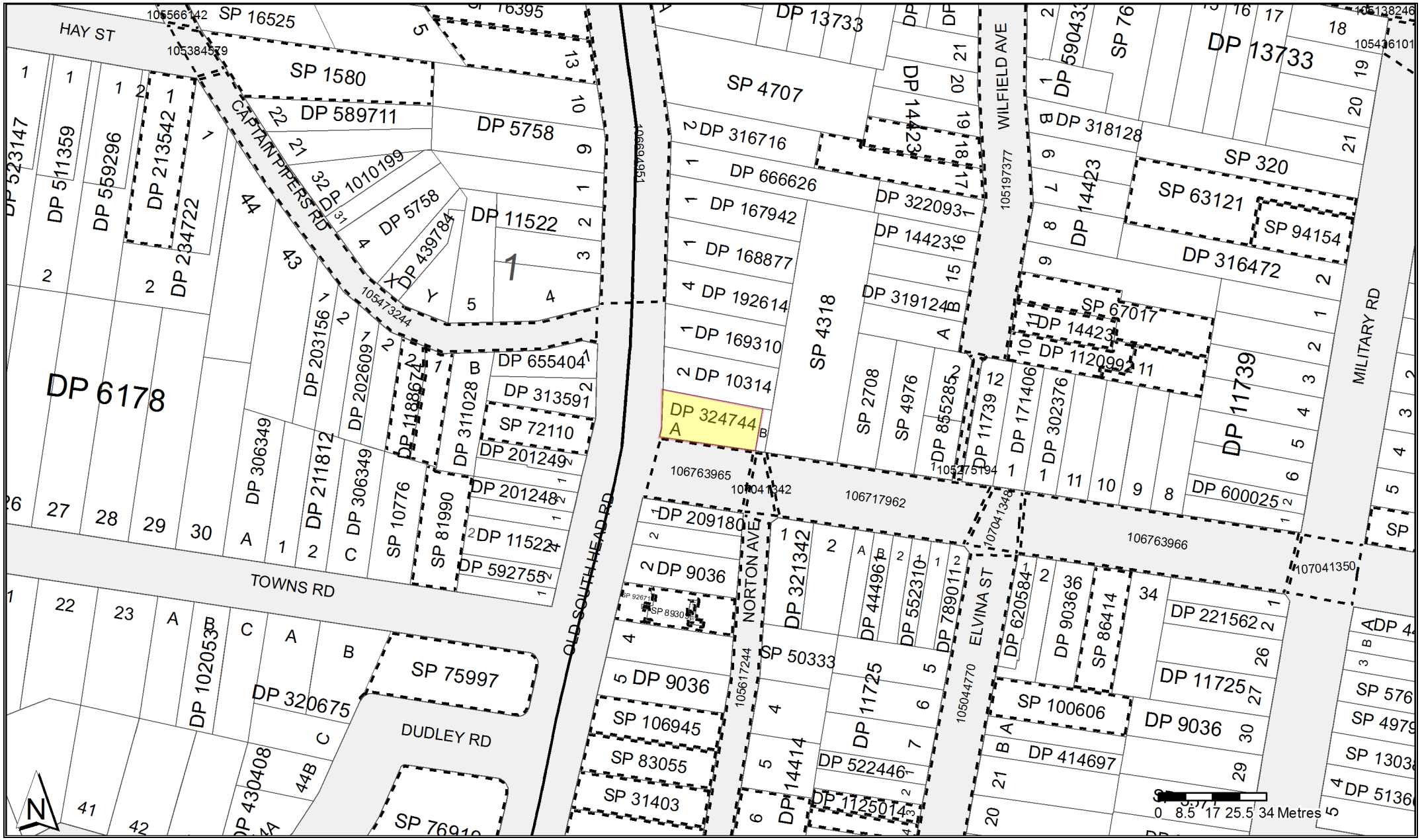
- Various leases and sub-leases were found from 04.10.1989 that have since expired either due to surrender or effluxion of time.

Yours Sincerely
Molly Elson
(Checked by Mark Groll)
25 October 2023

Cadastral Records Enquiry Report : Lot A DP 324744

Ref : 669-683 Old South

Locality : VAUCLUSE
Parish : ALEXANDRIA
LGA : WAVERLEY
County : CUMBERLAND



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

InfoTrack

B892977

Plan Form No. 7 (for compilations)

B892977

F.P.324744

6

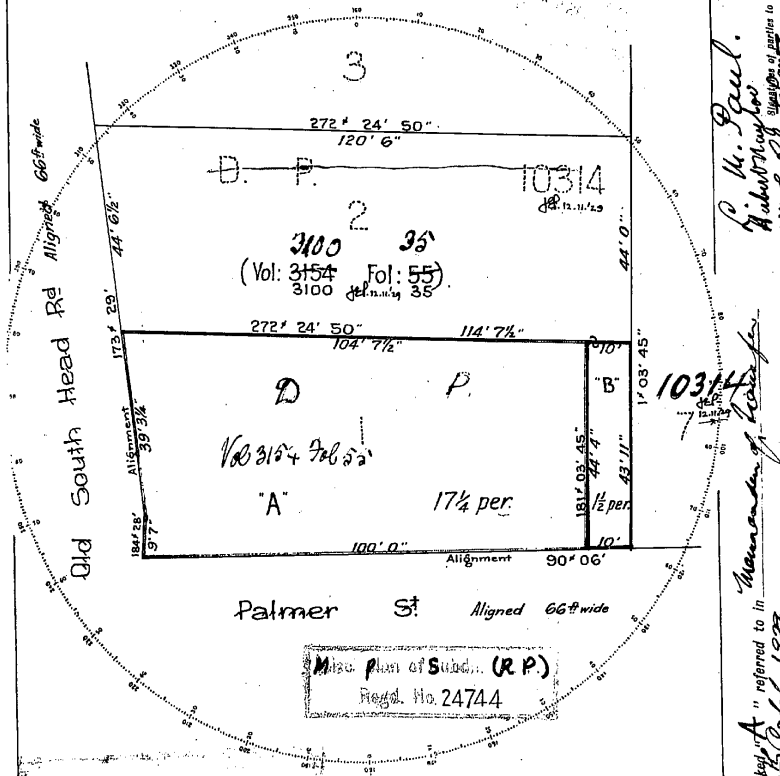
Municipality of WAVERLEY

PLAN

of subdivision of land in ~~Certificate of Title Vol: 3100 Fol: 55~~ 3154 55 def. 12.11.29

Parish of Alexandria. County of Cumberland.

Scale:- 20 feet to an Inch.



Note:- Lot "B" of the above Subdivision is to be consolidated with the land in C.T. Vol: ~~3154~~ Fol: ~~55~~ 3100 def. 35 12.11.29.

Subdivision has
by The Council of The
lity of Waverley, and
ered by Town Clerk's
ate No. 292-23-1
September 1929, and
to the proposed
incorporated and in conjunction/
t 2.
~~E. Bond~~ Town Clerk. (Tel: B.3890)

C. W. Paul.

I certify that this plan has been compiled from the information shown on Ct of Title Vol: 3100 Fol: 35 & V. 3154 F. 55 and is correct for the purpose of the Real Property Act.

(No Survey)

Licensed Surveyor.

4th September 1929.

This is the plan marked "A" referred to in Memorandum of Transfer dated 4th Oct. 1929

P. W. Paul. Registered Proprietor.
Wm. E. Robertson. Witness.
Signatures of parties to be made in this margin.

CONVERSION TABLE ADDED IN DEPARTMENT OF LANDS

DP 324744

FEET	INCHES	METRES
9	7	2.921
10	-	3.048
39	3 1/4	11.970
43	11	13.386
44	-	13.411
44	4	13.513
44	6 1/2	13.576
66	-	20.117
100	-	30.480
104	7 1/2	31.890
114	7 1/2	34.938
120	6	36.728

AC	RD	P	SQ M
-	-	1 1/2	37.9
-	-	17 1/4	436.3

Table of mm

I, Bruce Richard Davies, Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this 16th day of May, 1978

Req:R411614 /Doc:DP 0324744 P /Rev:20-Nov-1992 /NSW LRS /Pgs:ALL /Prt:24-Oct-2023 14:26 /Seq:1 of 1
© Office of the Registrar-General /Src:InfoTrack /Ref:669-683 Old South

Req:R411601 /Doc:CT 12236-149 CT /Rev:21-Dec-2010 /NSW LRS /Pgs:ALL /Prt:24-Oct-2023 14:25 /Seq:3 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:669-683 Old South

CANCELLED

CERTIFICATE OF TITLE

See new edition

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

TORRENS TITLE

Register

Vol. 12236 Fol. 149

Appln. No.20837

Prior Title Vol.4353 Fol.22

Edition issued 18-10-1973

N445665

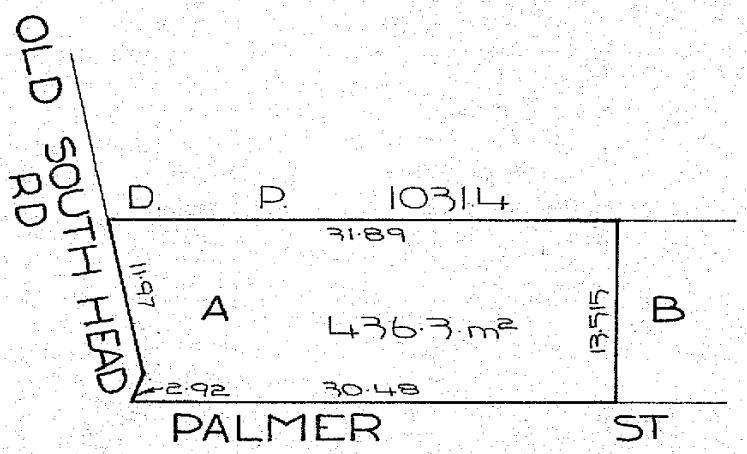
(Page 1) Vol. 12236 Fol. 149

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

Registrar General.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



N445665 LW

R.S.

REDUCTION RATIO 1:400

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot A in Deposited Plan 324744 in the Municipality of Waverley, Parish of Alexandria, County of Cumberland, being part of 1.64 hectares granted to Samuel Peek on 30-4-1840.

FIRST SCHEDULE

JOHN CONSTANTINOU SCORTIS of Vaucluse, Cafe Proprietor.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

~~2. Mortgage No.J315935 to Commonwealth Trading Bank of Australia Entered 22-5-1963.~~ Discharged Q661572

Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Req:R411601 /Doc:CT 12236-149 CT /Rev:21-Dec-2010 /NSW LRS /Pgs:ALL /Prt:24-Oct-2023 14:25 /Seq:4 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:669-683 Old South

Vol. 12236 Fol. 149

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General

CANCELLED
See new edition issued 19-7-1983
Vide T492730
Vol. 12236 Fol. 149
REGISTRAR GENERAL

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
Lease	N415764	31.7.1973	of premises known as 669 Old South Head Road, Vaucluse comprising shop and dwelling to Emanuel Careedy of Neutral Bay, Shop Proprietor and Isobel Careedy his wife	6.11.1973		Expired	13-5-1980	
Lease	Q796471		of premises known as 669 Old South Head Road, Vaucluse comprising shop and dwelling to Constantinos Pollas of Bexley, Business Proprietor and Helen Pollas his wife. Date of Expiry 1-6-1979.	15-8-1978		Expired	13-5-1980	
Lease	R650380		of premises being lock-up shop and residential flat, (including yard, garage and clothes hoist at the rear thereof), known as 669 Old South Head Road, Rose Bay, together with option of renewal, to John David Hugh Kerr Dodd of Darling Point, Caterer and Denise Patricia Dodd his wife as joint tenants. Expires 29-7-1982	13-5-1980		Expired	14-6-1983	
S544753	Lease		Olivia Basto of premises known as Ground floor lock-up shop premises 669A Old South Head Road, Vaucluse, together with option of renewal. Expires 29-2-1984. Registered 2-7-1981.					
T377689	Lease		to Richard Hauser and Roma Hauser, as joint tenants, of premises known as 669B Old South Head Road, Vaucluse, together with an option of renewal. Expires 2-6-1985. Registered 19-1-1983.					
T492730	Lease		to Darryl Leo Kilby and Elizabeth Catherine Kilby as joint tenants of premises being Lock-up shop and residential flat (including yard, garage and clothes hoist at the rear thereof) known as 669 Old South Head Road Rose Bay, with option of renewal. Expires 4-7-1985. Registered 14-6-1983					

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Req:R411601 /Doc:CT 12236-149 CT /Rev:21-Dec-2010 /NSW LRS /Pgs:ALL /Prt:24-Oct-2023 14:25 /Seq:1 of 4
© Office of the Registrar-General /Src:InfoTrack /Ref:669-683 Old South

[redacted]FICATE OF TITLE

12236149

NEW SOUTH WALES [redacted]L PROPERTY ACT, 1900

Vol. 12236 Fol. 149

First Title Old System

Prior Title Vol. 4353 Fol. 22

EDITION ISSUED 19 7 1983

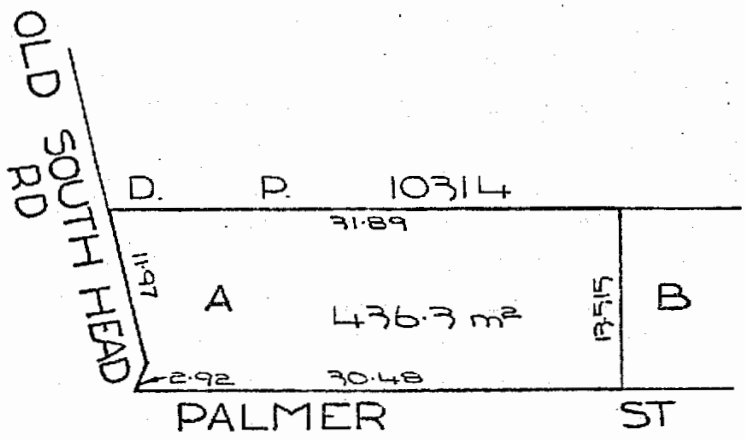
I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

Registrar General.

CANCELLED

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



S

T492730 [redacted]

LAND REFERRED TO

Lot A in Deposited Plan 324744 in the Municipality of Waverley Parish of Alexandria County of Cumberland.

FIRST SCHEDULE

JOHN CONSTANTINOU SCORTIS.

SECOND SCHEDULE

6RY

1. Reservations and conditions in the Crown grant.
2. ~~S544753 Lease to Olivia Basto of premises known as ground floor lock-up shop 669A Old South Head Road, Vaucluse (together with option of renewal). Expires 29-2-1984.~~ 4275376
3. ~~T377689 Lease to Richard Hauser and Rona Hauser, as Joint Tenants of premises known as 669B Expired~~ Old South Head Road, Vaucluse (together with option of renewal). Expires 2-6-1985. 4-7-1986
4. ~~T492730 Lease to Darryl Leo Kilby and Elizabeth Catherine Kilby, as Joint Tenants of premises being lock-up shop and residential flat (including yard garage and clothes hoist at the rear thereof) known as 669 Old South Head Road, Rose Bay (together with option of renewal). Expires 4-7-1985.~~ V787265, V787266, V787267.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

12236 Fol. 149 (Page 1) Vol.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Vol. 12236 Fol. 149

L.O. 1066 D. West, Government Printer

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR | Registrar General

CANCELLED

SECOND SCHEDULE (continued)

PARTICULARS | Registrar General | CANCELLATION

~~T377689 Lease. Lessees: Reynaldo Hugo Kuzniecow and Mabel Cristina Fionna, as joint tenants by transfer 4790774. Registered 26-10-1983~~ W382252

~~V787268 Lease to Mertidia Pty. Limited of lock-up shop and residential flat (including yard, garage and cloth hoist at the rear thereof), 669 Old South Head Road, Rose Bay, reserving rights. Expires 18-12-1987. Option of renewal 3 years. Registered 19-8-1985~~ X368899

~~W382252 Lease to Mabel Cristine Fionna and Reynaldo Hugo Kuzniecow as joint tenants of 669B Old South Head Road, Vaucluse. Expires 2-6-1988. Option of renewal 3 years. Registered 4-7-1986~~ Y275376

L X368899 P Lease to Mertidia Pty. Limited of Premises being lock-up shop and residential flat (including yard and garage at the rear) 669 Old South Head Road, ROSE BAY together with and reserving rights. Expires 18.12.90 with an option of renewal for 3 years. Registered 18.8.1988

L X849661 P Lease to Rose Bay Professionals Pty. Limited of Premises being all those lock up Shop 669A Old South Head Road, Vaucluse Expires 31-7-1989 with an option of renewal for 3 years Registered 19-9-1988

L Y275376 P Lease to Antonio Campos and Deolinda Campos as joint tenants of premises being all those lock-up Shop 669B Old South Head Rd. Vaucluse Expires 12.2.1992 with an option of renewal for 3 years Registered 29-5-1989

NOTATIONS AND UNREGISTERED DEALINGS

OT 4.10.83 T790774 N
A.T. 2.11.83 CT 7014 fol
V787268R -246L -249L -268L(part)
W382252 L
X368899L
X849661 L
Y275376 L

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Reg:R411601 /Doc:CT 12236-149 CT /Rev:21-Dec-2010 /NSW LRS /Pgs:ALL /Prt:24-Oct-2023 14:25 /Seq:2 of 4
NOTE:

LAND REGISTRY SERVICES Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
24/10/2023 2:25PM

FOLIO: A/324744

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 12236 FOL 149

Recorded	Number	Type of Instrument	C.T. Issue
29/7/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
7/9/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
4/10/1989	Y574640	LEASE	EDITION 1
18/6/1991	Z576070	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 2
31/7/1991	Z738852	LEASE	EDITION 3
20/9/1991	Z935018	LEASE	EDITION 4
26/2/1992	E283215	LEASE	EDITION 5
10/3/1994	U94133	LEASE	EDITION 6
7/11/1994	U767526	LEASE	EDITION 7
15/10/1996	2534804	LEASE	EDITION 8
6/11/1996	2591345	LEASE	EDITION 9
17/12/1996	2694831	TRANSFER	
17/12/1996	2694832	MORTGAGE	EDITION 10
11/7/1997	3223963	TRANSFER OF LEASE	EDITION 11
3/8/1999	6057484	DEPARTMENTAL DEALING	
18/7/2000	6880195	CAVEAT	
14/6/2001	7620536	LEASE	EDITION 12
17/6/2002	8688605	TRANSFER OF LEASE	
30/3/2006	AC190146	WITHDRAWAL OF CAVEAT	
30/3/2006	AC190147	DISCHARGE OF MORTGAGE	

END OF PAGE 1 - CONTINUED OVER

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
24/10/2023 2:25PM

FOLIO: A/324744

Recorded	Number	Type of Instrument	C.T. Issue
30/3/2006	AC190148	LEASE	EDITION 13
15/6/2006	AC381783	SUB-LEASE	
27/10/2006	AC701916	MORTGAGE	EDITION 14
27/2/2007	AC962999	VARIATION OF MORTGAGE	EDITION 15
7/4/2010	AF413833	VARIATION OF MORTGAGE	EDITION 16
9/2/2012	AG797003	DISCHARGE OF MORTGAGE	EDITION 17
24/7/2013	AH786215	SURRENDER OF LEASE	
24/7/2013	AH786216	LEASE	EDITION 18
2/7/2016	AK560619	LEASE	EDITION 19
20/8/2018	AN591648	LEASE	EDITION 20
18/11/2019	AP690671	PRIORITY NOTICE	
20/11/2019	AP694303	MORTGAGE	EDITION 21
31/8/2022	AS436684	CAVEAT	EDITION 22
14/10/2022	AS550436	WITHDRAWAL OF CAVEAT	
14/10/2022	AS550437	DISCHARGE OF MORTGAGE	
14/10/2022	AS550438	TRANSFER	
14/10/2022	AS550439	MORTGAGE	EDITION 23
3/10/2023	AT482510	DISCHARGE OF MORTGAGE	
3/10/2023	AT482511	MORTGAGE	EDITION 24

*** END OF SEARCH ***

669-683 Old South

PRINTED ON 24/10/2023

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Received: 24/10/2023 14:25:32

Req:R416457 /Doc:DL 2694831 /Rev:27-Jan-2010 /NSW LRS /Pgs:ALL /Prt:25-Oct-2023 10:58 /Seq:1 of 1
© Office of the Registrar-General /Src:InfoTrack /Ref:669-683 Old South

RP13

[redacted]

TRANSFER

Real Property Act, 1900

2694831 B

OFFICE OF STATE REVENUE (N.S.W. TREASURY) Office of s
1998/97 $0
DULY STAMPED
1ST REG Nº 2011977

U39786

$2 STAMP DUTY

(A) **LAND TRANSFERRED**

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

FOLIO IDENTIFIER A/324744

(B) **LODGED BY**

L.T.O. Box: 45A

Name, Address or DX and Telephone:
NATIONAL AUSTRALIA BANK LIMITED
NATIONAL AUSTRALIA BANK HOUSE
George Street, SYDNEY
237-1111
45A
REFERENCE (max. 15 characters): 96T00107

(C) **TRANSFEROR** JOHN CONSTANTINOU SCORTIS

(D) acknowledges receipt of the consideration of $817,000.00

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

(E) subject to the following **ENCUMBRANCES** 1. E263215 2. 2534804 3. 2591345

PROP

(F) **TRANSFEREE**

T

(G) STAN KASTRISSIOS, HELEN KASTRISSIOS, EMMANUEL KASTRISSIOS and CINZIA KASTRISSIOS of 669 Old South Head Road Vaucluse
as joint tenants/[redacted]

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATE** 9.12.96

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

Signature of Witness

LUCAS J KANAKIS
Name of Witness (BLOCK LETTERS)
Solicitor
13-15 Bridge Street
SYDNEY NSW 2000
Address of Witness

Signature of Transferor

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

Signature of Witness

PMURPHY

Name of Witness (BLOCK LETTERS)

Address of Witness

Signature of Transferee

PETER R MURPHY , Solicitor for Transferee

☞ INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only)

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: A/324744

SEARCH DATE	TIME	EDITION NO	DATE
24/10/2023	2:25 PM	24	3/10/2023

LAND

LOT A IN DEPOSITED PLAN 324744
LOCAL GOVERNMENT AREA WAVERLEY
PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND
TITLE DIAGRAM DP324744

FIRST SCHEDULE

669 OSHR AT VAUCLUSE PTY LTD (T AS550438)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AN591648 LEASE TO LINNIC PARTIES PTY LTD OF LOCK-UP SHOP 1 & LOCK UP GARAGE 1, 669A OLD HEAD ROAD, ROSE BAY. EXPIRES: 24/9/2022. OPTION OF RENEWAL: 5 YEARS.
3 AT482511 MORTGAGE TO MIROSE INVESTMENTS PTY LTD, K R SERVICES PTY LTD & MIRADYON PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

Copyright © Office of the Registrar-General 2023

Received: 24/10/2023 14:25:16

Cadastral Records Enquiry Report : Lot 1 DP 168877

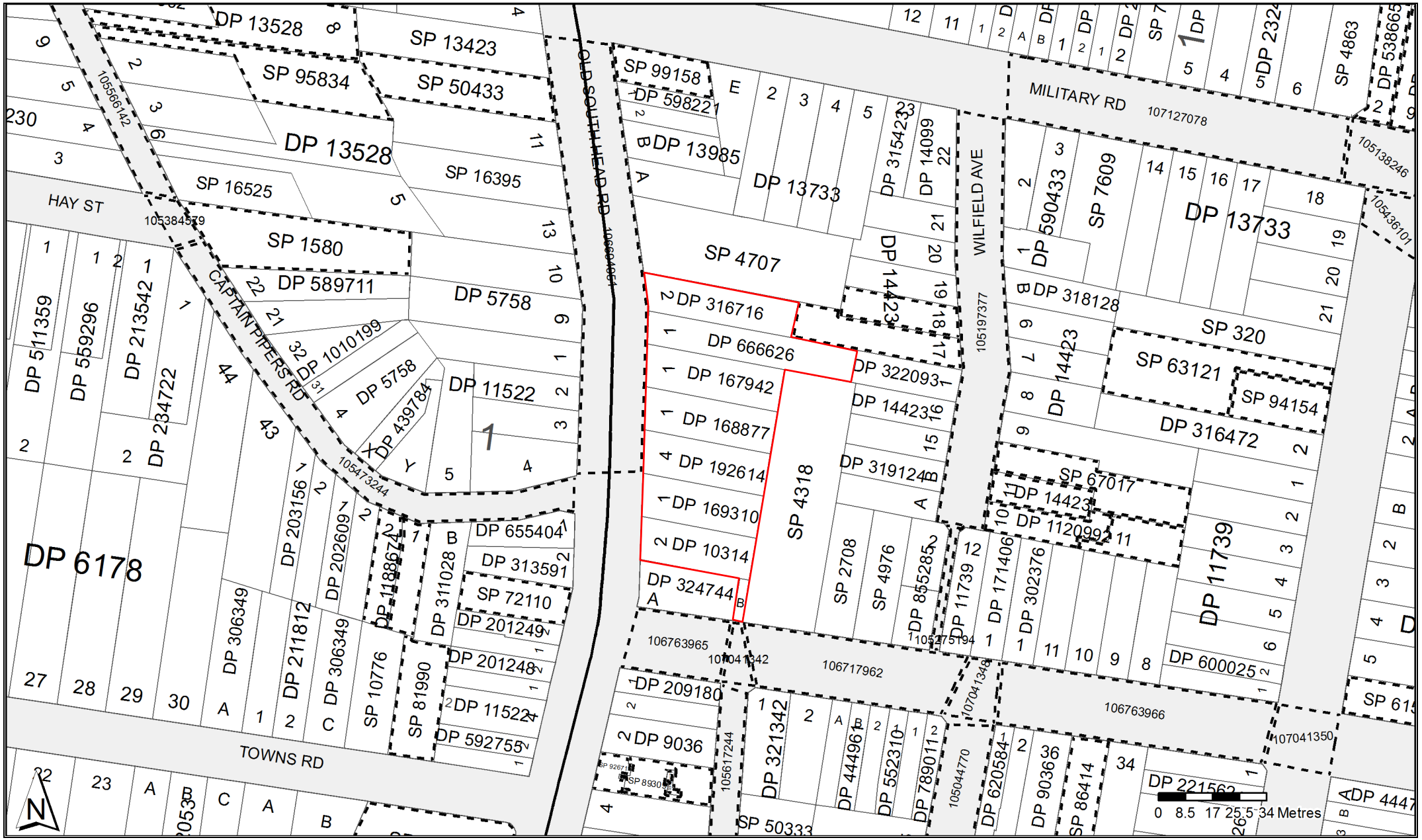
Ref : LS027629_EP - 671-683 Old

Locality : VAUCLUSE

Parish : ALEXANDRIA

LGA : WAVERLEY

County : CUMBERLAND



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

InfoTrack

Req:R119395 /Doc:DP 0324744 P /Rev:20-Nov-1992 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 05:51 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

B892977

Plan Form No. 7 (for compilations)

B892977

F.P.324744

6

M A N

PLAN

Municipality of WAVERLEY

of subdivision of land in ~~Certificate of Title Vol: 3100 Fol: 55~~ 3154 55 dep. 12.11.29

Parish of Alexandria. County of Cumberland.

Scale:- 20 feet to an Inch.

3

272° 24' 50"
120' 6"

D. P. 10314 dep. 12.11.29

2

3100 35
(Vol: 3154 Fol: 55)
3100 dep. 12.11.29 35

272° 24' 50"
104' 7½"

114' 7½"

D P 10314 dep. 12.11.29

Vol 3154 Fol 55

"A" 17¼ per.

"B" ½ per.

Old South Head Rd Aligned 66ft wide

Alignment 90° 06'

Palmer St Aligned 66ft wide

Misc. Plan of Subd. (R.P.) Regd. No. 24744

Note:- Lot "B" of the above Subdivision is to be consolidated with the land in C.T. Vol: 3154 Fol: 55.

Subdivision has
by The Council of The
lity of Waverley, and
ered by Town Clerk's
ate No. 292-23-1
September 1929, and
to the proposed
dorporated and in conjunction/
t 2.
Bond 3[illegible]
(Tel: B.3890)
Town Clerk.

Bk 764/170 Pg 25/10/29 RPC

I certify that this plan has been compiled from the information shown on Ct of Title Vol: 3100 Fol: 35 & V. 3154 F. 55 and is correct for the purpose of the Real Property Act.

(No Survey)

Licensed Surveyor.

4th September 1929.

This is the plan marked "A" referred to in Memorandum of Transfer dated 14th Oct 1929

CONVERSION TABLE ADDED IN DEPARTMENT OF LANDS

DP 324744

FEET	INCHES	METRES
9	7	2.921
10	-	3.048
39	3 1/4	11.970
43	11	13.386
44	-	13.411
44	4	13.513
44	6 1/2	13.576
66	-	20.117
100	-	30.480
104	7 1/2	31.890
114	7 1/2	34.938
120	6	36.728

AC	RD	P	SQ M
-	-	1 1/2	37.9
-	-	17 1/4	436.3

Table of mm

I, Bruce Richard Davies, Registrar General for New South Wales, certify that this negative is a photograph made as a permanent record of a document in my custody this 16th day of May, 1978

1

Req:R119402 /Doc:DP 0010314 P /Rev:19-Feb-2019 /NSW LRS /Prt:23-Dec-2021 05:51 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

Municipality of Waverley
A 644708 1-12-20

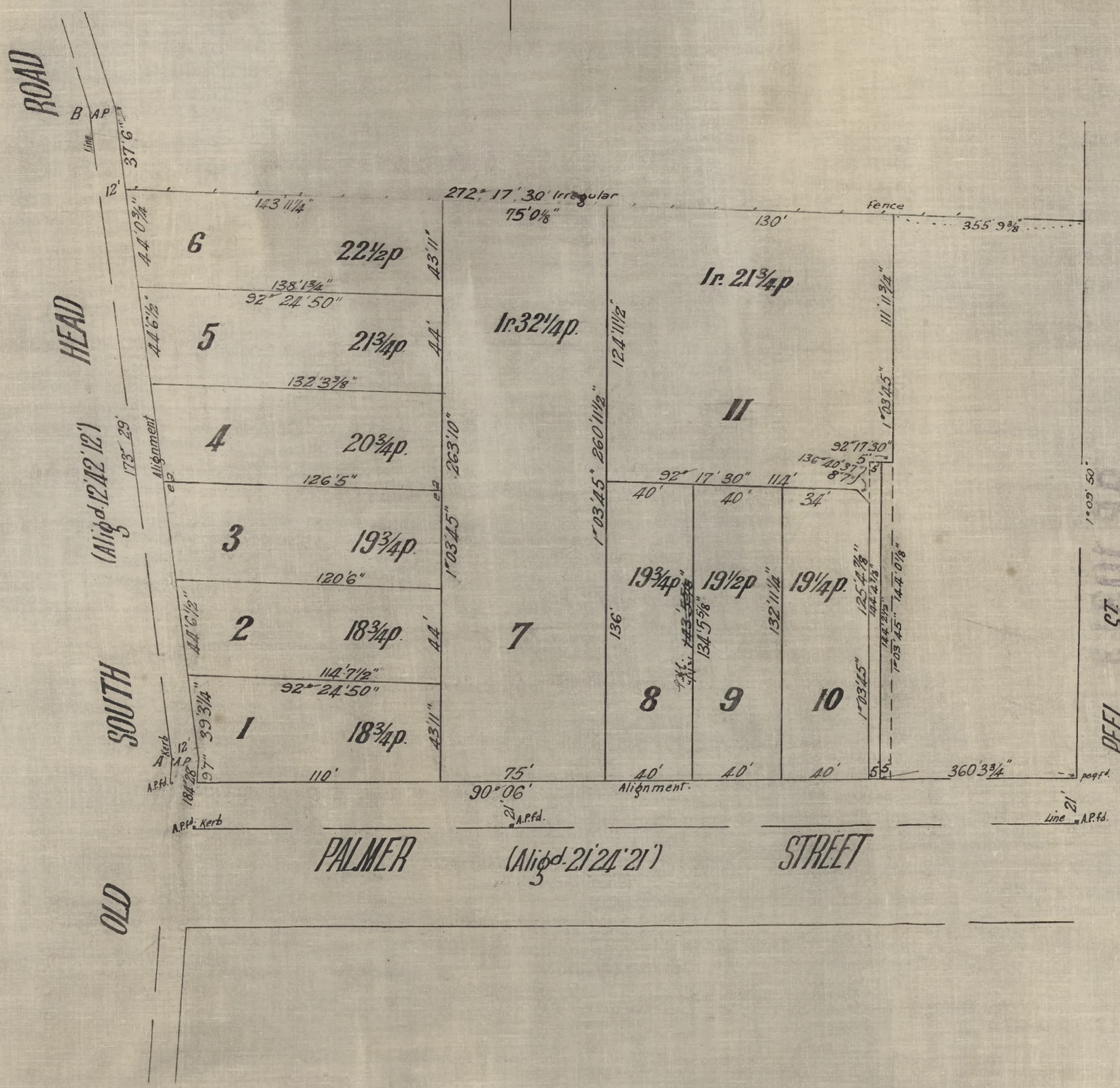
PLAN

DP 10314

of subdivision of part of the land comprised in Appn. 15271 & Appn. 20837

PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND

Scale 50 feet to an inch



This subdivision has been approved by the Council of the Municipality of Waverley on condition that not more than one dwelling is erected on each of lots 8, 9, and 10, and subject to the large allotment at the rear accessible by the 5 feet right-of-way being used only for the purpose of tennis or cognate sports and is covered by the Town Clerk's Certificate No. 39.

I Edward Henry Cowdery of SYDNEY Licensed Surveyor, specially licensed under the Real Property Act do hereby solemnly and sincerely declare that the boundaries and measurements shown in this plan are correct for the purposes of the said Act, and that the survey of the land to which the plan relates has been made under my immediate supervision and I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act, 1900.

E. H. Cowdery
Licensed Surveyor.

Subscribed and declared before me at Sydney this 9th. day of November A.D. 1920.

W. Douglas J.P.

Datum line of Azimuth A-B.

Date of Survey September 1920.

Req:R119401 /Doc:DP 0169310 P /Rev:06-Mar-2019 /NSW LRS /Prt:23-Dec-2021 05:51 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

A652108 ## F.P. 169310

Muny. of Waverley

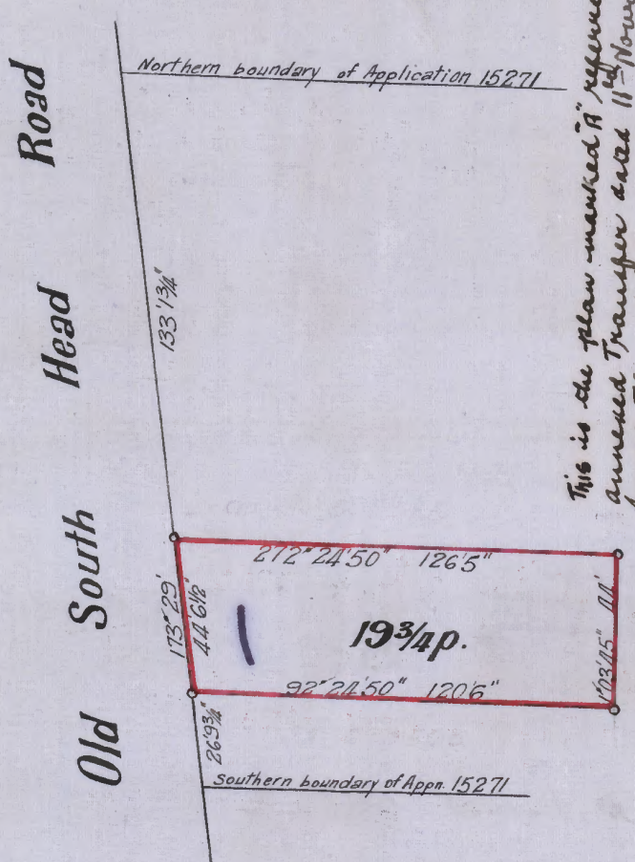
M. N.

PLAN

of part of the land comprised in Appn. 15271

Parish of Alexandria County of Cumberland

Scale 50 feet = 1 inch



This is the plan marked "A" referred to in the annexed Transfer dated 11th Nov A.D. 1920 from Joseph Thomas Bofinach to William John Fleming

Joseph T. Bofinach Transferor.

Witness to both signatures
R. Weildon
Clerk to Abraham, Brown & Co.
Solrs. Sydney.

Transferee. W. J. Fleming

I certify that this plan has been compiled from the information shown in Application 15271 and is correct for the purposes of the Real Property Act.

L. W. A. Moorley
Licensed Surveyor.
5/8/20.

Area 19¾ perches more or less
Bk 559 p. 10
Lot & D.P. No.

PXM

Req:R119400 /Doc:DP 0192614 P /Rev:06-Mar-2019 /NSW LRS /Prt:23-Dec-2021 05:51 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

6102 (L)

(L) 5018

F.P. 192614.

6102 (L)

Sht 1 Waverley

(3)

PLAN

of

OSTRICH FARM ESTATE

Subdivision No. 2.

Scale 70 feet = 1 inch

Pt Alexandria
Cs C'land.

This Subdivision has been approved by the Council of the Municipality of Waverley.

W. Dingley
Town Clerk
9.2.20

This is the plan referred to in my letter to
Cowdery & Cowdery of the 9th February 1920

South (66) Head (wide) Road

Old Palmer

D. P. 14414

66' wide

Street

Peel

(66' wide)

Strut

W. 3117

F. 108

D.

P.

11739.

10314

20¾ P. 44'

44'6¾" 44'6½"

6 5 4 3 2 1 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

PX

RECOMMENDED FOR REGISTRATION

Cowdery & Cowdery
Licensed Surveyors

Chf. Mun. Waverley. R' 2 16.8.20

Req:R119399 /Doc:DP 0168877 P /Rev:06-Mar-2019 /NSW LRS /Prt:23-Dec-2021 05:51 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

A652094 "A"

A652094

Muny. of Waverley

M N.

PLAN

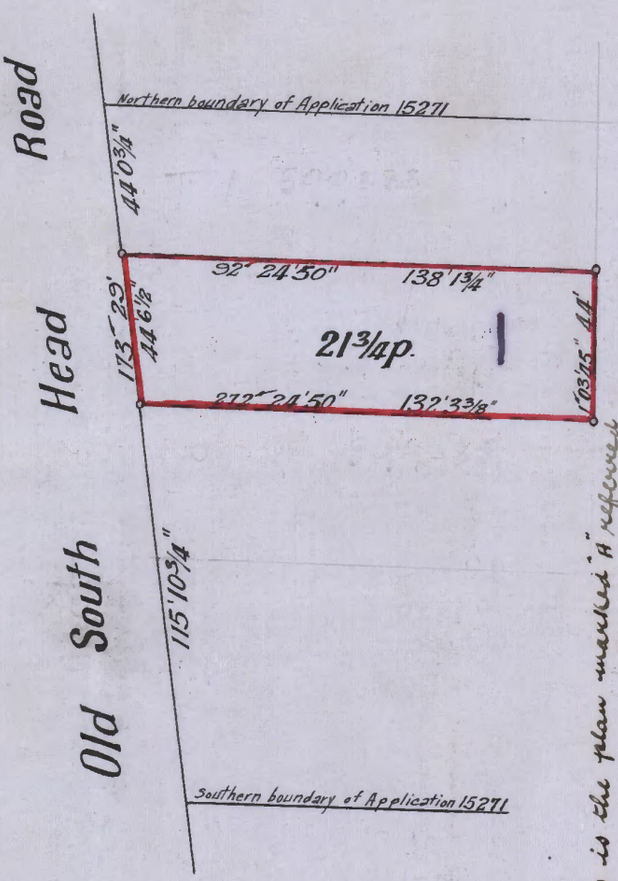
F.P. 168877

6

of part of the land comprised in Appn 15271

Parish of Alexandria County of Cumberland

Scale 50 feet = 1 inch



This is the plan marked "A" referred to in the annexed Transfer dated 9th October 1920 from Joseph Thomas Bannerclyff to Harry Melrose McFadden

Witness to signatures of Transferor and Transferee

Clerk to Messrs. Abbott, Tuson, Abbott & Abbott Sydney

Harry Melrose TRANSFEREE

Joseph Thomas Bannerclyff TRANSFEROR.

I certify that this plan has been compiled from the information shown in Application 15271 and is correct for the purposes of the Real Property Act.

E. H. Bowdery
Licensed Surveyor
5/8/20

Area 21¾p. as per engmt Dy

Bk 559 P 10 Land Titles Office

PX

M

Req:R119398 /Doc:DP 0167942 P /Rev:15-Mar-2019 /NSW LRS /Prt:23-Dec-2021 05:51 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

A599383 ≠ F.P. 167942

M.N.

Muny. of Waverley

PLAN

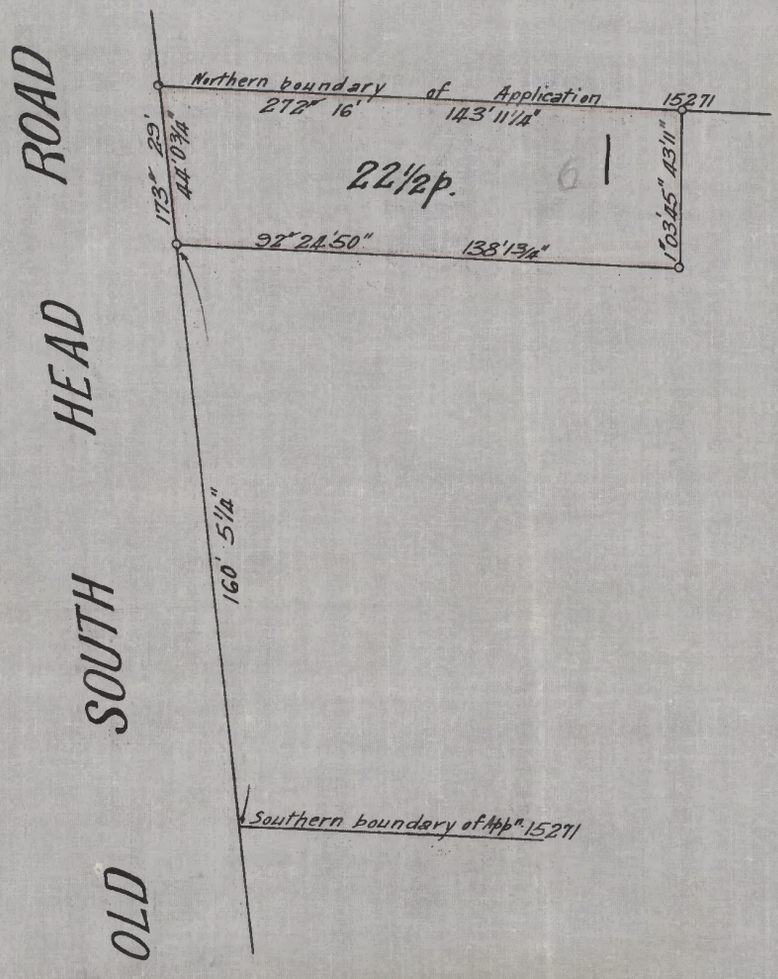
A 599383

(2)

of part of the land comprised in Appn 15271

Parish of Alexandria County of Cumberland

scale 50 feet = 1 inch.



This is the plan marked "A" referred to in the annexed Transfer from Joseph Thomas Barraclough to Cecil Newton Mell dated 1st July 1920

Witness to both signatures R. Mellon

Joseph T. Barraclough.

C. Newton Mell

I certify that this plan has been compiled from the information shown in Application 15271 and is correct for the purposes of the Real Property Act.

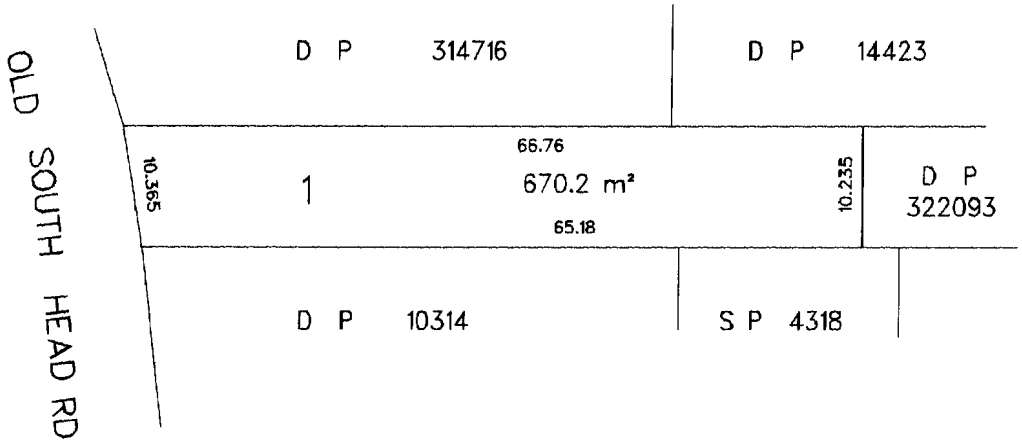
E. H. H. Bowden
Licensed Surveyor
22/7/20

Bk 547 p. 78 Lots 7, 8, 9 & 10
Amn 22 1/2 p. comp
9.8.20

4 APR 1927

PXM

InfoTrack
Req:R119397 /Doc:DP 0666626 P /Rev:01-Apr-1998 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 05:51 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old



D P 666626

Registered: .26.3.1998

Title System: TORRENS

Purpose: DEPARTMENTAL

Ref. Map: U1845-32

Last Plan: DP322093

THIS PLAN HAS BEEN CREATED TO PROVIDE A UNIQUE IDENTIFIER TO ENABLE THE ISSUE OF AN AUTOMATED TORRENS TITLE FOR THE LAND COMPRISED IN FOLIO OF THE REGISTER VOLUME 4233 FOLIO 15 FORMERLY KNOWN AS PART OF 4 ACRES 2 ROODS AREA GRANT

Lengths are in metres.

Reduction Ratio : NOT TO SCALE

L.G.A.: WAVERLEY

LOCALITY: --------

PARISH: ALEXANDRIA

COUNTY: CUMBERLAND

N O 1 D 1 B

G.D.B. ----

InfoTrack

B459730

Plan Form No. 7 (for compilations)

FP316716 B459730

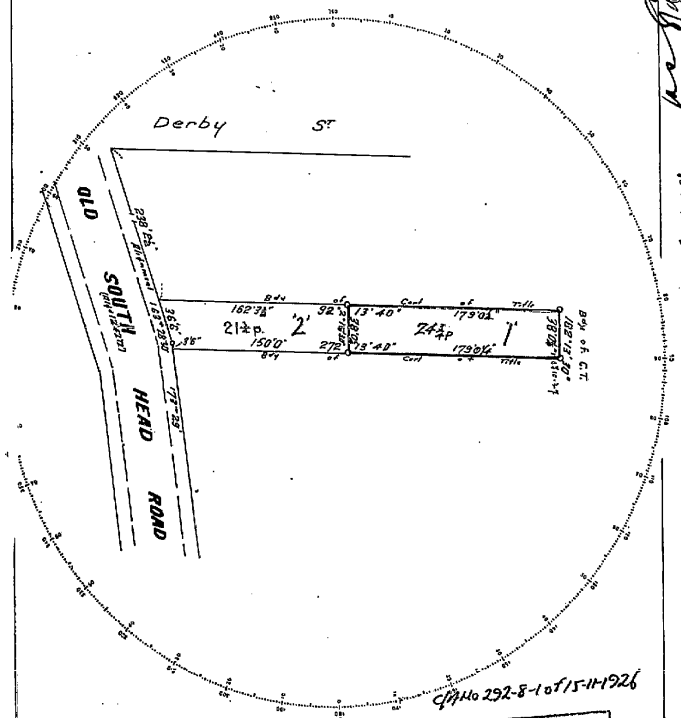
Municipality of Waverley
Shire of

PLAN MPS(RD)No16716

of part of the land in C.T. Vol 3893 Fol 248

Parish of Alexandria County of Cumberland

Scale 70 feet to an inch.


Derby St
OLD SOUTH HEAD ROAD
21¼ p.
1500'
2'
242 sq m
1'
179°01'
179°04'
13'40"
13'40"
182°38"
92.88
92.88
92.88

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
23/12/2021 5:59AM

FOLIO: AUTO CONSOL 4353-41

Recorded	Number	Type of Instrument	C.T. Issue
3/8/1993		CONSOL HISTORY RECORD CREATED FOR AUTO CONSOL 4353-41 PARCELS IN CONSOL ARE: 2/10314, B/324744.	
29/10/1993	I756838	DISCHARGE OF MORTGAGE	
29/10/1993	I756839	NOTICE OF DEATH	EDITION 1
28/8/2000	7050195	TRANSMISSION APPLICATION	
28/8/2000	7050196	TRANSFER	EDITION 2
20/9/2017	AM742926	CAVEAT	
19/5/2020	AQ53667	WITHDRAWN - TRANSMISSION APPLICATION (DEVISEE,BENEFICIARY,NEXT OF KIN)	
25/6/2020	AQ174573	TRANSMISSION APPLICATION (DEVISEE,BENEFICIARY,NEXT OF KIN)	EDITION 3
6/7/2020	AQ216284	TRANSMISSION APPLICATION (DEVISEE,BENEFICIARY,NEXT OF KIN)	EDITION 4
23/11/2020	AQ576609	WITHDRAWAL OF CAVEAT	
23/11/2020	AQ545891	TRANSFER	
23/11/2020	AQ545892	MORTGAGE	EDITION 5 CORD ISSUED

*** END OF SEARCH ***

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Received: 23/12/2021 05:59:32

Req:R119411 /Doc:DL 7050195 /Rev:31-Aug-2000 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 05:59 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

RP3

TRANSMISSION APPLICATION

Section 93 Real Property Act 1900

7050195W

Office of State Revenue use only

B

(A) **LAND**

Show no more than 20 References to Title.

Identifier AUTO CONSOL 4353-41
Identifier 2/SP17645, Identifier 3/SP17645
Identifier 8/SP17645

(B) **REGISTERED DEALING**

If applicable.

(C) **LODGED BY**

L.T.O. Box	Name, Address or DX and Telephone
777F	Ralph Selwyn, Solicitor 127 Neerim Road, Castle Cove 2069 Tel 9417 5006 REFERENCE (max. 15 characters):

(D) **DECEASED REGISTERED PROPRIETOR**

NANCY SANTA MARIA

(E) **APPLICANT**

TA

DIANA MARGARET ROSE SANTAMARIA, ELENA LISA SANTAMARIA and PAUL JOSEPH SANTAMARIA

(F) ~~I~~ We, the Applicant, being entitled as Executors of the ~~will/estate~~ of the Deceased Registered Proprietor (who died on 12th June 1999) pursuant to ~~Probate/Letters of Administration~~ No. 117989/99 granted on 26th November 1999 to Diana Margaret Rose Santamaria, Elena Lisa Santamaria and Paul Joseph Santamaria, ~~apply to be registered as proprietor of the estate or interest of the Deceased Registered Proprietor in the Land/Registered Dealing~~ specified above.

(G) Certified correct for the purposes of the Real property Act 1900. **DATE** 15/2/2000

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

Z. Urbanski
Signature of Witness

ZBIGNIEW URBANSKI
Name of Witness (BLOCK LETTERS)

663 OLD SOUTH HEAD RD, VAUCLUSE
Address of Witness

D. Santamaria
Signature of Applicant

EVIDENCE SIGHTED & RETURNED (office use only) Photo S+R

CHECKED BY (office use only)

1/1

Req:R119411 /Doc:DL 7050195 /Rev:31-Aug-2000 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 05:59 /Seq:2 of 2
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CONSENT OF EXECUTOR OR ADMINISTRATOR

(H)

I, ... **Executor of the will /Administrator of the estate**

of the Deceased Registered Proprietor, hereby consent to this application.

.....
Signature of Witness

.....
Name of Witness (BLOCK LETTERS)

.....
Address of Witness

.....
Signature of Executor/Administrator

INSTRUCTIONS FOR COMPLETION

STAMP DUTY: if the Applicant is a devisee, beneficiary, next-of-kin or otherwise beneficially entitled or if the Deceased Registered Proprietor died prior to 31 December 1981 the application must be presented to the Office of State Revenue prior to lodgment at the Land Titles Office.

1. The Application must be completed clearly and legibly in permanent, dense, black or dark blue non-copying ink. If using a dot-matrix printer the print must be letter-quality.
2. Do not use an eraser or correction fluid to make alterations: rule through rejected material. Initial each alteration in the lefthand margin.
3. If the space provided at any point is insufficient, you may annex additional pages. These must be the same size as the form; paper quality, colour. etc, must conform to the requirements set out in Land Titles Office Information Bulletin No. 19. All pages of any annexure must be signed by the person executing the Application and any attesting witness.
4. The following instructions relate to the marginal letters on the application.

(A) LAND
Show the relevant Reference to Title. If there are more than 20 show none in this panel. Place ALL of them on an annexure (see 3 above) with 20 per sheet.

(B) REGISTERED DEALING
Show the registration number of any lease, mortgage or charge in regard to which the Applicant is applying to be registered as a proprietor.

(C) LODGED BY
This section relates to the person or firm lodging the Application at the Land Titles Office.
Reference (max. 15 characters) This is optional. Any slashes, dots, blank spaces, etc, will be counted as characters.

(D) DECEASED REGISTERED PROPRIETOR
Show the name in full. Address and occupation need not be shown.

(E) APPLICANT
Show the name in full. Address and occupation need not be shown.

(F) WILL/ESTATE, etc
Amend "will/estate", "Probate/Letters of Administation" and "Land/Registered Dealing" as appropriate.
In the relevant spaces show the capacity (executor, devisee, etc) in which the Applicant is entitled to apply, the date of death of the Deceased Registered Proprietor, the number and date of grant of the Probate or Letters of Administration pursuant to which the Application is made, and the name of the person to whom the grant was made.

(G) EXECUTION
General The application must be executed by or on behalf of the Applicant.
By the Applicant Personally The application must be signed in the presence of an adult witness who is not an Applicant and who knows the party executing personally. The witness should complete the appropriate section of the application.
By the Applicant's Attorney The Power of Attorney must be registered in the General Register of Deeds at the Land Titles Office. The execution should take the form, "AB by her attorney XY *[full name]* pursuant to Power of Attorney Book 1234 Number 567".
Under Authority If the application is made pursuant to any statutory, judicial or other authority, except a Power of Attorney (see above), the nature of the authority should be disclosed.
By a Corporation under Seal The execution must include a statement that the seal has been properly affixed, for example, "... pursuant to a resolution of the board of directors ...". Alternatively, all those attesting the affixing of the seal must state their position in the corporation.

(H) CONSENT OF EXECUTOR OR ADMINISTRATOR
This is required only where the Applicant claims to be entitled other than as executor, administrator or trustee.

The completed Application must be lodged by hand at the LAND TITLES OFFICE, Queen's Square, Sydney, together with the Certificate of Title, the probate or letters of administration (or a copy thereof certified by a solicitor to be a true copy) and a completed Notice of Sale.

If you have any questions about filling out the form, please call 228-6666 and ask for our Customer Services Branch.

Req:R119412 /Doc:DL 7050196 /Rev:31-Aug-2000 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 05:59 /Seq:1 of 1
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Form: 97-01T
Licence: 10V/0096/95
Printed: 0897LTO

TRANSFER

New South Wales
Real Property Act 1900

7050196U

Instructions for filling out this form are available from the Land Titles Office

Office of State Revenue use only

NEW SOUTH WALES DUTY
06-03-2000 0000249056-005
SECTION 30
DUTY $ **********10.00

(A) **LAND TRANSFERRED**
If appropriate, specify the share or part transferred.

FOLIO IDENTIFIER Auto-Consol 4353-41

(B) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
777F	Ralph Selwyn, Solicitor PO Box 5 Willoughby 2068 Reference (15 character maximum):

(C) **TRANSFEROR** DIANA MARGARET ROSE SANTAMARIA, ELENA LISA SANTAMARIA and PAUL JOSEPH SANTAMARIA

(D) acknowledges receipt of the consideration of One Dollar

and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable): 1. ..... 2. ..... 3. .....

(F) **TRANSFEREE**

(G)

T **TS** (s713 LGA) **TW** (Sheriff)	DIANA MARGARET ROSE SANTAMARIA and ELENA LISA SANTAMARIA **TENANCY:** TENANTS IN COMMON IN EQUAL SHARES

(H) We certify this dealing correct for the purposes of the Real Property Act 1900. **DATE** 28/8/2000

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

M. Santamaria
Signature of Witness

MARY L. SANTAMARIA
Name of Witness (BLOCK LETTERS)

40 ALBERT ST.
Address of Witness

POWER HEIGHTS 2750

D. Santamaria
Signature of Transferor

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

.....
Signature of Witness

.....
Name of Witness (BLOCK LETTERS)

.....
Address of Witness

R. Selwyn
R. Selwyn
Signature of Transferee's solicitor

If signed on the transferee's behalf by a solicitor or licensed conveyancer, show the signatory's full name in block letters.

Checked by (LTO use) .....

Req:R119413 /Doc:DL AQ174573 /Rev:25-Jun-2020 /NSW LRS /Prt:23-Dec-2021 06:00 /Seq:1 of 2
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Lodger Details

Lodger Code	502920
Name	RANDO LEGAL SERVICES
Address	SE 201, 11 SPRING ST CHATSWOOD 2067
Lodger Box	1W
Phone	
Email	
Reference	2020M1094 SANT

For Office Use Only

AQ174573

TRANSMISSION APPLICATION

Jurisdiction NEW SOUTH WALES

Duty Assessment 9801181-001

Privacy Collection Statement

Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

Land Title Reference

4353-41

Deceased Registered Proprietor

Given Name(s)	DIANA MARGARET ROSE
Family Name	SANTAMARIA
Date of Death	2019-11-29
Pursuant to	Probate No. 2020/00011324
Granted on	2020-03-04

Applicant

Given Name(s)	DIANA MARGARET ROSE
Family Name(s)	SANTAMARIA
Capacity	BENEFICIARY
Share of whole of land/interest	1/2
Tenancy	TENANTS IN COMMON

The Applicant applies to be registered as proprietor of the Estate of the deceased registered proprietor as specified in this Instrument.

ATTACHMENT

See attached Caveator's Consent

Consent of Executor, Administrator or Trustee

Given Name(s)	DIANA MARGARET ROSE SANTAMARIA
Capacity	EXECUTOR

The Subscriber confirms: Written consent to this Application has been obtained from the executor of the will/administrator of the estate/trustee of the estate of the deceased registered proprietor.

APPLICANT EXECUTION

The Certifier has taken reasonable steps to verify the identity of the applicant.

The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

The Certifier has retained the evidence supporting this Registry Instrument or Document.

The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of	DIANA MARGARET ROSE SANTAMARIA
Signer Name	BARTHOLOMEW RANDO
Signer Organisation	RANDO LEGAL SERVICES PTY LIMITED
Signer Role	PRACTITIONER CERTIFIER
Execution Date	16/06/2020

Req:R119413 /Doc:DL AQ174573 /Rev:25-Jun-2020 /NSW LRS /Prt:23-Dec-2021 06:00 /Seq:2 of 2
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CONSENT OF CAVEATOR

Section 71F Water Management Act 2000

Licence: W05-08-615
Licensee: LEAP Legal Software Pty Limited
Firm Name: In The Hill Conveyancing Pty Ltd

Before completing this form, carefully read the relevant Registrar General's Guidelines available from NSW Land Registry Services (NSW LRS). Failure to do so may lead to rejection. All handwriting must be in block capitals.

Leave this space clear for office use

PRIVACY NOTE: The Water Management Act 2000 authorises the collection of the information required by this form for the establishment and maintenance of the Water Access Licence Register. That Act allows for public access to the Register and for ministerial disclosure of information contained in the Register.

CODE	DETAILS OF THE PERSON OR FIRM LODGING THIS FORM FOR REGISTRATION AT NSW LRS			
XC	(A) Document Collection Box	(B) Name, Address or DX, Telephone, and Customer Account Number if any Henry William Lawyers GPO BOX 4313 Sydney NSW 2001	(C) Reference PEXA 204627874	(D) Dealing No. of Transmission Application

(E) WATER ACCESS LICENCE NUMBER	(F) LICENCE TENURE TYPE	(G) REGISTERED DEALING
		AUTO CONSOL 4353-41

(H) CAVEAT	(I) CAVEATOR
6AM742926	671 OSHR At Vaucluse Pty Ltd ACN 621 174 089 of Level 1,1 Newcastle Street, Rose Bay NSW 2029

(J) REGISTERED HOLDER WHOSE HOLDING / INTEREST IS AFFECTED BY THE CAVEAT
DIANA MARGARET ROSE SANTAMARIA
ELENA LISA SANTAMARIA

(K) THE CAVEATOR CONSENTS TO THE FOLLOWING DEALING(S)
Transmission Application in favour of DIANA MARGARET ROSE SANTAMARIA

(L) The caveator named above hereby consent to the registration of the dealing specified above so far as it affects registered dealing referred to.

DATE: 15th JUNE 2020

Certified correct for the purposes of the Water Management Act 2000 by the person whose signature appears below.

Signature:

Signatory's name: Ron Zucker
Signatory's capacity: Australian Legal Practitioner for the caveator

Req:R119414 /Doc:DL AQ216284 /Rev:06-Jul-2020 /NSW LRS /Prt:23-Dec-2021 06:00 /Seq:1 of 2
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Lodger Details

Lodger Code	502920
Name	RANDO LEGAL SERVICES
Address	SE 201, 11 SPRING ST CHATSWOOD 2067
Lodger Box	1W
Phone	
Email	
Reference	2020M1094

For Office Use Only

AQ216284

TRANSMISSION APPLICATION

Jurisdiction NEW SOUTH WALES

Duty Assessment 9840605-001

Privacy Collection Statement

Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

Land Title Reference

4353-41

Deceased Registered Proprietor

Given Name(s)	ELENA LISA
Family Name	SANTAMARIA
Date of Death	2019-11-29
Pursuant to	Probate No. 2020/00011324
Granted on	2020-03-04

Applicant

Given Name(s)	DIANA MARGARET ROSE
Family Name(s)	SANTAMARIA
Capacity	BENEFICIARY
Share of whole of land/interest	1/2
Tenancy	TENANTS IN COMMON

The Applicant applies to be registered as proprietor of the Estate of the deceased registered proprietor as specified in this Instrument.

ATTACHMENT

See attached Caveator's Consent

Consent of Executor, Administrator or Trustee

Given Name(s)	DIANA MARGARET ROSE SANTAMARIA
Capacity	EXECUTOR

The Subscriber confirms: Written consent to this Application has been obtained from the executor of the will/administrator of the estate/trustee of the estate of the deceased registered proprietor.

Given Name(s)	PAUL JOSEPH SANTAMARIA
Capacity	EXECUTOR

The Subscriber confirms: Written consent to this Application has been obtained from the executor of the will/administrator of the estate/trustee of the estate of the deceased registered proprietor.

APPLICANT EXECUTION

The Certifier has taken reasonable steps to verify the identity of the applicant.

The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

The Certifier has retained the evidence supporting this Registry Instrument or Document.

The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of	DIANA MARGARET ROSE SANTAMARIA
Signer Name	BARTHOLOMEW RANDO
Signer Organisation	RANDO LEGAL SERVICES PTY LIMITED
Signer Role	PRACTITIONER CERTIFIER
Execution Date	01/07/2020

Req:R119414 /Doc:DL AQ216284 /Rev:06-Jul-2020 /NSW LRS /Prt:23-Dec-2021 06:00 /Seq:2 of 2
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671 OSHR At Vaucluse P/L
ACN 621 174 089

Level 1, 1 Newcastle Street
Rose Bay NSW 2029

PO Box 561
Rose Bay NSW 2029

Tel 02 9388 6500
Fax 02 9388 6599

22 June 2020

The Registrar General
NSW LRS
Queens Square
1 Prince Albert Road
Sydney NSW 2000

Dear Sir,

CAVEATOR CONSENT TO THE REGISTRATION OF TRANSMISSION APPLICATION IN FAVOUR OF DIANA MARGARET ROSE SANTAMARIA DEALING NUMBER AQ174573

CAVEATOR NAME: 671 OSHR AT VAUCLUSE PTY LTD ACN 621 174 089

DP Reference: AUTO CONSOL 4353 -41

We are the Caveator under lodged Caveat 6AM742926 that affects folio of the register AUTO CONSOL 4353 -41 (**Land**).

We consent to the registration of the following documents that have been lodged in respect of the Land:

• Transmission Application in favour of Diana Margaret Rose Santamaria dealing number AQ174573

Yours faithfully,

.....
Karol Wen Fu
Sole Director/Secretary 671 OSHR At Vaucluse PTY LTD ACN 621 174 089

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: AUTO CONSOL 4353-41

SEARCH DATE	TIME	EDITION NO	DATE
23/12/2021	5:57 AM	5	23/11/2020

LAND

LAND DESCRIBED IN SCHEDULE OF PARCELS
LOCAL GOVERNMENT AREA WAVERLEY
PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND
TITLE DIAGRAM SEE SCHEDULE OF PARCELS

FIRST SCHEDULE

671 OSHR AT VAUCLUSE PTY LTD (T AQ545891)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AQ545892 MORTGAGE TO BENDIGO AND ADELAIDE BANK LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

SCHEDULE OF PARCELS	TITLE DIAGRAM
LOT 2 IN DP10314	DP10314
LOT B IN DP324744	DP324744.

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 23/12/2021 05:57:58

Req:R119429 /Doc:CT 13638-077 CT /Rev:27-Jan-2011 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 06:18 /Seq:1 of 2
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[redacted]FICATE OF TITLE

NEW SOUTH WALES [redacted]EAL PROPERTY ACT, 1900

Vol. 13638 Fol. 77

EDITION ISSUED 11 7 1978

Appln No 15271

Prior Title Vol. 3149 Fol. 17

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

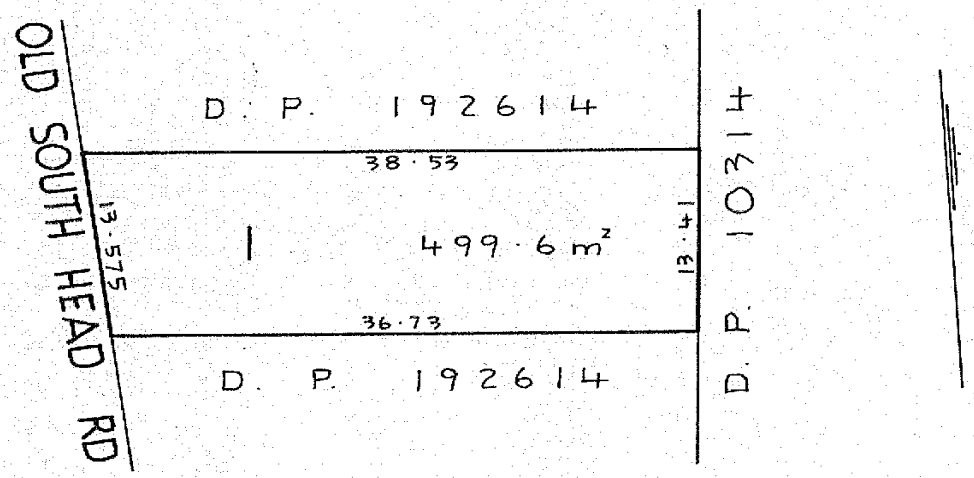
~~CANCELLED~~

Registrar General.

PLAN SHOWING LOCATION OF LAND

SEE AUTO FOLIO

LENGTHS ARE IN METRES



SQ687316 V.C. CA

REDUCTION RATIO 1:400

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 169310 in the Municipality of Waverley Parish of Alexandria and County of Cumberland being part of 1.639 hectares granted to Samuel Peek on 30-4-1840.

FIRST SCHEDULE

~~CHARLES KEITH SIBLEY JOHNSTON of Rose Bay, Company Director.~~

GRY

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

(Page 1) Vol. 13638 Fol. 77

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE

RG 2/64

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Vol. 13638 Fol. 77

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	~~Signature of~~ Registrar General
John Arane and Yvonne Arane as joint tenants by Transfer V734772. Registered 11-6-1985.				

CANCELLED

SEE AUTO FOLIO

T361426 M
V734771 D M
72T

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	~~Signature of~~ Registrar General	CANCELLATION	
~~T361426~~		~~Mortgage to Westpac Banking Corporation. Registered 30-12-1982.~~			Discharged	V734771

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Req:R119429 /Doc:CT 13638-077 CT /Rev:27-Jan-2011 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 06:18 /Seq:2 of 2
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Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
23/12/2021 6:18AM

FOLIO: 1/169310

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 13638 FOL 77

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
24/11/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
1/8/1994	U488231	NOTICE OF DEATH	EDITION 1
22/4/2008	AD907513	TRANSFER	
22/4/2008	AD907514	MORTGAGE	EDITION 2
12/12/2017	AM965504	CAVEAT	
1/9/2018	AN678863	DEPARTMENTAL DEALING	EDITION 3 CORD ISSUED
14/1/2021	AQ715881	WITHDRAWAL OF CAVEAT	
14/1/2021	AQ715882	DISCHARGE OF MORTGAGE	
14/1/2021	AQ715883	TRANSFER	
14/1/2021	AQ715884	MORTGAGE	EDITION 4 CORD ISSUED

*** END OF SEARCH ***

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Received: 23/12/2021 06:18:06

Req:R119430 /Doc:DL AD907513 /Rev:23-Apr-2008 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 06:18 /Seq:1 of 1
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Form: 01T
Release: 3.4
www.lands.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

AD907513L

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

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
09-04-2008 0004927248-001
SECTION 18(2)
DUTY $ **********2.00

(A) **FOLIO OF THE REGISTER** 1/169310

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and LLPN if any	CODES
49R	LLPN: 126043B ANZ BANK C/- ESPREON DX 885 SYDNEY 02 9210 0953 Reference: ANZ-LEPAR	T TW (Sheriff)

(C) **TRANSFEROR** Yvonne ARANE

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1,592,500.00 and as regards

(E) **ESTATE** the above folio of the Register transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** Rodney Basil LEPAR and Wendy Patricia LEPAR

(I) **TENANCY:** Joint Tenants

DATE DO NOT DATE

(J) I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness: ELENA SANTAMARIA
Address of witness: 671 OLD SOUTH HEAD ROAD
VAUCLUSE NSW 2030

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: Y. Arane.

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

Signature:

Signatory's name: Cynthia SING
Signatory's capacity: transferee's solicitor

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/169310

SEARCH DATE	TIME	EDITION NO	DATE
23/12/2021	5:57 AM	4	14/1/2021

LAND

LOT 1 IN DEPOSITED PLAN 169310
LOCAL GOVERNMENT AREA WAVERLEY
PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND
TITLE DIAGRAM DP169310

FIRST SCHEDULE

673 OSHR AT VAUCLUSE PTY LTD (T AQ715883)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AQ715884 MORTGAGE TO BENDIGO AND ADELAIDE BANK LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 23/12/2021 05:57:57

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
23/12/2021 6:28AM

FOLIO: 4/192614

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3089 FOL 201

Recorded	Number	Type of Instrument	C.T. Issue
18/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
9/5/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
23/10/1992	E847442	TRANSMISSION APPLICATION	EDITION 1
21/12/1993	I896322	TRANSFER	EDITION 2
20/9/2017	AM742907	CAVEAT	
16/7/2019	AP398266	CHANGE OF NAME	
16/7/2019	AP398267	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 3
21/11/2019	AP699492	WITHDRAWAL OF CAVEAT	
21/11/2019	AP699493	TRANSFER	EDITION 4
29/9/2020	AQ425325	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 5
6/11/2020	AQ536888	MORTGAGE	EDITION 6 CORD ISSUED

*** END OF SEARCH ***

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Received: 23/12/2021 06:28:43

Req:R119431 /Doc:DL E847442 /Rev:21-May-2010 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 06:28 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old OFFICE USE ONLY

RP3 STAMP DUTY

B

E 847442 P

TRANSMISSION APPLICATION

TA of R /

$

SECTION 93, REAL PROPERTY ACT, 1900

(See Instructions for Completion on back of form)

DESCRIPTION OF LAND Note (a)

LAND of which deceased is registered proprietor

Torrens Title reference	If Part Only, Delete Whole and Give Details	Location
VOLUME: 3089 FOLIO: 201 NOW BEING 4/192614	WHOLE	VAUCLUSE

REGISTERED DEALING Note (b)

LEASE, MORTGAGE, OR CHARGE of which deceased is registered proprietor

Type of Dealing	Registered Number	Torrens Title Reference	Location

DECEASED REGISTERED PROPRIETOR Note (c)

THOMAS EDMUND BYRNE

Note (d) (the abovenamed DECEASED) is registered as proprietor of the land above described. ~~abovementioned registered dealing~~. The APPLICANT

APPLICANT Note (e)

ELIZABETH ANN BYRNE and PATRICIA WILLARD

OFFICE USE ONLY

ENTITLEMENT Note (f) and (j)

being entitled as EXECUTRICES of the will/~~estate~~ of the abovenamed deceased

Probate No. 114188/92 ~~Letters of Administration No.~~ of whose will was ~~of whose estate was~~ granted on 30th September, 1992

to ELIZABETH ANN BYRNE and PATRICIA WILLARD

Note (d) hereby applies to be registered as proprietor of the estate or interest of the said deceased in the land above described. ~~abovementioned registered dealing~~.

DATE 21st October 1992

I hereby certify this application to be correct for the purposes of the real Property Act, 1900.

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

EXECUTION Note (g)

Signature of Witness

E. J. BYRNE

Name of Witness (BLOCK LETTERS)

Solicitor

47 Regent St

Address and Occupation of Witness Kogarah.

Patricia Willard

E A Byrne

Signature of Applicant

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

LODGED BY

MESSRS. BYRNE DUGGAN
SOLICITORS
47 REGENT STREET
KOGARAH NSW 2217

Ref: EJB:PW:16017

Delivery Box Number 160 A

CT	PROBATE No. AND/OR OTHER	DATE OF DEATH	LOCATION OF DOCUMENTS
Pbte	114188/92	16/5/92	Herewith.
		26 OCT 1992	In L.T.O. with
			Produced by

OFFICE USE ONLY

Checked	Passed	REGISTERED - -19
Signed	Extra Fee	

Secondary Directions

Delivery Directions

CT SIGHTED CANC. & RET. S. Prior 23/10/92

Req:R119432 /Doc:DL I896322 /Rev:13-Apr-2010 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 06:29 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

RP13

B 2.00 TRANSFER

Real Property Act, 1900

896322 X

Office of State Revenue use only

$2.00 111193 2904 04 00158534 6/03

(A) **LAND TRANSFERRED**

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

FOLIO IDENTIFIER 4/192614

(B) **LODGED BY**

L.T.O. Box	Name, Address or DX and Telephone
190 Q	Collins Markham Solicitor.
	REFERENCE (max. 15 characters):

(C) **TRANSFEROR** ELIZABETH ANN BYRNE and PATRICIA WILLARD

(D) acknowledges receipt of the consideration of $370,000.00

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

(E) subject to the following **ENCUMBRANCES** 1. ..... 2. ..... 3. .....

(F) **TRANSFEREE**

T	NETA ELIZABETH LAVIE

(G) ~~as joint tenants/tenants in common~~

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATE** .....

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

E. J. BYRNE
Signature of Witness

SOLICITOR
Name of Witness (BLOCK LETTERS)

47 REGENT ST
Address of Witness

KOGARAH

E A Byrne
Patricia Willard
Signature of Transferor

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

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address of Witness

(J. R. MARKHAM)
Solicitor for the Signature of Transferee

☞ INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only)

Req:R119433 /Doc:DL AP699493 /Rev:21-Nov-2019 /NSW LRS /Prt:23-Dec-2021 06:29 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

System Document Identification

Form Number: 01T-e
Template Number: T_nsw16
ELN Document ID: 546854175
ELN NOS ID: 546854177

TRANSFER

New South Wales
Real Property Act 1900

Land Registry Document Identification

AP699493

Stamp Duty: 9703086-001

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

LODGED BY:

Responsible Subscriber:	HENRY WILLIAM LAWYERS PTY LTD ABN 81615850425
Address:	L29, SE 2, 420 George ST Sydney 2000
Telephone:	
PEXA Subscriber Number:	25709
Customer Account Number:	504590N
Document Collection Box:	1W
Client Reference:	HW161381

LAND TITLE REFERENCE

4/192614

TRANSFEROR

NETA ELIZABETH LABI

TRANSFEREE

675 OSHR AT VAUCLUSE PTY LTD ACN 621174098
Registered company

Tenancy: Sole Proprietor

CONSIDERATION

The transferor acknowledges receipt of the consideration of $4,900,000.00

ESTATE TRANSFERRED

FEE SIMPLE

The Transferor transfers to the Transferee the Estate specified in this Instrument and acknowledges receipt of any Consideration shown.

SIGNING FOR TRANSFEROR

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferor.

Party Represented by Subscriber:

NETA ELIZABETH LABI

Signed By: Jacques Phillip Kosmin
Signer Capacity: Practitioner Certifier
PEXA Signer Number: 65243
Digital Signing Certificate Number: 34828

Signed for Subscriber: PARTNERS OF KOSMIN & ASSOCIATES ABN 92379037486

KOSMIN & ASSOCIATES

Req:R119433 /Doc:DL AP699493 /Rev:21-Nov-2019 /NSW LRS /Prt:23-Dec-2021 06:29 /Seq:2 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

Subscriber Capacity: Representative Subscriber
PEXA Subscriber Number: 14803 **Customer Account Number:** 501734
Date: 21/11/2019

SIGNING FOR TRANSFEREE

I certify that:

1. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
2. The Certifier has retained the evidence supporting this Registry Instrument or Document.
3. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.
4. The Certifier has taken reasonable steps to verify the identity of the transferee.

Party Represented by Subscriber:

675 OSHR AT VAUCLUSE PTY LTD

Signed By: Ron Zucker **Signer Capacity:** Practitioner Certifier
PEXA Signer Number: 72759 **Digital Signing Certificate Number:** 55367

Signed for Subscriber: HENRY WILLIAM LAWYERS PTY LTD ABN 81615850425

HENRY WILLIAM LAWYERS PTY LTD

Subscriber Capacity: Representative Subscriber
PEXA Subscriber Number: 25709 **Customer Account Number:** 504590
Date: 21/11/2019

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 4/192614

SEARCH DATE	TIME	EDITION NO	DATE
23/12/2021	5:57 AM	6	6/11/2020

LAND

LOT 4 IN DEPOSITED PLAN 192614
LOCAL GOVERNMENT AREA WAVERLEY
PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND
TITLE DIAGRAM DP192614

FIRST SCHEDULE

675 OSHR AT VAUCLUSE PTY LTD (T AP699493)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AQ536888 MORTGAGE TO BENDIGO AND ADELAIDE BANK LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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Received: 23/12/2021 05:57:59

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
23/12/2021 7:05AM

FOLIO: 1/168877

First Title(s): OLD SYSTEM
Prior Title(s): VOL 3149 FOL 97

Recorded	Number	Type of Instrument	C.T. Issue
12/11/1993		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
21/1/1994	I963507	DISCHARGE OF MORTGAGE	
21/1/1994	I963508	TRANSFER	
21/1/1994	I963509	MORTGAGE	EDITION 1
19/5/1994	U278214	CAVEAT	
22/6/1994	U369819	CAVEAT	
23/8/1994	U551678	WITHDRAWAL OF CAVEAT	
23/8/1994	U551679	WITHDRAWAL OF CAVEAT	
23/8/1994	U551680	DISCHARGE OF MORTGAGE	
23/8/1994	U551681	TRANSFER	
23/8/1994	U551682	MORTGAGE	EDITION 2
10/1/2008	AD690323	MORTGAGE	EDITION 3
29/8/2017	AM682487	CAVEAT	
1/9/2018	AN678863	DEPARTMENTAL DEALING	EDITION 4 CORD ISSUED

*** END OF SEARCH ***

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Received: 23/12/2021 07:05:55

Req:R119471 /Doc:DL I963508 /Rev:09-Apr-2010 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 07:06 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

RP13

B TRANSFER
Real Property Act, 1900

I 963508 L

Office of

(A) **LAND TRANSFERRED**
Show no more than 20 References to Title.
If appropriate, specify the share transferred.

Volume 3149 Folio 97 now 1/168877

(B) **LODGED BY**

L.T.O. Box: 265K.

Name, Address or DX and Telephone: Proctor Services

Reference (max. 15 characters): MJS 736275

(C) **TRANSFEROR** BAMBUSIA HOLDINGS PTY LIMITED (ACN 002 361 551)

(D) acknowledges receipt of the consideration of $1.00

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

(E) subject to the following **ENCUMBRANCES** 1. ..... 2. ..... 3. .....

(F) **TRANSFEREE**

(G) T

RAYMOND LEUNG of 677 Old South Head Road, Vaucluse NSW 2030, interior designer and SUSAN LEUNG of the same address, his wife

as joint tenants/~~XXXXXXXXXXXXXXXX~~

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900

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

The Common Seal of BAMBUSIA HOLDINGS PTY LTD (ACN 002 361 551) was hereunto affixed in accordance with its Articles of Association in the presence of:

~~Signature of Witness~~
~~Name of Witness (BLOCK LETTERS)~~
~~Address of Witness~~

BAMBUSIA HOLDINGS PTY. LTD. A.C.N. 002 361 551 Common Seal

DATE OF EXECUTION 17 August 1993

Secretary

Director ~~Signature of Transferor~~

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

X R.M. Leung
Signature of Witness

X R.M. LEUNG
Name of Witness (BLOCK LETTERS)

X 21K Market Street Sydney
Address of Witness

X R.L.
X S.L.
Signature of Transferee

INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only)

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/168877

SEARCH DATE	TIME	EDITION NO	DATE
23/12/2021	5:57 AM	4	1/9/2018

LAND

LOT 1 IN DEPOSITED PLAN 168877
LOCAL GOVERNMENT AREA WAVERLEY
PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND
TITLE DIAGRAM DP168877

FIRST SCHEDULE

LAURENCE STUART ADELMAN
SUANNE MARY ADELMAN
AS JOINT TENANTS (T U551681)

SECOND SCHEDULE (4 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 U551682 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED
3 AD690323 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED
* 4 AM682487 CAVEAT BY 677 OSHR AT VAUCLUSE PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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Received: 23/12/2021 05:57:56

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
23/12/2021 7:56AM

FOLIO: 1/167942

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3089 FOL 196

Recorded	Number	Type of Instrument	C.T. Issue
18/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
9/5/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
11/6/1998	5047669	NOTICE OF DEATH	EDITION 1
30/9/2004	AA989423	TRANSMISSION APPLICATION	EDITION 2
19/2/2015	AJ272807	TRANSMISSION APPLICATION (DEVISEE,BENEFICIARY,NEXT OF KIN)	EDITION 3
29/8/2017	AM682486	CAVEAT	
23/10/2019	AP611784	WITHDRAWAL OF CAVEAT	
23/10/2019	AP588976	TRANSFER	EDITION 4
29/9/2020	AQ425324	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 5
6/11/2020	AQ536886	MORTGAGE	EDITION 6 CORD ISSUED

*** END OF SEARCH ***

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Received: 23/12/2021 07:56:59

Req:R119548 /Doc:DL AA989423 /Rev:30-Sep-2004 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 07:57 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

Form: 05TA
Licence: 01-08-076
Licensee: Midware Systems
Cameron Gillingham Boyd

TRANSMISSION APPLICATION

New South Wales
Section 93 Real Property Act 1900

AA989423Y

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

STAMP DUTY

Office of State Revenue use only

NEW SOUTH WALES DUTY
29-09-2004 0002210948-001
SECTION 63(C)
DUTY $ **********10.00

(A) **LAND**

Torrens Title
Folio Identifier 1/167942

(B) **REGISTERED DEALING**

Number	Torrens Title

(C) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODE
162V	CAMERON GILLINGHAM BOYD, Solicitors DX 244 SYDNEY Tel: (02) 9232 1577 Reference (optional): C Calleja-20040364	**TA**

(D) **DECEASED REGISTERED PROPRIETOR**

WILLIAM BENJAMIN HANSLOW

(E) **APPLICANT**

NICHOLAS MYLES HANSLOW

(F) The applicant, being entitled as devisee of the will of the deceased registered proprietor (who died on 5 July 2004) pursuant to Probate No. 114096/04 granted on 27 August 2004 to NICHOLAS MYLES HANSLOW (a certified copy of which is lodged herewith) applies to be registered as proprietor of the estate or interest of the deceased registered proprietor in the abovementioned land.

DATE 24 / 9 / 04

(G) I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness: CHARLES CALLEJA

Address of witness: 9 Bligh Street, Sydney.

Certified correct for the purposes of the Real Property Act 1900 by the applicant.

Signature of applicant:

N Hanslow

(H) **CONSENT OF EXECUTOR, ADMINISTRATOR OR TRUSTEE**

I,

of the deceased registered proprietor, consent to this application.

Signature of

Signature of witness:

Name of witness:

Address of witness:

copy P/Bath S/R

Office use only –
Evidence sighted/sighted and returned:

R18

All handwriting must be in block capitals.

Number additional pages sequentially

Req:R119549 /Doc:DL AJ272807 /Rev:24-Feb-2015 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 07:57 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

Form: 03AD
Licence: 05-11-653
Licensee: Softdocs
Cameron Gillingham Boyd

TRANSMISSION APPLICATION

by a Devisee, Beneficiary or Next-of-Kin
New South Wales
Section 93 Real Property Act 1900

AJ272807C

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY — Office of State Revenue use only

Office of State Revenue (NSW)
Client No: 1411509 4173
Duty: $50 Trans No: 8001258001
Asst details:
9.2.15

(A) **TORRENS TITLE** — 1/167942 and Volume 11090 Folio 158 NOW BEING 1/67503

(B) **REGISTERED DEALING**

Number	Torrens Title

(C) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODE
162V	Acc. No. 123093B CAMERON GILLINGHAM BOYD DX 244 SYDNEY Tel: (02) 9232 1577 Reference (optional): C Calleja - 20140472	AD

(D) **DECEASED REGISTERED PROPRIETOR** — NICHOLAS MYLES HANSLOW

(E) **APPLICANT** — MARY BARTOLO

(F) The applicant, being entitled as beneficiary under the will of the deceased registered proprietor (who died on 10 October 2014) pursuant to probate No. 2014/338475 granted on 4 February 2015 to MARY BARTOLO

(a certified copy of which is lodged herewith) apply to be registered as proprietor of the estate or interest of the deceased registered proprietor in the abovementioned land.

DATE 17 February 2015

(G) I certify I am an eligible witness and that the applicant signed this dealing in my presence. [See note* below]

Signature of witness:

Name of witness: Adabel Mak
Address of witness: 60 Pitt Street, Sydney

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

Signature:

Signatory's name: Charles Calleja
Capacity: Solicitor for the applicant

(H) **CONSENT OF EXECUTOR, ADMINISTRATOR OR TRUSTEE**

I,

of the deceased registered proprietor, consent to this application.

Signature of witness:
Name of witness:
Address of witness:

Signature of executor/administrator/trustee:

(I) *This section is to be completed where a notice of sale is required and the relevant data has been forwarded through eNOS.*

The applicant's solicitor certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. [ ] Full Name: ..... Signature: .....

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

Office use only –
Evidence sighted/~~Sighted and returned~~:

CT SIGHTED CANC. & REF. Vol: 11090 Fol: 158

ALL HANDWRITING MUST BE IN BLOCK CAPITALS
Number additional pages sequentially

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/167942

SEARCH DATE	TIME	EDITION NO	DATE
23/12/2021	5:57 AM	6	6/11/2020

LAND

LOT 1 IN DEPOSITED PLAN 167942
LOCAL GOVERNMENT AREA WAVERLEY
PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND
TITLE DIAGRAM DP167942

FIRST SCHEDULE

679 OSHR AT VAUCLUSE PTY LTD (T AP588976)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AQ536886 MORTGAGE TO BENDIGO AND ADELAIDE BANK LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 23/12/2021 05:57:59

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
23/12/2021 8:44AM

FOLIO: 1/666626

First Title(s): OLD SYSTEM
Prior Title(s): VOL 4233 FOL 15

Recorded	Number	Type of Instrument	C.T. Issue
26/3/1998		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
21/5/2020	AQ113811	NOTICE OF DEATH	EDITION 1
1/6/2020	AQ140914	TRANSMISSION APPLICATION (EXECUTOR, ADMINISTRATOR, TRUSTEE)	EDITION 2
9/10/2020	AQ459237	TRANSFER	EDITION 3
6/11/2020	AQ536887	MORTGAGE	EDITION 4 CORD ISSUED

*** END OF SEARCH ***

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Received: 23/12/2021 08:44:44

Req:R119731 /Doc:DL AQ140914 /Rev:01-Jun-2020 /NSW LRS /Prt:23-Dec-2021 08:45 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

Lodger Details

Lodger Code	503131
Name	MURPHY LYONS LAWYERS
Address	L1, 10 DENISON ST BONDI JUNCTION 2022
Lodger Box	1W
Phone	
Email	
Reference	ESTATE RANDO

For Office Use Only

AQ140914

TRANSMISSION APPLICATION

Jurisdiction NEW SOUTH WALES

Privacy Collection Statement

Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar General to collect the information required by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

Land Title Reference

1/666626

Deceased Registered Proprietor

Given Name(s)	ANTONIETTA
Family Name	RANDO
Date of Death	2020-04-01
Pursuant to	Probate No. 2020/00121533
Granted on	2020-05-28

Applicant

Given Name(s)	STEVE
Family Name(s)	TRASSARI
Capacity	EXECUTOR
Given Name(s)	JOHN VINCENT RUSSELL
Family Name(s)	ZAGAME
Capacity	EXECUTOR
Given Name(s)	ANGELA
Family Name(s)	DI SALVO
Capacity	EXECUTOR
Tenancy	JOINT TENANTS

The Applicant applies to be registered as proprietor of the Estate of the deceased registered proprietor as specified in this Instrument.

APPLICANT EXECUTION

The Certifier has taken reasonable steps to verify the identity of the applicant.

The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

The Certifier has retained the evidence supporting this Registry Instrument or Document.

The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of	STEVE TRASSARI
Signer Name	JAMES WILLIAM LYONS
Signer Organisation	JAMES WILLIAM LYONS
Signer Role	PRACTITIONER CERTIFIER
Execution Date	01/06/2020

The Certifier has taken reasonable steps to verify the identity of the applicant.

The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

The Certifier has retained the evidence supporting this Registry Instrument or Document.

The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of	JOHN VINCENT RUSSELL ZAGAME
Signer Name	JAMES WILLIAM LYONS
Signer Organisation	JAMES WILLIAM LYONS
Signer Role	PRACTITIONER CERTIFIER
Execution Date	01/06/2020

Req:R119731 /Doc:DL AQ140914 /Rev:01-Jun-2020 /NSW LRS /Prt:23-Dec-2021 08:45 /Seq:2 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

The Certifier has taken reasonable steps to verify the identity of the applicant.

The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

The Certifier has retained the evidence supporting this Registry Instrument or Document.

The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of	ANGELA DI SALVO
Signer Name	JAMES WILLIAM LYONS
Signer Organisation	JAMES WILLIAM LYONS
Signer Role	PRACTITIONER CERTIFIER
Execution Date	01/06/2020

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/666626

SEARCH DATE	TIME	EDITION NO	DATE
23/12/2021	5:57 AM	4	6/11/2020

LAND

LOT 1 IN DEPOSITED PLAN 666626
LOCAL GOVERNMENT AREA WAVERLEY
PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND
TITLE DIAGRAM DP666626

FIRST SCHEDULE

681 OSHR AT VAUCLUSE PTY LTD (T AQ459237)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AQ536887 MORTGAGE TO BENDIGO AND ADELAIDE BANK LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 23/12/2021 05:57:56

Req:R119785 /Doc:CT 13866-161 CT /Rev:27-Jan-2011 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 08:53 /Seq:1 of 2
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

[redacted]FICATE OF TITLE

NEW SOUTH WALES

[redacted]L PROPERTY ACT, 1900

13866161

Vol. 13866 Fol. 161

EDITION ISSUED

31 5 1979

Appln No 13857

Prior Titles Vol. 6569 Fols. 52, 53 and 54

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

CANCELLED

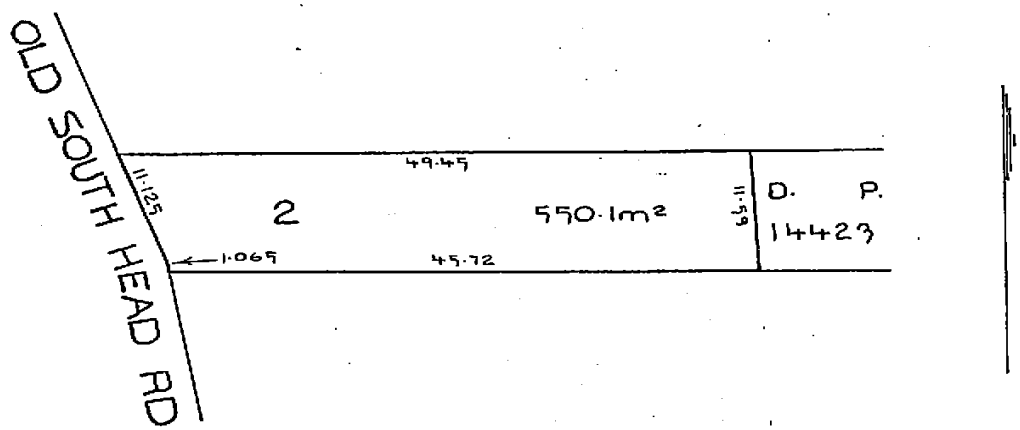
SEE AUTO FOLIO

Registrar General

(Page 1) Vol. 13866 Fol. 161

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



R 157746 GHPY

S

REDUCTION RATIO 1:500

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 316716 in the Municipality of Waverley Parish of Alexandria County of Cumberland being part of 1.821 hectares granted to Francis Mitchell on 30-4-1840.

FIRST SCHEDULE

FRANCIS RHEINBERGER of Vaucluse, Public Servant and RUTH MARY RHEINBERGER his wife, as Joint Tenants.

GRY

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

RG 2/64

Vol. 13866 Fol. 161

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	Signature of Registrar General
CANCELLED				
SEE AUTO FOLIO				

Dual Entitlement CT-filed at Bethany.

R358444M

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	Signature of Registrar General	CANCELLATION	
MH Mortgage	R358444 P	to Defence Service Homes Corporation	8-8-1979			

(Page 2 of 2 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Req:R119785 /Doc:CT 13866-161 CT /Rev:27-Jan-2011 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 08:53 /Seq:2 of 2
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Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
23/12/2021 8:53AM

FOLIO: 2/316716

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 13866 FOL 161

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
28/11/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
28/2/1992	E288806	NOTICE OF DEATH	EDITION 1
30/11/1998	5429456	DISCHARGE OF MORTGAGE	EDITION 2
30/1/2004	AA369290	TRANSFER	
30/1/2004	AA369291	MORTGAGE	EDITION 3
14/5/2007	AD116342	DISCHARGE OF MORTGAGE	
14/5/2007	AD116343	TRANSFER	
14/5/2007	AD116344	MORTGAGE	EDITION 4
12/3/2012	AG863197	DISCHARGE OF MORTGAGE	
12/3/2012	AG863198	TRANSFER	
12/3/2012	AG863199	MORTGAGE	EDITION 5
2/9/2018	AN678864	DEPARTMENTAL DEALING	EDITION 6 CORD ISSUED
6/7/2020	AQ227611	CAVEAT	

*** END OF SEARCH ***

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Received: 23/12/2021 08:53:26

Req:R119786 /Doc:DL AA369290 /Rev:03-Feb-2004 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 08:53 /Seq:1 of 1
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Form: 01T
Release: 2.1
www.lpi.nsw.gov.au

(1)

TRANSFER

New South Wales
Real Property Act 1900

AA369290A

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

STAMP DUTY Office of State Revenue use only

NEW SOUTH WALES DUTY
01-12-2003 0001732922-001
SECTION 18(2)
DUTY $ **********2.00

(A) **TORRENS TITLE** FOLIO IDENTIFIER 2/316716

(B) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODES
985x	Shads Reference: H' Levitt 62046	T TW (Sheriff)

(C) **TRANSFEROR** RUTH MARY RHEINBERGER

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1,150,000.00 and as regards

(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** LARISSA LEVITT

(I) ~~**TENANCY**~~:

(J) **DATE**

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness: Betty E.J. Perry

Name of witness: Betty Perry
Address of witness: 8 Salisbury Street,
Watsons Bay NSW

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: R. Rheinberger

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

Signature:

Signatory's name: STEPHEN ALEXANDER
Signatory's capacity: transferee's solicitor

All handwriting must be in block capitals.

Land and Property Information NSW.

Req:R119787 /Doc:DL AD116343 /Rev:16-May-2007 /NSW LRS /Pgs:ALL /Prt:23-Dec-2021 08:53 /Seq:1 of 1
© Office of the Registrar-General /Src:INFOTRACK /Ref:LS027629_EP - 671-683 Old

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

(1)

TRANSFER

New South Wales
Real Property Act 1900

AD116343U

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the R... by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 95102062 1775
Duty: $2.00 Trans No: 4175410
Asst details: TS

(A) **TORRENS TITLE** 2/316716

(B) **LODGED BY**

Document Collection Box	Name, Address or DX and Telephone	CODES
234	LLPN:123835 CSB Reference: 8140107 18	T TW (Sheriff)

(C) **TRANSFEROR** LARISSA LEVITT

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1,350,000.00 and as regards

(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** JAMES ROBERT HUDSPITH AS TO 20% and MARIA DEL MAR NUNEZ BELTRAN AS TO 80%

(I) **TENANCY:** Tenants in Common

DATE 27.04.2007

(J) I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness: Stephen Alexander
Address of witness: Level 8, 155 King Street
Sydney NSW 2000

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: L. Levitt

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

Signature:

Signatory's name: RICHARD ANTHONY WATSON
Signatory's capacity: transferee's solicitor

17

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/316716

SEARCH DATE	TIME	EDITION NO	DATE
23/12/2021	5:57 AM	6	2/9/2018

LAND

LOT 2 IN DEPOSITED PLAN 316716
LOCAL GOVERNMENT AREA WAVERLEY
PARISH OF ALEXANDRIA COUNTY OF CUMBERLAND
TITLE DIAGRAM DP316716

FIRST SCHEDULE

MARIA DEL MAR NUNEZ BELTRAN (T AG863198)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AG863199 MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
* 3 AQ227611 CAVEAT BY 683 OSHR AT VAUCLUSE PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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APPENDIX E

DATA QUALITY OBJECTIVES

INTRODUCTION

The Data Quality Objectives (DQOs) process was used to define the type, quantity and quality of the data needed to support decisions relating to the environmental condition of a site (reference 1). The process consists of seven steps, with the output from each step influencing the choices that will be made later in the process.

According to USEPA (reference 2), DQOs are qualitative and quantitative statements, derived from the first six steps of the process, that:

- ◊ Clarify the study objective,
- ◊ Define the most appropriate type of data to collect,
- ◊ Determine the most appropriate conditions from which to collect the data, and
- ◊ Specify tolerable limits on decision errors which will be used as the basis for establishing the quantity and quality of data needed to support the decision.

The DQOs are then used to develop a scientific and resource-effective data collection design.

STEP 1 - STATE THE PROBLEM

The problem is the potential for the site to be impacted by contamination caused by past activities undertaken on or adjacent to the site, at levels more than those permissible for the proposed land-use and which could impact upon anticipated receiving environments and the health of current/future users of the site.

STEP 2 - IDENTIFY THE DECISION STATEMENT

The decisions to be made based on the results of the investigation are as follows:

- ◊ Is there sufficient information on the distribution and characteristics of soil and fill to properly characterise soil at the site?
- ◊ Does the dataset adequately characterise the site for the purpose of assessing the suitability of the site for the proposed land uses and (if required) remedial options,
- ◊ Is the dataset sufficient to enable the preparation of defensible RAP for the site,

- ◊ Do the concentrations of soil (fill and natural soil) exceed acceptable levels for the proposed land-use?
- ◊ Are there any aesthetic issues relating to the fill, natural soils and groundwater at the site?
- ◊ Are the data reliable?

STEP 3 - IDENTIFY INPUTS TO THE DECISION

The following information inputs are required to resolve the decision statement:

- ◊ A review of the environmental and physical setting in which the site lies, including geology, hydrogeology and topography,
- ◊ Review of the site's history to research potential contaminating activities on the site or on nearby sites,
- ◊ Detailed site inspection for sources of potential contamination,
- ◊ The drilling of boreholes in a probabilistic (random) sampling pattern across accessible areas of the site (subject to access and utility constraints) while also conducting judgemental sampling targeting any areas of concern (e.g. location of former structures),
- ◊ Collection of environmental soil samples using appropriate methods,
- ◊ Analysis of soil samples for the contaminants of concern identified by the history search and site inspection. Analytical laboratory to be NATA accredited for the testing performed,
- ◊ Analysis of any surface or buried fibro samples to confirm the presence of asbestos fibres,
- ◊ Comparison of the results with relevant Site Assessment Criteria (SAC) as defined in the main body of the report, and
- ◊ Accurate measurements of sample locations to allow for accurate mapping and contouring of contamination (if identified).

STEP 4 - DEFINE THE BOUNDARIES OF THE STUDY

The site covers an approximate area of approximately 4,350m^2 and encompasses the following legal allotments:

- Lot A in Deposited Plan (DP) 324744
- Lot B in DP 324744
- Lot 2 in DP 10314
- Lot 1 in DP 169310
- Lot 4 in DP 192614
- Lot 1 in DP 168877
- Lot 1 in DP 167942
- Lot 1 in DP 666626
- Lot 2 in DP 316716

The lateral extent of the study is the boundaries of the site (as depicted on **Figure 2**). The horizontal extent of the study is approximately 1.0m into the natural soil profile.

STEP 5 - DEVELOP A DECISION RULE

The decision rules for this investigation are as follows:

- If it is determined that the data generated through this investigation are reliable and adequately characterise soil conditions at the site, the data will be compared against the adopted Site Assessment Criteria (SAC),
- If all the data meets the adopted SAC, then the site will be considered suitable for the proposed development,
- If the data do not meet the adopted SAC, then further investigations or the development of an RAP will be recommended as a basis for making the site suitable for the proposed development. Further investigations may include:
  - Additional soil or groundwater sampling points to delineate impacts,
  - Analysis of soil and/or groundwater for additional analytes/CoPC,
  - Undertaking soil vapour investigations, and/or
  - Undertaking a human health and/or ecological risk assessment to assess site suitability and, if not suitable, assess the requirement for remediation and/or management.

If it is determined that the data generated through this investigation are not reliable and/or do not suitably characterise the site, then further investigations may be recommended prior to comparison against the SAC.

STEP 6 - SPECIFY ACCEPTABLE LIMITS ON DECISION ERRORS

Acceptable limits on decision errors must be applied based on the Data Quality Indicators (DQIs) pertaining to precision, accuracy, representativeness, comparability and completeness. The limits on decision errors for the study are as follows:

1. Incorrectly deciding that levels are below an assessment criterion (Type I error). The consequence of this error is that there may be a conclusion that material conforms to a lower waste classification than is actually the case. A Type I error rate of 5% is nominated for the study;
2. In applying statistical analysis of a data set where applicable/sufficient data set exists (i.e. not for judgemental sampling):
    - Exclude any individual sample with a concentration that exceeds 250% of SAC. This data point is to be regarded as an 'outlier';
    - Tests that assume a normal distribution will only be used if the coefficient of variance is less than 1.2;
    - The standard deviation of a sample population will not exceed 50% of the Alignment assessment criteria.
3. A robust quality assurance and quality control (QA/QC) program will be implemented with appropriate sampling and analytical density to satisfy the objective of the study.

Decision errors may result in:

1. Basing decisions on unreliable data and consequently making incorrect decisions regarding land use suitability;
2. Basing decisions on unreliable data and inappropriately defining a remedial or management strategy.

The Data Quality Indicators (DQIs) are described in Section 7 and Appendix E of the main report while the adopted SAC are described in Section 8 of the main report.

STEP 7 - OPTIMISING THE DESIGN FOR OBTAINING DATA

The purpose of this step is to identify a resource-effective data collection design for generating data that are expected to satisfy the DQOs.

To ensure the design satisfies the DQOs a comprehensive Quality Assurance and Quality Control Plan will be implemented.

References

1. NSW EPA, 2017: New South Wales Environment Protection Authority (2017): Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (3rd edition).
2. USEPA, 2000: *Guidance for Data Quality Objectives Process*. EPA QA/G-4.

APPENDIX F

GEE DSI BOREHOLE LOGS

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH301**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL73m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger					SP	Fill	**FILL / TOPSOIL**- Sand, dark grey, fine to medium grained, with roots.	m	SM060922-01 /100 0.05-0.2m	
					SP	Natural	**SAND**- grey, fine to medium grained. become light grey from 0.6m.	m	SM060922-02 0.2-0.4m SM060922-03 1.0-1.2m	
		1.0	72.0				**Hole Terminated at 1.20m** Target reached			

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:42 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH302**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL72m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Pebbles			
Hand Auger					SP	Fill	**FILL**- Pebbles (20mm). **FILL / TOPSOIL**- Sand, dark brown, brown, fine to medium grained, trace gravel and roots.	m	SM060922-04 0.05-0.2m	
					SP	Natural	**SAND**- grey, fine to medium grained. become light grey from 0.6m.	m	SM060922-05 0.3-0.5m SM060922-06 1.0-1.2m	
		1.0	71.0				**Hole Terminated at 1.20m** Target reached			

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:43 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH303**
Hole Depth: **1.10 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL71.7m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger			71.0		SP	Fill	**FILL**- Sandy Gravel, dark grey, medium to coarse gravel and fine to medium sand.	m	SM060922-07 0.05-0.2m	
							Brick Paver At 0.4m.		SM060922-08 0.7-0.8m	
		1.0			SP	Natural	**SAND**- grey, fine to medium grained.	m	SM060922-09 0.9-1.0m	
							Hole Terminated at 1.10m Target reached			bore partially collapsing at 1.1m

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:44 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH304**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL73.3m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger			73.0		SP	Fill	**FILL**- Sand, dark brown, grey, fine to medium grained, trace silt with brick, concrete.	m	SM060922-10 / 101 0.05-0.2m	
		1.0			SP	Natural	**SAND**- grey, fine to medium grained. become pale grey from 0.8m.	m	SM060922-11 0.5-0.7m SM060922-12 1.0-1.2m	
			72.0				**Hole Terminated at 1.20m** Target reached			

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:45 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH305**
Hole Depth: **1.10 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL73m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger					SP	Fill	**FILL / TOPSOIL**- Sand, brown, fine to medium grained, with silt, trace fine to medium gravels and roots.	m	SM060922-13 0.05-0.2m	
		1.0	72.0		SP	Natural	**SAND**- grey, fine to medium grained, trace roots. become dark brown / brown at 0.9m.	m	SM060922-14 0.5-0.7m SM060922-15 0.9-1.1m	
		2.0	71.0				**Hole Terminated at 1.10m** Target reached			

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22** Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:45 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH306**
Hole Depth: **1.30 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL71.85m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Brick			
Hand Auger						Fill	**FILL**- Brick Paver (50mm).			
					GP	Fill	**FILL**- Sandy Gravel, brown, fine to coarse sand and fine to coarse gravel, with roots.	m	SM060922-16 0.05-0.25m	
		1.0	71.0		SP	Natural	**SAND**- brown, fine to medium grained.	m	SM060922-17 0.5-0.7m	
									SM060922-18 1.2-1.3m	
		2.0	70.0				**Hole Terminated at 1.30m** Target reached			

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:46 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH307**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL73.2m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Concrete			
Hand Auger						Fill	**CONCRETE (60mm)**.			
			73.0		SP	Fill	**FILL**- Sand, grey, fine to medium grained, with some ceramic fragment.	m	SM060922-19 / 102 0.06-0.2m	
		1.0	72.0		SP	Natural	**SAND**- orange-brown, fine to medium grained. become light orange-brown from 0.7m.	d	SM060922-20 0.3-0.5m SM060922-21 1.0-1.2m	
		2.0					**Hole Terminated at 1.20m** Target reached			

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:47 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH308**
Hole Depth: **1.00 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL73m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Concrete			
Hand Auger						Fill	**CONCRETE (60mm)**.			
					SP	Fill	**FILL**- Sand, grey, fine to medium grained, with trace ceramic and sandstone fragment.	m	SM060922-22 / 103 0.06-0.2m	
					SP	Natural	**SAND**- orange-brown, fine to medium grained.	m	SM060922-23 0.3-0.5m	
		1.0	72.0				become light orange-brown from 0.6m.			
		2.0	71.0				**Hole Terminated at 1.00m** Target reached			

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:47 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH309**
Hole Depth: **1.10 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL71.5m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Brick			
Hand Auger						Fill	**BRICK**.			
							CONCRETE.			
					SP		**SAND**- grey, brown, with fine to coarse gravel.	m	SM060922-27 0.15-0.3m	
			71.0		SP	Natural	**SAND**- pale grey, fine to medium grained.	m	SM060922-28 0.3-0.5m	
		1.0					become dark orange / brown from 0.7m to 0.9m.		SM060922-29 0.7-0.9m	
							become orange-brown from 0.9m.			
			70.0				**Hole Terminated at 1.10m** Target reached			
		2.0								

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:48 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH310**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL71.85m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger					SM	Fill	**FILL / TOPSOIL**- Silty Sand, dark grey, with trace roots and gravel.	m	SM060922-24 0.05-0.2m	
		1.0	71.0		SP	Natural	**SAND**- grey, fine to medium grained. become pale grey from 0.7m.	m	SM060922-25 0.3-0.5m SM060922-26 1.0-1.2m	
		2.0	70.0				**Hole Terminated at 1.20m** Target reached			

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:49 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH311**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL69.8m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger					SP	Fill	**FILL**- Gravelly Sand, brown, fine to medium grained, with fine to coarse gravel, trace roots.	m	SM060922-30 0.05-0.2m	
			69.0		SP	Natural	**SAND**- brown, fine to medium grained.	m	SM060922-31 0.3-0.5m	
		1.0							SM060922-32 1.0-1.2m	
			68.0				**Hole Terminated at 1.20m** Target reached			
		2.0								

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:49 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH312**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL66.8m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger					SP	Fill	**FILL / TOPSOIL**- Sand, dark grey, fine to medium grained, trace roots.	m	SM060922-33 0.05-0.2m	
			66.0		SP	Natural	**SAND**- grey, fine to medium grained. become pale grey from 0.6m.	m	SM060922-34 0.3-0.5m	
		1.0							SM060922-35 1.0-1.2m	
			65.0				**Hole Terminated at 1.20m** Target reached			
		2.0								

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:50 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH313**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL67m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger					SP	Fill	**FILL / TOPSOIL**- Sand, dark grey, fine to medium grained, trace roots.	m	SM060922-36 0.05-0.2m	
					SP	Natural	**SAND**- grey, fine to medium grained. become pale grey from 0.6m.	m	SM060922-37 0.3-0.5m SM060922-38 1.0-1.2m	
		1.0	66.0							
		2.0	65.0				**Hole Terminated at 1.20m** Target reached			

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:51 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH314**
Hole Depth: **0.95 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL71.25m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Concrete			
Hand Auger							**CONCRETE (100mm)**.			
			71.0		SP	Fill	**FILL**- Sand, grey, fine to medium grained, with ceramic, tile fragments and brick, concrete.	m	SM060922-39 0.10-0.3m SM060922-40 0.4-0.6m SM060922-41 0.7-0.9m	
		1.0	70.0				**Hole Terminated at 0.95m** Target reached			Refusal on a brick at 0.95m
		2.0								

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:51 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH315**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **06-SEP-22** Ground Level: **RL72.5m** (approx)
Drill Method: **Hand Auger** Date Completed: **06-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger					SM	Fill	**FILL / TOPSOIL**- Silty Sand, dark grey, fine to medium grained, with roots.	m	SM060922-42 0.05-0.2m	
		1.0	72.0		SP	Natural	**SAND**- grey, fine to medium grained, trace roots. become orange-brown from 0.8m.	m	SM060922-43 0.3-0.5m SM060922-44 1.0-1.2m	
		2.0	71.0				**Hole Terminated at 1.20m** Target reached			

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **06-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:52 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH316**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **07-SEP-22** Ground Level: **RL67.5m** (approx)
Drill Method: **Hand Auger** Date Completed: **07-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger					SP	Fill	**FILL / TOPSOIL**- Gravelly Sand, brown, fine to coarse gravel and fine to medium sand.	m	SM070922-45 0.05-0.2m	
			67.0							
					SP	Natural	**SAND**- grey, brown, fine to medium grained.	m	SM070922-46 0.6-0.8m	
		1.0					become pale grey from 1m.		SM070922-47 1.0-1.2m	
			66.0				**Hole Terminated at 1.20m** Target reached			
		2.0								

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **07-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:53 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH317**
Hole Depth: **1.20 m**
Sheet: **1 of 1**

Project Name: **Stage 2 DSI** Project Number: **G21071VAU**
Location / Site: **671-683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **07-SEP-22** Ground Level: **RL66.25m** (approx)
Drill Method: **Hand Auger** Date Completed: **07-SEP-22** Latitude: **----------**
Equipment: **Manual** Longitude: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Grass			
Hand Auger			66.0		SP	Fill	**FILL / TOPSOIL**- Gravelly Sand, dark grey, fine to medium sand and fine to coarse gravel.	m	SM070922-48 0.05-0.2m	
		1.0	65.0		SP	Natural	**SAND**- grey, fine to medium grained.	m	SM070922-49 0.5-0.7m SM070922-50 1.0-1.2m	
		2.0					**Hole Terminated at 1.20m** Target reached			

Moisture	
D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Stephen McCormack** Date: **07-Sep-22**
Checked By: **Stephen McCormack** Date: **08-SEP-22**

GEE DAVIES BH LOG G21071VAU.GPJ GEE LOG 2.GDT 13-9-22 6:07:53 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH401**
Hole Depth: **1.00 m**
Sheet: **1 of 1**

Project Name: **Contamination Investigation**
Project Number: **E23026VAU**
Location / Site: **669 - 683 Old South Head Road, Vaucluse NSW**
Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering**
Date Started: **31/10/2023**
Ground Level: **RL71.9m** (approx)
Drill Method: **Hand Auger**
Date Completed: **31/10/2023**
Easting: ----------
Equipment: **Manual**
Northing: ----------

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Fill			
Hand Auger					SP	Fill	**FILL**- Sand, brown, fine to medium grained, trace fine to coarse gravel, with anthropogenic inclusions (metal bolt, nails, crushed concrete, glass).	dp	ZZ311023-01/100 0.05-0.20m	
			71.0		SP	Natural	**SAND**- grey, white, fine to medium grained.	m	ZZ311023-02 0.5-0.6m	
		1.0								
			70.0				**Hole Terminated at 1.00m** Target Reached			Borehole dry upon completion
		2.0								

Moisture

D	Dry
Dp	Damp
SM	Slightly Moist
M	Moist
VM	Very Moist
W	Wet
Sd	Saturated

Additional Comments

Logged By: **Zachary Ziesel** Date: **31/10/2023**
Checked By: **Stephen McCormack** Date: **10/11/2023**

GEE DAVIES BH LOG E23026VAU.GPJ GEE.GDT 16/11/23 2:32:40 PM

Borehole Log Report

Geo Environmental Engineering Pty Ltd
82 Bridge Street
Lane Cove NSW 2066
T 02 9420 3361

Hole ID. **BH402**
Hole Depth: **1.00 m**
Sheet: **1 of 1**

Project Name: **Contamination Investigation** Project Number: **E23026VAU**
Location / Site: **669 - 683 Old South Head Road, Vaucluse NSW** Client: **Blare Management**

Drilling Company: **Geo Environmental Engineering** Date Started: **31/10/2023** Ground Level: **RL71.9m** (approx)
Drill Method: **Hand Auger** Date Completed: **31/10/2023** Easting: **----------**
Equipment: **Manual** Northing: **----------**

Method	Water Level	Depth (m)	RL (m)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests ID No.	Observations / Comments
							Surface: Fill			
Hand Auger					SP	Fill	**FILL**- Sand, grey, fine to medium grained, trace fine to medium gravel and rootlets, some anthropogenic material noted (foam, timber, plastic,).	d	ZZ311023-03 0.05-0.2m	
					SP	Natural	**SAND**- grey/white, fine to medium grained.	m	ZZ311023-04/101 0.4-0.5m	
		1.0	71.0				turn orange brown, at 0.6m.		ZZ311023-05 0.9-1.0m	
		2.0	70.0				**Hole Terminated at 1.00m** Target Reached			Borehole dry upon completion

Moisture		Additional Comments
D	Dry	
Dp	Damp	
SM	Slightly Moist	
M	Moist	
VM	Very Moist	
W	Wet	
Sd	Saturated	

Logged By: **Zachary Ziesel** Date: **31/10/2023** Checked By: **Stephen McCormack** Date: **10/11/2023**

GEE DAVIES BH LOG E23026VAU.GPJ GEE.GDT 16/11/23 2:32:41 PM

Geo Environmental Engineering
82 Bridge Street
Lane Cove NSW 2066
E info@geoenvironmental.com.au

Log Report Legen

MATERIAL SYMBOL


FILL


CONCRETE


ASPHALT


TOPSOIL


ORGANICS


ESTUARINE MUD


CLAY


SAND


SILT


GRAVEL


Sandy CLAY


Clayey SAND


Clayey SILT


Clayey GRAVEL


Silty CLAY


Silty SAND


Sandy SILT


Sandy GRAVEL


Gravelly CLAY


Gravelly SAND


Gravelly SILT


Silty GRAVEL


CLAY & SAND


SAND & CLAY


SILT & CLAY


GRAVEL & CLAY


CLAY & SILT


SAND & SILT


SILT & SAND


GRAVEL & SAND


CLAY & GRAVEL


SAND & GRAVEL


SILT & GRAVEL


GRAVEL & SILT


Sandy Silty CLAY


Clayey Silty SAND


Sandy Clayey SILT


Sandy Clayey GRAVEL


Silty Sandy CLAY


Silty Clayey SAND


Clayey Sandy SILT


Clayey Sandy GRAVEL


Sandy Gravelly CLAY


Clayey Gravelly SAND


Sandy Gravelly SILT


Silty Clayey GRAVEL


Silty Gravelly CLAY


Silty Gravelly SAND


Clayey Gravelly SILT


Clayey Silty GRAVEL


Gravelly Silty CLAY


Gravelly Silty SAND


Gravelly Clayey SILT


Sandy Silty GRAVEL


Gravelly Sandy CLAY


Gravelly Clayey SAND


Gravelly Sandy SILT


Silty Sandy GRAVEL


SANDSTONE


SHALE


GRANITE


BASALT


SHALE / SANDSTONE


PORCELLANITE


GNEISS


SHALE / CLAYSTONE


MUDSTONE


CLAYSTONE


MUDSTONE / CLAYSTONE


SHALE / SILTSTONE


IRONSTONE

ATER LEVELS


Encountered Water

Standing Water

ABBREVIATIONS

PT	Pushtube
SFA	Solid Flight Auger
PWS	Percussion Window Sampler
HA	Hand Auger
HFA	Hollow Flight Auger

ELL RAPHICS


Cuttings


Bentonite


Screen


Gravel Pack


Grout


Cave-in

GEE LEGEND * * 29/10/09 5:04:07 PM

APPENDIX G

QUALITY ASSURANCE ASSESSMENT REPORT

G1. INTRODUCTION

A detailed Quality Assurance (QA) assessment, including the analysis of Quality Control (QC) samples, was carried out by GEE to determine the reliability of field procedures and analytical results.

G2. QUALITY ASSURANCE

Quality Assurance (QA) involves all of the actions, procedures, checks and decisions undertaken to ensure the representativeness and integrity of samples and accuracy and reliability of analysis results (reference 1).

In accordance with AS4482.1 (reference 2), a series of QA procedures were integrated within the sampling and analysis plan and included:

- ◊ The collection of Quality Control (QC) samples.
- ◊ The use of standardised field sampling forms developed by GEE.
- ◊ Documentation of calibration and use of field instruments.

To ensure QA in the field, samples were collected by experienced and trained personnel using appropriate methods detailed herein, including appropriate sample handling, containment and transport, and calibrated equipment. Additionally, QC samples were collected and analysed as discussed in Section G3.

To ensure QA in the laboratory, GEE used laboratories that are NATA accredited for the analytical tests carried out, therefore it is reasonable for GEE to rely on the laboratories to be proficient in all tests conducted. This encompasses all actions, procedures, checks and decisions undertaken, to ensure the accuracy and reliability of the analysis results. As part of the laboratory QA, QC samples were analysed with each batch of samples as part of this investigation as required by NATA. A discussion of the laboratory QC samples analysed as part of this investigation is provided in Section G3.3.2.

G3. QUALITY CONTROL

QC involves those parts of QA which serve to monitor and measure the effectiveness of QA procedures. QC samples assess sample integrity, accuracy and precision and can be separated into field and laboratory QC.

G3.1 DEFINITIONS

Table G1 provides a description and objective of each of the field and laboratory QC samples used during this investigation.

Table G1: QC Sample Types, Descriptions and Recommended Frequency of Analysis

Type	Description	Purpose	Recommended Frequency
	FIELD QC SAMPLES		
Blind Replicate	A sample collected at the same time and from the same sampling point as the corresponding primary sample[1], and analysed at the same laboratory. Blind replicates are collected, preserved, stored, transported and analysed in the same manner as the primary sample, with the laboratory having no knowledge of the source of the replicate sample. The assessment of blind replicates samples is undertaken by calculating the Relative Percent Difference (RPD) which is defined as: $RPD\ (\%) = 100 \times \frac{\text{Result No. 1 – Result No. 2}}{\text{Mean Result}}$	Used to evaluate total sampling and analysis precision and, in the case of soil samples, sample variability.	In accordance with AS4482.1 (reference 2) and NEPM (reference 3) it is recommended that 1 blind replicate sample is collected for every 20 primary samples.
Split Duplicate	A sample collected at the same time and from the same sampling point as the corresponding primary sample, and analysed at a separate laboratory. Split duplicates are collected, preserved, stored, transported and analysed in the same manner as the primary sample, with the laboratories having no knowledge of the purpose of the sample. The assessment of split duplicates samples is undertaken by calculating the Relative Percent Difference (RPD) which is defined as: $RPD\ (\%) = 100 \times \frac{\text{Result No. 1 – Result No. 2}}{\text{Mean Result}}$	Used to provide a check on the analytical proficiency of the laboratories and hence precision and comparability.	In accordance with AS4482.1 (reference 2) and NEPM (reference 3) it is recommended that 1 split duplicate sample is collected for every 20 primary samples.

[1] Primary samples are the original representative samples of soil or groundwater collected for analysis to determine aspects of their chemical composition. Primary samples are the original sample taken from a particular location and other samples from the same location are duplicates, replicates or splits.

Table G1 Continued

Type	Description	Purpose	Recommended Frequency
Trip Blank	Trip blanks are laboratory supplied test samples of analyte-free media (either washed sand or de-ionised water) which remain in the sample storage eskies during sampling activities and returned to the laboratory unopened. For soil sampling programmes, the trip blank consists of acid-washed quartz sand that has been heated to 400ºC. For water sampling programs trip blanks comprise pre-washed glass vials containing distilled or de-ionised water with appropriate preservatives. The USEPA has shown that cross-contamination only occurs with volatile organics (reference 4), therefore, trip blanks are only analysed for volatile organics.	Used to measure cross-contamination during sampling, transport, sample preparation and analysis.	Industry standard is 1 trip blank per batch of primary samples.
Trip Spike	Trip spikes, like trip blanks, are supplied by the primary laboratory using analyte-free media (either washed sand or de-ionised water) and remain in the sample storage eskies during sampling activities and returned to the laboratory unopened. The sample media, however, is spiked with BTEX. For water sampling programmes the BTEX concentration is known and standardised by each laboratory, while for soil sampling programmes the exact spike concentration is not known, rather two identical jars of sand are spiked the same concentration with one sample becoming the trip-spike and the other becoming a control sample, which remains in a refrigerator at the laboratory. The trip spike is analysed after returning from the field and the % recovery of the known spike (for water sampling programs), or of the control sample (for soil sampling programs), is calculated.	Used to monitor VOC losses during transit.	Industry standard is 1 trip spike per batch of primary samples where volatile concentrations are being measured.
Rinsate	This is a sample of distilled or de-ionised water poured over the surface of a decontaminated piece of sampling equipment and collected in appropriate laboratory supplied sample containers. The sample is then analysed for contaminants of concern analysed as part of the investigation.	Provides an assessment of potential cross contamination of chemicals from sampling equipment caused by inadequate decontamination procedures.	In accordance with AS4482.1 – (reference 2) one rinsate sample should be collected each day per piece of sampling equipment and.

Table G1 Continued

Type	Description	Purpose	Recommended Frequency
	LABORATORY QC SAMPLES		
Laboratory Duplicate	Laboratory duplicates are field samples which are prepared and analysed in the same manner twice. The assessment of laboratory duplicates is undertaken by calculating the (RPD) which is defined as: $\text{RPD (\%)} = 100 \times \frac{\text{Result No. 1 – Result No. 2}}{\text{Mean Result}}$	Determines analytical precision for a sample batch	NATA specifies 1 per 10 samples for trace element and inorganic analysis
Laboratory Control Sample (LCS)	Laboratory Control Samples (LCS) are analyte-free matrices (de-ionised water or clean sand) spiked with a known concentration of target analytes and carried through the entire preparation and analysis. Assessment of LCS is undertaken by calculating the percent recovery (%R) of the spike which is defined as: $\text{Percent Recovery (\%R)} = 100 \times \frac{\text{Spikes Sample Result (SSR) – Sample Result (SR)}}{\text{Concentration of Spike Added (SA)}}$	Determines analytical accuracy and precision for a batch of samples	NATA specifies 1 per batch of up to 20 samples
Surrogates	Surrogates are organic compounds added to field samples and laboratory QC samples prior to preparation. They are similar in chemical behaviour to the target analytes and are not expected to be present in samples from part of the laboratory QC for organic analyses, and are used to indicate the presence of sample specific interferences. The surrogate is added at the extraction stage then analysed with the batch of samples. Like LCSs, surrogates are assessed by calculating the percent recovery (%R), although the definition is slightly different as shown below: $\text{Percent Recovery (\%R)} = 100 \times \frac{\text{Spiked Sample Result (SSR)}}{\text{Concentration of Spike Added (SA)}}$	Used to demonstrate that the surrogate does not interfere with the target analytes, therefore determines analytical accuracy for each sample	Added to every blank, field and laboratory QC sample
Matrix Spikes	Field samples spiked with a known concentration of a target analytes and carried through the entire preparation and analysis. Matrix spike samples are assessed by calculating the percent recovery (%R) of the spike which is defined as: $\text{Percent Recovery (\%R)} = 100 \times \frac{\text{Spikes Sample Result (SSR) – Sample Result (SR)}}{\text{Concentration of Spike Added (SA)}}$	Determine the effects of matrix interferences on analytical accuracy of a sample.	Performed at least 1 per batch of up to 20 samples.
Method Blank	Method blanks are an analyte-free matrices (reagent water or clean sand) that is carried through the entire preparation and analysis.	Establishes that laboratory contamination does not cause false positives.	Prepared with every batch of up to 20 samples for all organic and inorganic analyses.

G3.2 CRITERIA / ACCEPTABLE RANGE

The QC Acceptance Criteria adopted for this investigation is provided in Table G2 and is in general accordance with the Table 4 of AS4482.1 (reference 2) and NEPM (reference 3).

Table G2: QC Sample Acceptance Criteria

QC Sample	Criteria / Acceptable Range
FIELD QC SAMPLES	
Blind Replicate & Split Duplicate	RPD < 50 % When average concentration is > 10 x LOR/PQL[2] RPD < 75 % When average concentration is 5 to 10 x LOR/PQL RPD < 150 % When average concentration is < 5 x LOR/PQL
Trip Blank	Analytical Result < LOR/PQL
Trip Spike	± 30%
Rinsate	Analytical Result < LOR/PQL
LABORATORY QC SAMPLES	
Laboratory Duplicates	RPD < 30 % When average concentration is > 10 x LOR/PQL RPD < 50 % When average concentration is 4 to 10 x LOR/PQL RPD < 100 % When average concentration is< 4 x LOR/PQL
Laboratory Control Samples	%R of 70 – 130% (General analytes) %R of 50 – 130% (Phenols) %R of 60 – 130% (OCP/OPPs) %R of 62 – 130% (Chromium)
Surrogates	%R of 70 – 130% (General analytes) %R of 50 – 130% (Phenols) %R of 60 – 130% (OCP/OPPs)
Matrix Spikes	%R of 70 – 130% (General analytes) %R of 50 – 130% (Phenols) %R of 60 – 130% (OCP/OPPs) %R of 62 – 130% (Chromium)
Method Blanks	Analytical Results < LOR/PQL

If data do not meet the QC Acceptance Criteria, then a judgement is made as to whether the exceedance is critical in relation to the suitability of the data set. Otherwise, the following steps will be taken:

- ◊ Request that the laboratory re-check or even re-analyse the sample.
- ◊ Inspect the sample for anomalies which may be causing the failure.
- ◊ If necessary, undertake additional sampling and analyses.

[2] Both the LOR and PQL are interchangeable terms used by laboratories and is defined as the lowest concentration that can be reliably achieved within specific limits of precision and accuracy during routine laboratory operating conditions (reference 5).

G3.3 RESULTS

G3.3.1 Field QC Samples

Field QC samples collected and analysed as part of this investigation comprised:

- ◊ Three blind replicates (SM060922-101, SM060922-103 & ZZ311023-100)
- ◊ Two split duplicate (SM060922-100 & ZZ311023-101)
- ◊ One trip blank per batch of samples (labelled 'trip blank')
- ◊ One trip spike per batch of samples (labelled 'trip spike)
- ◊ One Rinsate from the hand auger per sampling event (SM060922-R1 & ZZ311023-R)

Tabulated results are presented at the conclusion of this Appendix. Table G3 provides a summary of the frequency of QC samples and lists results which do not meet the criteria established in Table G2.

Table G3: QC Sample Acceptance Criteria - Soil

Type	Frequency Conducted	Results Not Meeting the Criteria
Blind Replicates	Metals - 3 per 40 samples (7.5%)	--
	TRH/BTEXN - 3 per 26 samples (11.5%)	--
	PAHs - 3 per 38 samples (7.9%)	PAHs (some elevated RPDs)
	OCPs / PCBs – 2 per 10 samples (20.0%)	--
Split Duplicate	Metals - 3 per 40 samples (7.5%)	--
	TRH/BTEXN - 3 per 26 samples (11.5%)	--
	PAHs - 3 per 38 samples (7.9%)	--
	OCPs / PCBs – 2 per 10 samples (20.0%)	--
Rinsate	Hand Auger	--
Trip Spike	1 per sample batch	--
Trip Blank	1 per sample batch	--

In the blind replicate samples there were some slightly elevated RPDs for some PAH compounds, but this is attributed to the heterogeneous nature of the sample rather than an error with the lab's precision. Regardless, GEE has adopted to highest concentrations when assessing contamination risk and when making conclusions about the site.

G3.3.2 Laboratory QC

Laboratory QC results are provided in the laboratory reports while a summary of the results which exceeded the acceptance criteria is provided in Table G4.

Table G4: QC Sample Acceptance Criteria

Type	Results Exceeding Criteria
Laboratory Duplicates	--
Laboratory Control Samples	--
Surrogates	--
Matrix Spikes	--
Method Blanks	--

G4. DATA QUALITY ASSESSMENT

In accordance with reference 1, Data Quality Indicators (DQIs), specifically, precision, accuracy, representativeness, completeness and comparability, were used to assess the reliability of field procedures and analytical results.

G4.1 PRECISION

This is the measure of the variability (or reproducibility) of the data. In the field precision is achieved by using standard operating procedures which were adopted by GEE during this investigation. For laboratory analysis precision is assessed using blind replicates and trip spikes. The measured RPDs for the blind replicate samples and split samples were considered acceptable as were the analytical results for the trip spike.

G4.2 ACCURACY

Accuracy is a measure of the closeness of a measurement to the true parameter value. In the field, accuracy is achieved by using standard operating procedures which were adopted by GEE. For laboratory analysis, accuracy is assessed using tip blanks, rinsate blanks, method blanks, matrix spikes, surrogates and laboratory control samples. Considering that these QC samples were of an acceptable standard, GEE considers the laboratory data set to be accurate.

G4.3 REPRESENTATIVENESS

This is the confidence (expressed qualitatively) that the data are representative of each media present on the site. This is achieved in the field and laboratory by using an adequate number of sampling points to characterise the site and ensuring



that the samples collected were representative of the media from which they were collected. Additionally, samples should be analysed within necessary holding times depending on the analyte.

Environmental samples were collected from each borehole in general accordance with techniques described in Australian Standards AS4482.1 (reference 2) AS4482.2 (reference 6) and NEPM (reference 1), to maintain the representativeness and integrity of the samples. The number of sampling points exceeded the minimum required sampling density as defined by NSW EPA (reference 7), however, were considered sufficient for the purpose of this investigation.

Finally, all samples were analysed within holding times.

G4.4 COMPLETENESS

This is a measure of whether all the data necessary to meet the project objectives, were collected. In the field and laboratory, this is achieved by sampling all critical locations and depths using acceptable methods and ensuring samples are analysed for appropriate chemicals.

GEE selected sufficient a sufficient number of sample points for the purpose of the investigation as defined by the NSW EPA (reference 7). Additionally, samples were analysed for chemicals of concern based on appropriate field screening measures and logging of unusual aesthetics which may indicate contamination. Combined with the fact that standard operating procedures were adopted by GEE, the investigation is assessed as being complete.

G4.5 COMPARABILITY

This is a measure of confidence that data may be considered to be equivalent for each sampling and analysis event. Soil samples were collected by experienced GEE personnel using standard operating procedures and analysed in accordance with NATA accredited laboratory methods. The comparability of the data should be consistent as sampling protocols were employed throughout the duration of the fieldwork and analysis was undertaken by NATA registered laboratories using accredited analytical methods.

G5. CONCLUSION

A review of the DQIs indicates that the field procedures and analytical results adopted for this investigation are able to be relied upon for making conclusions and recommendations regarding the contamination status of the site.

References

1. *NEPC, 1999: National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure, 1999. Schedule B(2) Site Characterisation.*

2. *Australian Standard AS4482.1 – 2005: Guide to the sampling and investigation of potentially contaminated soil Part 1: Non-volatile and semi-volatile compounds.*

3. *NEPC, 1999: National Environment Protection Council (1999). National Environment Protection (Assessment of Site Contamination) Measure. Schedule B(3) Guideline of Laboratory Analysis of Potentially contaminated Soils.*

4. *Keith, 1991: Environmental sampling and Analysis, A practical guide. Lewis Publishers.*

5. *Popek (2003). Sampling and Analysis of Environmental Chemical Pollutants. Academic Press.*

6. *Australian Standard AS4482.2 – 1999: Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances.*

7. *NSW EPA, 2022: Environment Protection Authority NSW, 2022: Contaminated Land Guidelines: Sampling Design – Part 1. August 2022.*

SOIL - Blind Replicate Results

Sample Date		6/09/2022	6/09/2022	RPD	6/09/2022	6/09/2022	RPD	31/10/2023	31/10/2023	RPD
Sample Identification		**SM060922-10**	**SM060922-101**		**SM060922-22**	**SM060922-103**		**ZZ311023-01**	**ZZ311023-100**	
Analyte	Units									
Total Metals										
Arsenic	mg/kg	<4	<4	--	<4	<4	--	28	26	7%
Cadmium	mg/kg	<0.4	0.4	--	<0.4	<0.4	--	0.5	0.4	22%
Chromium	mg/kg	5	7	33%	2	3	40%	27	27	0%
Copper	mg/kg	19	24	23%	17	14	19%	72	74	3%
Lead	mg/kg	150	160	6%	96	200	70%	190	170	11%
Mercury	mg/kg	0.2	0.2	0%	<0.1	<0.1	--	<0.1	<0.1	--
Nickel	mg/kg	4	4	0%	1	4	120%	6	7	15%
Zinc	mg/kg	160	180	12%	95	130	31%	280	260	7%
BTEXN										
Benzene	mg/kg	<0.2	<0.2	--	<0.2	<0.2	--	<0.2	<0.2	--
Toluene	mg/kg	<0.5	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	--
Ethylbenzene	mg/kg	<1	<1	--	<1	<1	--	<1	<1	--
Total Xylenes	mg/kg	<1	<1	--	<1	<1	--	<1	<1	--
Naphthalene	mg/kg	<1	<1	--	<1	<1	--	<1	<1	--
Total Petroleum Hydrocarbons										
F1 (C6-C10)	mg/kg	<25	<25	--	<25	<25	--	<25	<25	--
F2 (>C10-C16)	mg/kg	<50	<50	--	<50	<50	--	<50	<50	--
F3 (>C16-C34)	mg/kg	<100	<100	--	<100	<100	--	<100	100	--
F4 (>C34-C40)	mg/kg	<100	<100	--	<100	<100	--	<100	<100	--
Polycyclic Aromatic Hydrocarbons										
Naphthalene	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--	<0.1	<0.1	--
Acenaphthylene	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--	<0.1	<0.1	--
Acenaphthene	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--	<0.1	<0.1	--
Fluorene	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--	<0.1	<0.1	--
Phenanthrene	mg/kg	0.2	0.5	86%	<0.1	<0.1	--	<0.1	<0.1	--
Anthracene	mg/kg	0.1	0.2	67%	<0.1	<0.1	--	<0.1	<0.1	--
Fluoranthene	mg/kg	0.8	1.8	**77%**	0.1	0.2	67%	0.3	0.3	0%
Pyrene	mg/kg	1	2.1	**71%**	0.2	0.2	0%	0.3	0.3	0%
Benzo(a)anthracene	mg/kg	0.9	1.7	62%	<0.1	0.1	--	0.2	0.2	0%
Chrysene	mg/kg	0.7	1.3	60%	<0.1	0.1	--	0.2	0.2	0%
Benzo(b,j+k)fluoranthene	mg/kg	1	2	67%	<0.2	<0.2	--	0.5	0.6	18%
Benzo(a)pyrene	mg/kg	0.75	1.5	**67%**	0.1	0.1	0%	0.2	0.2	0%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	0.6	67%	<0.1	<0.1	--	0.2	0.2	0%
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.2	--	<0.1	<0.1	--	<0.1	<0.1	--
Benzo(g,h,i)perylene	mg/kg	0.5	0.8	46%	<0.1	0.1	--	0.2	0.2	0%
Organochlorine Pesticides (OCP)										
Heptachlor	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
Aldrin	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
Dieldrin	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
Endrin	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
gamma-Chlordane	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
alpha-chlordane	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
Endosulfan I	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
Endosulfan II	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
HCB	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
Methoxychlor	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
DDE + DDD + DDT	mg/kg	<0.1	<0.1	--	-	-	--	0.2	0.5	86%
DDT	mg/kg	<0.1	<0.1	--	-	-	--	0.2	0.5	86%
Remaining OCPs	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--
PCBs										
Total PCBs	mg/kg	<0.1	<0.1	--	-	-	--	<0.1	<0.1	--

Values in Bold Indicate: RPD > 50 % When average concentration is > 10 x LOR
RPD > 75 % When average concentration is 5 to 10 x LOR
RPD > 150 % When average concentration is < 5 x LOR

SOIL - Split Duplicate Results

Sample Date		6/09/2022	6/09/2022	RPD	31/10/2023	31/10/2023	RPD
Sample Identification		**SM060922-01**	**SM060922-100**		**ZZ311023-04**	**ZZ311023-101**	
Analyte	Units						
Total Metals							
Arsenic	mg/kg	<4	<4	**--**	<4	<4	**--**
Cadmium	mg/kg	<0.4	<0.4	--	<0.4	<0.4	--
Chromium	mg/kg	3	3	0%	<1	<1	--
Copper	mg/kg	12	13	8%	1	2	67%
Lead	mg/kg	59	72	20%	4	6	40%
Mercury	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Nickel	mg/kg	<1	1	**--**	<1	<1	**--**
Zinc	mg/kg	10	14	33%	4	11	93%
BTEXN							
Benzene	mg/kg	<0.2	<0.2	--	<0.2	<0.2	--
Toluene	mg/kg	<0.5	<0.5	--	<0.5	<0.5	--
Ethylbenzene	mg/kg	<1	<1	--	<1	<1	--
Total Xylenes	mg/kg	<1	<1	--	<1	<1	--
Naphthalene	mg/kg	<1	<1	--	<1	<1	--
Total Petroleum Hydrocarbons							
F1 (C6-C10)	mg/kg	<25	<25	--	<25	<25	--
F2 (>C10-C16)	mg/kg	<50	<50	--	<50	<50	--
F3 (>C16-C34)	mg/kg	<100	<100	--	<100	<100	--
F4 (>C34-C40)	mg/kg	<100	<100	--	<100	<100	--
Polycyclic Aromatic Hydrocarbons							
Naphthalene	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Acenaphthylene	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Acenaphthene	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Fluorene	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Phenanthrene	mg/kg	0.3	0.3	0%	<0.1	<0.1	--
Anthracene	mg/kg	<0.1	0.1	--	<0.1	<0.1	--
Fluoranthene	mg/kg	0.9	1	11%	<0.1	<0.1	--
Pyrene	mg/kg	1	1.1	10%	<0.1	<0.1	--
Benzo(a)anthracene	mg/kg	0.8	0.6	29%	<0.1	<0.1	--
Chrysene	mg/kg	0.6	0.7	15%	<0.1	<0.1	--
Benzo(b,j+k)fluoranthene	mg/kg	1	1.3	26%	<0.2	<0.2	--
Benzo(a)pyrene	mg/kg	0.77	0.84	9%	<0.05	<0.05	--
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	0.6	40%	<0.1	<0.1	--
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1	--	<0.1	<0.1	--
Benzo(g,h,i)perylene	mg/kg	0.6	0.6	0%	<0.1	<0.1	--
Organochlorine Pesticides (OCP)							
Heptachlor	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Aldrin	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Dieldrin	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Endrin	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
gamma-Chlordane	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
alpha-chlordane	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Endosulfan I	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Endosulfan II	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
HCB	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Methoxychlor	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
DDE + DDD + DDT	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
DDT	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
Remaining OCPs	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--
PCBs							
Total PCBs	mg/kg	<0.1	<0.1	--	<0.1	<0.1	--

Values in Bold Indicate: RPD > 50 % When average concentration is > 10 x LOR
RPD > 75 % When average concentration is 5 to 10 x LOR
RPD > 150 % When average concentration is < 5 x LOR

SOIL - Trip Blank Results

Laboratory:		Envirolab	Envirolab
Laboratory Report Number:		305074	336931
Sample ID		**Trip Blank**	**Trip Blank**
Analyte	Units		
BTEXN			
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
meta- & para-Xylene	mg/kg	<2	<2
ortho-Xylene	mg/kg	<1	<1
Total Xylenes	mg/kg	<3	<3
Naphthalene	mg/kg	<1	<1
Total Petroleum Hydrocarbons			
TRH C_6 - C_{10} (F1)	mg/kg	<25	<25

Values in Bold Indicate: Detection above Laboratory Limit Of Reporting

SOIL - Trip Spike Results

Laboratory:		Envirolab	Envirolab
Laboratory Report Number:		305074	336931
Sample ID		**Trip Spike**	**Trip Spike**
Analyte	Units		
BTEXN			
Benzene	mg/kg	97	92
Toluene	mg/kg	96	91
Ethylbenzene	mg/kg	97	90
meta- & para-Xylene	mg/kg	98	91
ortho-Xylene	mg/kg	97	91
Total Xylenes	mg/kg	-	-
Naphthalene	mg/kg	-	-

Values in Bold Indicate: Data Outside Acceptable Range of 70 - 130

SOIL - Rinsate Results

Laboratory Report Number:		305074	336931
Sample ID		**SM070922-R1**	**ZZ311023-R**
Analyte	Units		
Total Metals			
Arsenic	mg/L	<0.05	<0.05
Cadmium	mg/L	<0.01	<0.01
Chromium	mg/L	<0.01	<0.01
Copper	mg/L	<0.01	<0.01
Lead	mg/L	<0.03	<0.03
Mercury	mg/L	<0.0005	<0.0005
Nickel	mg/L	<0.02	<0.02
Zinc	mg/L	<0.02	<0.02
BTEXN			
Benzene	µg/L	<1	<1
Toluene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
o-xylene	µg/L	<1	<1
Naphthalene	µg/L	<1	<1
Total Petroleum Hydrocarbons			
F1 (C6-C10)	µg/L	<10	<10
F2 (>C10-C16)	µg/L	-	<50
F3 (>C16-C34)	µg/L	-	<200
F4 (>C34-C40)	µg/L	-	<200

Values in Bold Indicate: Detection above Laboratory Limit Of Reporting

APPENDIX H

PID FIELD DATA SHEETS AND CALIBRATION CERTIFICATE

geo-environmental
ENGINEERING
82 Bridge Street
LANE COVE NSW 2066
Ph: + 61 (0) 2 9420 3361
www.geoenvironmental.com.au

PID HEADSPACE TEST DATA SHEET

PROJECT NAME: Contamination Assessment		PROJECT NUMBER: G21071VAU
LOCATION / SITE: 671-683 OSHR Vaucluse NSW	CLIENT: Blare Management	DATE: 07-09-2022

EQUIPMENT AND METHODOLOGY

EQUIPMENT: PhotoCheck Tiger	LAMP VOLTAGE (eV): 10.6	SUPPLIER: Airmet Rentals

CALIBRATION DETAILS

DATE: 05-09-2022	CALIBRATION SPAN GAS: Isobutylene	SPAN GAS VALUE (ppm): 93

RESULTS

SAMPLE ID	LOCATION	DEPTH (m)	PID VALUE (ppm)	SAMPLE ID	LOCATION	DEPTH (m)	PID VALUE (ppm)
SM060922-01	BH301		<1	SM060922-23	BH308		<1
SM060922-02	BH301		<1	SM060922-24	BH310		<1
SM060922-03	BH301		<1	SM060922-25	BH310		<1
SM060922-04	BH302		<1	SM060922-26	BH310		<1
SM060922-05	BH302		<1	SM060922-27	BH309		<1
SM060922-06	BH302		<1	SM060922-28	BH309		<1
SM060922-07	BH303		<1	SM060922-29	BH309		<1
SM060922-08	BH303		<1	SM060922-30	BH311		<1
SM060922-09	BH303		<1	SM060922-31	BH311		<1
SM060922-10	BH304		<1	SM060922-32	BH311		<1
SM060922-11	BH304		<1	SM060922-33	BH312		<1
SM060922-12	BH304		<1	SM060922-34	BH312		<1
SM060922-13	BH305		<1	SM060922-35	BH312		<1
SM060922-14	BH305		<1	SM060922-36	BH313		<1
SM060922-15	BH305		<1	SM060922-37	BH313		<1
SM060922-16	BH306		<1	SM060922-38	BH313		<1
SM060922-17	BH306		<1	SM060922-39	BH314		<1
SM060922-18	BH306		<1	SM060922-40	BH314		<1
SM060922-19	BH307		<1	SM060922-41	BH314		<1
SM060922-20	BH307		<1	SM060922-42	BH315		<1
SM060922-21	BH307		<1	SM060922-43	BH315		<1
SM060922-22	BH308		<1	SM060922-44	BH315		<1

Notes: # = Insufficient sample volume for testing

geo-environmental
ENGINEERING
82 Bridge Street
LANE COVE NSW 2066
Ph: + 61 (0) 2 9420 3361
www.geoenvironmental.com.au

PID HEADSPACE TEST DATA SHEET

PROJECT NAME: Contamination Assessment	PROJECT NUMBER: G21071VAU	
LOCATION / SITE: 671-683 OSHR Vaucluse NSW	CLIENT: Blare Management	DATE: 07-09-2022

EQUIPMENT AND METHODOLOGY

EQUIPMENT: PhotoCheck Tiger	LAMP VOLTAGE (eV): 10.6	SUPPLIER: Airmet Rentals

CALIBRATION DETAILS

DATE: 05-09-2022	CALIBRATION SPAN GAS: Isobutylene	SPAN GAS VALUE (ppm): 93

RESULTS

SAMPLE ID	LOCATION	DEPTH (m)	PID VALUE (ppm)	SAMPLE ID	LOCATION	DEPTH (m)	PID VALUE (ppm)
SM060922-45	BH316		<1				
SM060922-46	BH316		<1				
SM060922-47	BH316		<1				
SM060922-48	BH317		<1				
SM060922-49	BH317		<1				
SM060922-50	BH317		<1				

Notes: # = Insufficient sample volume for testing

PID Calibration Certificate

Instrument **PhoCheck Tiger**
Serial No. **T-119104**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	PID	✓	10.6 ev
Alarms	Beeper	✓	Low: 50ppm; High: 100ppm; TWA: 10ppm; STEL: 25ppm
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		93ppm Isobutylene	NATA	SY361		92.7 ppm Isobutylene

Calibrated by: **Izack Muhlbock**

Calibration date: **5-Sep-22**

Next calibration due: **5-Oct-22**

APPENDIX I

LABORATORY REPORTS

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

CERTIFICATE OF ANALYSIS 305074

Client Details

Client	Geo-Environmental Engineering
Attention	Zachary, Stephen McCormack
Address	82 Bridge St, Lane Cove, NSW, 2066

Sample Details

Your Reference	**G21071VAU**
Number of Samples	54 Soil, 1 Water
Date samples received	07/09/2022
Date completed instructions received	07/09/2022

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	12/09/2022
Date of Issue	12/09/2022

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Asbestos Approved By
Analysed by Asbestos Approved Analyst: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Josh Williams, Organics and LC Supervisor
Kyle Gavrily, Senior Chemist
Loren Bardwell, Development Chemist
Lucy Zhu, Asbestos Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		305074-1	305074-2	305074-4	305074-5	305074-7
Your Reference	UNITS	Trip Blank	Trip Spike	SM060922-01	SM060922-02	SM060922-04
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C_6 - C_9	mg/kg	<25	[NA]	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	[NA]	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	[NA]	<25	<25	<25
Benzene	mg/kg	<0.2	97%	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	96%	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	97%	<1	<1	<1
m+p-xylene	mg/kg	<2	98%	<2	<2	<2
o-Xylene	mg/kg	<1	97%	<1	<1	<1
Naphthalene	mg/kg	<1	[NA]	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	[NA]	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	80	94	85	81	93

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		305074-8	305074-10	305074-13	305074-17	305074-18
Your Reference	UNITS	SM060922-05	SM060922-07	SM060922-10	SM060922-16	SM060922-17
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	%	93	86	80	80	87

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		305074-20	305074-23	305074-25	305074-28	305074-29
Your Reference	UNITS	SM060922-19	SM060922-22	SM060922-24	SM060922-27	SM060922-28
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	%	93	71	72	97	89

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		305074-31	305074-34	305074-37	305074-40	305074-41
Your Reference	UNITS	SM060922-30	SM060922-33	SM060922-36	SM060922-39	SM060922-40
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	%	86	78	93	90	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		305074-43	305074-46	305074-49	305074-52	305074-53
Your Reference	UNITS	SM060922-42	SM060922-45	SM060922-48	SM060922-101	SM060922-103
Date Sampled		6/09/2022	07/09/2022	07/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	%	96	95	91	84	87

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		305074-54
Your Reference	UNITS	SM060922-13
Date Sampled		6/09/2022
Type of sample		Soil
Date extracted	-	09/09/2022
Date analysed	-	12/09/2022
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	88

svTRH (C10-C40) in Soil						
Our Reference		305074-4	305074-5	305074-7	305074-8	305074-10
Your Reference	UNITS	SM060922-01	SM060922-02	SM060922-04	SM060922-05	SM060922-07
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	11/09/2022	11/09/2022	11/09/2022	11/09/2022	11/09/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<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	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	103	114	94	94	98

svTRH (C10-C40) in Soil						
Our Reference		305074-13	305074-17	305074-18	305074-20	305074-23
Your Reference	UNITS	SM060922-10	SM060922-16	SM060922-17	SM060922-19	SM060922-22
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	11/09/2022	11/09/2022	11/09/2022	11/09/2022	11/09/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<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	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	88	96	95	96	96

svTRH (C10-C40) in Soil						
Our Reference		305074-25	305074-28	305074-29	305074-31	305074-34
Your Reference	UNITS	SM060922-24	SM060922-27	SM060922-28	SM060922-30	SM060922-33
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	11/09/2022	11/09/2022	11/09/2022	11/09/2022	12/09/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<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	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	93	87	89	86	88

svTRH (C10-C40) in Soil						
Our Reference		305074-37	305074-40	305074-41	305074-43	305074-46
Your Reference	UNITS	SM060922-36	SM060922-39	SM060922-40	SM060922-42	SM060922-45
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	07/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	110	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	140	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	250	<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	210	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	120	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	330	<50
Surrogate o-Terphenyl	%	89	91	90	92	90

svTRH (C10-C40) in Soil					
Our Reference		305074-49	305074-52	305074-53	305074-54
Your Reference	UNITS	SM060922-48	SM060922-101	SM060922-103	SM060922-13
Date Sampled		07/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50
Surrogate o-Terphenyl	%	87	87	88	86

PAHs in Soil						
Our Reference		305074-4	305074-5	305074-7	305074-8	305074-10
Your Reference	UNITS	SM060922-01	SM060922-02	SM060922-04	SM060922-05	SM060922-07
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	09/09/2022	12/09/2022	12/09/2022	12/09/2022	09/09/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.3	<0.1	0.3	<0.1	0.2
Anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.9	<0.1	1	<0.1	0.5
Pyrene	mg/kg	1.0	<0.1	1.2	<0.1	0.5
Benzo(a)anthracene	mg/kg	0.8	<0.1	0.8	<0.1	0.5
Chrysene	mg/kg	0.6	<0.1	0.5	<0.1	0.4
Benzo(b,j+k)fluoranthene	mg/kg	1	<0.2	1	<0.2	0.6
Benzo(a)pyrene	mg/kg	0.77	<0.05	0.83	<0.05	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	<0.1	0.5	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.6	<0.1	0.6	<0.1	0.3
Total +ve PAH's	mg/kg	6.4	<0.05	7.5	<0.05	3.5
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.0	<0.5	1.2	<0.5	0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.1	<0.5	1.2	<0.5	0.6
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.1	<0.5	1.2	<0.5	0.6
Surrogate p-Terphenyl-d14	%	106	79	77	69	114

PAHs in Soil						
Our Reference		305074-12	305074-13	305074-14	305074-17	305074-18
Your Reference	UNITS	SM060922-09	SM060922-10	SM060922-11	SM060922-16	SM060922-17
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	09/09/2022	12/09/2022	09/09/2022	12/09/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	0.5
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.4	0.2	<0.1	<0.1	0.6
Anthracene	mg/kg	0.1	0.1	<0.1	<0.1	0.2
Fluoranthene	mg/kg	1.2	0.8	<0.1	<0.1	2.2
Pyrene	mg/kg	1.2	1	<0.1	<0.1	2.5
Benzo(a)anthracene	mg/kg	0.8	0.9	<0.1	<0.1	1.7
Chrysene	mg/kg	0.5	0.7	<0.1	<0.1	1
Benzo(b,j+k)fluoranthene	mg/kg	1	1	<0.2	<0.2	2.2
Benzo(a)pyrene	mg/kg	0.77	0.75	<0.05	<0.05	1.3
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	0.3	<0.1	<0.1	0.6
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2
Benzo(g,h,i)perylene	mg/kg	0.5	0.5	<0.1	<0.1	0.8
Total +ve PAH's	mg/kg	7.5	6.3	<0.05	<0.05	14
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.1	1	<0.5	<0.5	2.0
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.1	1.0	<0.5	<0.5	2.0
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.1	1.1	<0.5	<0.5	2.0
Surrogate p-Terphenyl-d14	%	75	105	77	129	84

PAHs in Soil						
Our Reference		305074-20	305074-21	305074-23	305074-24	305074-25
Your Reference	UNITS	SM060922-19	SM060922-20	SM060922-22	SM060922-23	SM060922-24
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	09/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.1	<0.1	0.5
Pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	0.6
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.6
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	<0.05	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Total +ve PAH's	mg/kg	<0.05	<0.05	0.4	<0.05	3.6
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.6
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.6
Surrogate p-Terphenyl-d14	%	105	77	78	84	80

PAHs in Soil						
Our Reference		305074-26	305074-28	305074-29	305074-31	305074-32
Your Reference	UNITS	SM060922-25	SM060922-27	SM060922-28	SM060922-30	SM060922-31
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	09/09/2022	12/09/2022	12/09/2022	12/09/2022
Naphthalene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.5	<0.1	0.2	<0.1
Anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	1.4	<0.1	0.5	<0.1
Pyrene	mg/kg	<0.1	1.5	<0.1	0.5	<0.1
Benzo(a)anthracene	mg/kg	<0.1	1.1	<0.1	0.4	<0.1
Chrysene	mg/kg	<0.1	1.0	<0.1	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	2	<0.2	0.6	<0.2
Benzo(a)pyrene	mg/kg	<0.05	1.1	<0.05	0.4	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.5	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.7	<0.1	0.2	<0.1
Total +ve PAH's	mg/kg	<0.05	9.8	<0.05	3.1	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	1.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	1.5	<0.5	0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	1.5	<0.5	0.6	<0.5
Surrogate p-Terphenyl-d14	%	74	87	76	72	70

PAHs in Soil						
Our Reference		305074-34	305074-35	305074-37	305074-38	305074-40
Your Reference	UNITS	SM060922-33	SM060922-34	SM060922-36	SM060922-37	SM060922-39
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	09/09/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.3	<0.1	<0.1	<0.1	0.3
Pyrene	mg/kg	0.3	<0.1	<0.1	<0.1	0.4
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	0.2	<0.2	<0.2	<0.2	0.5
Benzo(a)pyrene	mg/kg	0.1	<0.05	<0.05	<0.05	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2
Total +ve PAH's	mg/kg	1.3	<0.05	<0.05	<0.05	2.5
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.5
Surrogate p-Terphenyl-d14	%	76	74	81	73	116

PAHs in Soil						
Our Reference		305074-41	305074-43	305074-44	305074-46	305074-47
Your Reference	UNITS	SM060922-40	SM060922-42	SM060922-43	SM060922-45	SM060922-46
Date Sampled		6/09/2022	6/09/2022	6/09/2022	07/09/2022	07/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Naphthalene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.5	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	1.2	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	0.5	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.5	2.5	<0.1	0.2	<0.1
Pyrene	mg/kg	0.6	2.8	<0.1	0.2	<0.1
Benzo(a)anthracene	mg/kg	0.4	1.7	<0.1	0.2	<0.1
Chrysene	mg/kg	0.2	1.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.5	2.3	<0.2	0.3	<0.2
Benzo(a)pyrene	mg/kg	0.3	1.4	<0.05	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	0.7	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	0.9	<0.1	0.1	<0.1
Total +ve PAH's	mg/kg	3.1	16	<0.05	1.2	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	2.1	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	2.1	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	2.1	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	79	78	76	72	73

PAHs in Soil						
Our Reference		305074-49	305074-50	305074-52	305074-53	305074-54
Your Reference	UNITS	SM060922-48	SM060922-49	SM060922-101	SM060922-103	SM060922-13
Date Sampled		07/09/2022	07/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	09/09/2022	12/09/2022	12/09/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	1.8	0.2	0.2
Pyrene	mg/kg	<0.1	<0.1	2.1	0.2	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	1.7	0.1	0.1
Chrysene	mg/kg	<0.1	<0.1	1.3	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.06	<0.05	1.5	0.1	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.8	0.1	<0.1
Total +ve PAH's	mg/kg	0.06	<0.05	13	0.84	0.55
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	2.1	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	2.1	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	2.1	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	71	75	97	75	71

PAHs in Soil		
Our Reference		305074-55
Your Reference	UNITS	SM060922-14
Date Sampled		6/09/2022
Type of sample		Soil
Date extracted	-	09/09/2022
Date analysed	-	12/09/2022
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	72

Organochlorine Pesticides in soil						
Our Reference		305074-4	305074-10	305074-13	305074-17	305074-20
Your Reference	UNITS	SM060922-01	SM060922-07	SM060922-10	SM060922-16	SM060922-19
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	100	104	94	115	105

Organochlorine Pesticides in soil				
Our Reference		305074-28	305074-40	305074-52
Your Reference	UNITS	SM060922-27	SM060922-39	SM060922-101
Date Sampled		6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	09/09/2022	09/09/2022	09/09/2022
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	98	94

PCBs in Soil						
Our Reference		305074-4	305074-10	305074-13	305074-17	305074-20
Your Reference	UNITS	SM060922-01	SM060922-07	SM060922-10	SM060922-16	SM060922-19
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
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 TCMX	%	100	104	94	115	105

PCBs in Soil				
Our Reference		305074-28	305074-40	305074-52
Your Reference	UNITS	SM060922-27	SM060922-39	SM060922-101
Date Sampled		6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil
Date extracted	-	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	09/09/2022	09/09/2022	09/09/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	98	94

Acid Extractable metals in soil						
Our Reference		305074-4	305074-5	305074-7	305074-8	305074-10
Your Reference	UNITS	SM060922-01	SM060922-02	SM060922-04	SM060922-05	SM060922-07
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	<1	4	<1	25
Copper	mg/kg	12	<1	53	12	34
Lead	mg/kg	59	1	140	4	100
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Nickel	mg/kg	<1	<1	1	<1	28
Zinc	mg/kg	10	<1	85	39	84

Acid Extractable metals in soil						
Our Reference		305074-11	305074-12	305074-13	305074-14	305074-17
Your Reference	UNITS	SM060922-08	SM060922-09	SM060922-10	SM060922-11	SM060922-16
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	20	6	5	<1	<1
Copper	mg/kg	41	15	19	2	<1
Lead	mg/kg	210	140	150	17	2
Mercury	mg/kg	0.2	0.1	0.2	<0.1	<0.1
Nickel	mg/kg	12	2	4	<1	<1
Zinc	mg/kg	180	120	160	12	4

Acid Extractable metals in soil						
Our Reference		305074-18	305074-20	305074-21	305074-23	305074-24
Your Reference	UNITS	SM060922-17	SM060922-19	SM060922-20	SM060922-22	SM060922-23
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Arsenic	mg/kg	4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	<1	3	2	4
Copper	mg/kg	9	1	<1	17	<1
Lead	mg/kg	19	25	1	96	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	<1	1	1	1
Zinc	mg/kg	40	20	2	95	2

Acid Extractable metals in soil						
Our Reference		305074-25	305074-26	305074-28	305074-29	305074-31
Your Reference	UNITS	SM060922-24	SM060922-25	SM060922-27	SM060922-28	SM060922-30
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Arsenic	mg/kg	<4	<4	<4	<4	4
Cadmium	mg/kg	2	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	15	<1	<1	<1	3
Copper	mg/kg	120	1	5	<1	12
Lead	mg/kg	780	<1	65	2	82
Mercury	mg/kg	0.5	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	<1	<1	<1	2
Zinc	mg/kg	590	25	25	3	81

Acid Extractable metals in soil						
Our Reference		305074-32	305074-34	305074-35	305074-37	305074-38
Your Reference	UNITS	SM060922-31	SM060922-33	SM060922-34	SM060922-36	SM060922-37
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	0.8	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	9	<1	6	<1
Copper	mg/kg	3	38	4	180	3
Lead	mg/kg	4	440	27	670	15
Mercury	mg/kg	<0.1	0.2	<0.1	0.6	<0.1
Nickel	mg/kg	<1	7	<1	2	<1
Zinc	mg/kg	17	470	48	430	58

Acid Extractable metals in soil						
Our Reference		305074-40	305074-41	305074-42	305074-43	305074-44
Your Reference	UNITS	SM060922-39	SM060922-40	SM060922-41	SM060922-42	SM060922-43
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	1	<0.4
Chromium	mg/kg	2	4	4	16	<1
Copper	mg/kg	5	8	13	91	1
Lead	mg/kg	21	76	79	610	17
Mercury	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Nickel	mg/kg	2	2	2	8	<1
Zinc	mg/kg	31	110	130	780	17

Acid Extractable metals in soil						
Our Reference		305074-46	305074-47	305074-49	305074-50	305074-52
Your Reference	UNITS	SM060922-45	SM060922-46	SM060922-48	SM060922-49	SM060922-101
Date Sampled		07/09/2022	07/09/2022	07/09/2022	07/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	0.6	<0.4	0.6	<0.4	0.4
Chromium	mg/kg	14	<1	7	<1	7
Copper	mg/kg	39	<1	42	<1	24
Lead	mg/kg	420	2	140	1	160
Mercury	mg/kg	0.2	<0.1	0.2	<0.1	0.2
Nickel	mg/kg	6	<1	7	<1	4
Zinc	mg/kg	160	22	170	7	180

Acid Extractable metals in soil						
Our Reference		305074-53	305074-54	305074-55	305074-56	305074-57
Your Reference	UNITS	SM060922-103	SM060922-13	SM060922-14	SM060922-27 - [TRIPLICATE]	SM060922-43 - [TRIPLICATE]
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Arsenic	mg/kg	<4	5	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	9	<1	<1	<1
Copper	mg/kg	14	28	1	4	1
Lead	mg/kg	200	29	1	73	9
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	3	<1	<1	<1
Zinc	mg/kg	130	51	3	38	16

Acid Extractable metals in soil		
Our Reference		305074-58
Your Reference	UNITS	SM060922-01 - [TRIPLICATE]
Date Sampled		6/09/2022
Type of sample		Soil
Date prepared	-	12/09/2022
Date analysed	-	12/09/2022
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	3
Copper	mg/kg	14
Lead	mg/kg	70
Mercury	mg/kg	<0.1
Nickel	mg/kg	1
Zinc	mg/kg	15

Moisture						
Our Reference		305074-4	305074-5	305074-7	305074-8	305074-10
Your Reference	UNITS	SM060922-01	SM060922-02	SM060922-04	SM060922-05	SM060922-07
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Moisture	%	8.5	5.7	9.9	11	16

Moisture						
Our Reference		305074-11	305074-12	305074-13	305074-14	305074-17
Your Reference	UNITS	SM060922-08	SM060922-09	SM060922-10	SM060922-11	SM060922-16
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Moisture	%	6.5	11	7.5	6.7	5.0

Moisture						
Our Reference		305074-18	305074-20	305074-21	305074-23	305074-24
Your Reference	UNITS	SM060922-17	SM060922-19	SM060922-20	SM060922-22	SM060922-23
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Moisture	%	7.9	2.1	2.8	4.4	3.0

Moisture						
Our Reference		305074-25	305074-26	305074-28	305074-29	305074-31
Your Reference	UNITS	SM060922-24	SM060922-25	SM060922-27	SM060922-28	SM060922-30
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Moisture	%	15	5.6	4.1	2.0	8.0

Moisture						
Our Reference		305074-32	305074-34	305074-35	305074-37	305074-38
Your Reference	UNITS	SM060922-31	SM060922-33	SM060922-34	SM060922-36	SM060922-37
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Moisture	%	5.7	9.3	5.1	6.2	6.3

Moisture						
Our Reference		305074-40	305074-41	305074-42	305074-43	305074-44
Your Reference	UNITS	SM060922-39	SM060922-40	SM060922-41	SM060922-42	SM060922-43
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Moisture	%	3.0	4.7	7.2	8.8	2.4

Moisture						
Our Reference		305074-46	305074-47	305074-49	305074-50	305074-52
Your Reference	UNITS	SM060922-45	SM060922-46	SM060922-48	SM060922-49	SM060922-101
Date Sampled		07/09/2022	07/09/2022	07/09/2022	07/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/09/2022	09/09/2022	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Moisture	%	16	5.2	11	5.4	6.9

Moisture				
Our Reference		305074-53	305074-54	305074-55
Your Reference	UNITS	SM060922-103	SM060922-13	SM060922-14
Date Sampled		6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil
Date prepared	-	09/09/2022	09/09/2022	09/09/2022
Date analysed	-	12/09/2022	12/09/2022	12/09/2022
Moisture	%	3.9	15	2.3

Asbestos ID - soils						
Our Reference		305074-4	305074-7	305074-10	305074-13	305074-17
Your Reference	UNITS	SM060922-01	SM060922-04	SM060922-07	SM060922-10	SM060922-16
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Sample mass tested	g	Approx. 40g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown coarse-grained soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		305074-20	305074-23	305074-25	305074-28	305074-31
Your Reference	UNITS	SM060922-19	SM060922-22	SM060922-24	SM060922-27	SM060922-30
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	6/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Sample mass tested	g	Approx. 45g	Approx. 40g	Approx. 25g	Approx. 35g	Approx. 35g
Sample Description	-	Grey sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Grey sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		305074-34	305074-40	305074-41	305074-43	305074-46
Your Reference	UNITS	SM060922-33	SM060922-39	SM060922-40	SM060922-42	SM060922-45
Date Sampled		6/09/2022	6/09/2022	6/09/2022	6/09/2022	07/09/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/09/2022	12/09/2022	12/09/2022	12/09/2022	12/09/2022
Sample mass tested	g	Approx. 25g	Approx. 40g	Approx. 40g	Approx. 30g	Approx. 25g
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils			
Our Reference		305074-49	305074-54
Your Reference	UNITS	SM060922-48	SM060922-13
Date Sampled		07/09/2022	6/09/2022
Type of sample		Soil	Soil
Date analysed	-	12/09/2022	12/09/2022
Sample mass tested	g	Approx. 30g	Approx. 35g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	305074-3
Your Reference		SM070922-R1
Date Sampled		7/09/2022
Type of sample		Water
Date extracted	-	09/09/2022
Date analysed	-	12/09/2022
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
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	%	108
Surrogate toluene-d8	%	99
Surrogate 4-BFB	%	107

svTRH (C10-C40) in Water		
Our Reference	UNITS	305074-3
Your Reference		SM070922-R1
Date Sampled		7/09/2022
Type of sample		Water
Date extracted	-	12/09/2022
Date analysed	-	12/09/2022
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	%	85

Metals in Waters - Acid extractable		
Our Reference		305074-3
Your Reference	UNITS	SM070922-R1
Date Sampled		7/09/2022
Type of sample		Water
Date prepared	-	12/09/2022
Date analysed	-	12/09/2022
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

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.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
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.
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	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. 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	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)-BTEX 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)-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 is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	305074-10
Date extracted	-			09/09/2022	4	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Date analysed	-			12/09/2022	4	12/09/2022	12/09/2022		12/09/2022	12/09/2022
TRH C_6 - C_9	mg/kg	25	Org-023	<25	4	<25	<25	0	80	89
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	4	<25	<25	0	80	89
Benzene	mg/kg	0.2	Org-023	<0.2	4	<0.2	<0.2	0	80	90
Toluene	mg/kg	0.5	Org-023	<0.5	4	<0.5	<0.5	0	81	87
Ethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	76	86
m+p-xylene	mg/kg	2	Org-023	<2	4	<2	<2	0	81	90
o-Xylene	mg/kg	1	Org-023	<1	4	<1	<1	0	81	90
Naphthalene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	96	4	85	86	1	78	83

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	305074-40
Date extracted	-			[NT]	17	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Date analysed	-			[NT]	17	12/09/2022	12/09/2022		12/09/2022	12/09/2022
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	17	<25	<25	0	97	88
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	17	<25	<25	0	97	88
Benzene	mg/kg	0.2	Org-023	[NT]	17	<0.2	<0.2	0	98	88
Toluene	mg/kg	0.5	Org-023	[NT]	17	<0.5	<0.5	0	94	89
Ethylbenzene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	94	85
m+p-xylene	mg/kg	2	Org-023	[NT]	17	<2	<2	0	99	90
o-Xylene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	98	89
Naphthalene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	17	80	81	1	95	83

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	28	09/09/2022	09/09/2022		[NT]	[NT]
Date analysed	-			[NT]	28	12/09/2022	12/09/2022		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	28	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	28	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	28	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	28	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	28	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	28	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	28	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	28	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	28	97	79	20	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	305074-10
Date extracted	-			09/09/2022	4	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Date analysed	-			12/09/2022	4	11/09/2022	11/09/2022		11/09/2022	11/09/2022
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	4	<50	<50	0	125	117
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	4	<100	<100	0	117	111
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	4	<100	<100	0	100	83
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	4	<50	<50	0	125	117
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	4	<100	<100	0	117	111
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	4	<100	<100	0	100	83
Surrogate o-Terphenyl	%		Org-020	90	4	103	109	6	99	100

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	305074-40
Date extracted	-			[NT]	17	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Date analysed	-			[NT]	17	11/09/2022	11/09/2022		12/09/2022	12/09/2022
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	17	<50	<50	0	124	96
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	17	<100	<100	0	115	90
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	17	<100	<100	0	100	94
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	17	<50	<50	0	124	96
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	17	<100	<100	0	115	90
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	17	<100	<100	0	100	94
Surrogate o-Terphenyl	%		Org-020	[NT]	17	96	96	0	100	85

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	28	09/09/2022	09/09/2022		[NT]	[NT]
Date analysed	-			[NT]	28	11/09/2022	11/09/2022		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	28	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	28	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	28	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	28	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	28	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	28	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	28	87	90	3	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	305074-10
Date extracted	-			09/09/2022	4	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Date analysed	-			09/09/2022	4	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	101	100
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	93	97
Fluorene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	86	92
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	4	0.3	0.3	0	88	103
Anthracene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	4	0.9	1.2	29	96	93
Pyrene	mg/kg	0.1	Org-022/025	<0.1	4	1.0	1.3	26	91	98
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	4	0.8	0.9	12	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	4	0.6	0.9	40	77	69
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	4	1	1	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	4	0.77	0.98	24	82	98
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	4	0.4	0.5	22	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	4	0.6	0.7	15	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	71	4	106	111	5	90	105

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	305074-40
Date extracted	-			[NT]	17	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Date analysed	-			[NT]	17	09/09/2022	09/09/2022		12/09/2022	09/09/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	92	105
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	91	103
Fluorene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	93	95
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	75	97
Anthracene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	69	123
Pyrene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	71	127
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	60	98
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	17	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	17	<0.05	<0.05	0	66	132
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	17	129	108	18	67	107

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	28	09/09/2022	09/09/2022		[NT]	[NT]
Date analysed	-			[NT]	28	09/09/2022	09/09/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	28	0.2	0.1	67	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	28	0.5	0.5	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	28	0.2	0.2	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	28	1.4	1.5	7	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	28	1.5	1.7	12	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	28	1.1	1.4	24	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	28	1.0	1.1	10	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	28	2	2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	28	1.1	1.2	9	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	28	0.5	0.5	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	28	0.1	0.2	67	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	28	0.7	0.8	13	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	28	87	103	17	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	09/09/2022	09/09/2022		[NT]	[NT]
Date analysed	-			[NT]	44	12/09/2022	12/09/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	44	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	44	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	44	76	76	0	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	305074-10
Date extracted	-			09/09/2022	4	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Date analysed	-			09/09/2022	4	09/09/2022	09/09/2022		09/09/2022	09/09/2022
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	108	108
HCB	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	103	106
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	111	103
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	122	111
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	112	108
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	113	113
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	110	106
Endrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	105	111
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	96	106
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	96	104
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	92	4	100	103	3	97	93

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	305074-40
Date extracted	-			[NT]	17	09/09/2022	09/09/2022		[NT]	09/09/2022
Date analysed	-			[NT]	17	09/09/2022	09/09/2022		[NT]	09/09/2022
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	110
HCB	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	110
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	105
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	118
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	112
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	119
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	124
Endrin	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	119
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	108
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	104
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	17	115	101	13	[NT]	99

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	28	09/09/2022	09/09/2022		[NT]	[NT]
Date analysed	-			[NT]	28	09/09/2022	09/09/2022		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	28	93	92	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	305074-10
Date extracted	-			09/09/2022	4	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Date analysed	-			09/09/2022	4	09/09/2022	09/09/2022		09/09/2022	09/09/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	4	<0.1	<0.1	0	113	100
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	92	4	100	103	3	97	93

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	305074-40
Date extracted	-			[NT]	17	09/09/2022	09/09/2022		[NT]	09/09/2022
Date analysed	-			[NT]	17	09/09/2022	09/09/2022		[NT]	09/09/2022
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	17	<0.1	<0.1	0	[NT]	100
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	17	115	101	13	[NT]	99

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	28	09/09/2022	09/09/2022		[NT]	[NT]
Date analysed	-			[NT]	28	09/09/2022	09/09/2022		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	28	93	92	1	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	305074-10
Date prepared	-			12/09/2022	4	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Date analysed	-			12/09/2022	4	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Arsenic	mg/kg	4	Metals-020	<4	4	<4	<4	0	104	101
Cadmium	mg/kg	0.4	Metals-020	<0.4	4	<0.4	<0.4	0	102	87
Chromium	mg/kg	1	Metals-020	<1	4	3	3	0	105	109
Copper	mg/kg	1	Metals-020	<1	4	12	13	8	103	115
Lead	mg/kg	1	Metals-020	<1	4	59	68	14	103	90
Mercury	mg/kg	0.1	Metals-021	<0.1	4	<0.1	<0.1	0	91	#
Nickel	mg/kg	1	Metals-020	<1	4	<1	1	0	106	112
Zinc	mg/kg	1	Metals-020	<1	4	10	17	52	103	86

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	305074-40
Date prepared	-			[NT]	17	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Date analysed	-			[NT]	17	12/09/2022	12/09/2022		12/09/2022	12/09/2022
Arsenic	mg/kg	4	Metals-020	[NT]	17	<4	<4	0	98	107
Cadmium	mg/kg	0.4	Metals-020	[NT]	17	<0.4	<0.4	0	101	100
Chromium	mg/kg	1	Metals-020	[NT]	17	<1	<1	0	103	101
Copper	mg/kg	1	Metals-020	[NT]	17	<1	<1	0	99	106
Lead	mg/kg	1	Metals-020	[NT]	17	2	2	0	102	125
Mercury	mg/kg	0.1	Metals-021	[NT]	17	<0.1	<0.1	0	87	87
Nickel	mg/kg	1	Metals-020	[NT]	17	<1	<1	0	104	104
Zinc	mg/kg	1	Metals-020	[NT]	17	4	3	29	109	103

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	28	12/09/2022	12/09/2022		[NT]	[NT]
Date analysed	-			[NT]	28	12/09/2022	12/09/2022		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	28	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	28	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	28	<1	<1	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	28	5	4	22	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	28	65	52	22	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	28	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	28	<1	<1	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	28	25	46	59	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	44	12/09/2022	12/09/2022		[NT]	[NT]
Date analysed	-			[NT]	44	12/09/2022	12/09/2022		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	44	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	44	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	44	<1	<1	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	44	1	1	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	44	17	26	42	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	44	<1	<1	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	44	17	18	6	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			09/09/2022	[NT]	[NT]	[NT]	[NT]	09/09/2022	[NT]
Date analysed	-			12/09/2022	[NT]	[NT]	[NT]	[NT]	12/09/2022	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	99	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	99	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	98	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	120	[NT]	[NT]	[NT]	[NT]	113	[NT]
Surrogate toluene-d8	%		Org-023	103	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate 4-BFB	%		Org-023	108	[NT]	[NT]	[NT]	[NT]	98	[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	-			12/09/2022	[NT]	[NT]	[NT]	[NT]	12/09/2022	[NT]
Date analysed	-			12/09/2022	[NT]	[NT]	[NT]	[NT]	12/09/2022	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	106	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	106	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	93	[NT]	[NT]	[NT]	[NT]	93	[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	-			12/09/2022	[NT]	[NT]	[NT]	[NT]	12/09/2022	[NT]
Date analysed	-			12/09/2022	[NT]	[NT]	[NT]	[NT]	12/09/2022	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	100	[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]	91	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	98	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	99	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	96	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	100	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	95	[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

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-001 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.
Note: Samples were sub-sampled from jars provided by the client.

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 305074-4 for Zn. Therefore a triplicate result has been issued as laboratory sample number 305074-58.
- The laboratory RPD acceptance criteria has been exceeded for 305074-28 for Zn. Therefore a triplicate result has been issued as laboratory sample number 305074-56.
- The laboratory RPD acceptance criteria has been exceeded for 305074-44 for Pb. Therefore a triplicate result has been issued as laboratory sample number 305074-57.
- # 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.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	Geo-Environmental Engineering Pty Ltd	**Client Project Name and Number:** G21071VAU	**Envirolab Services** 12 Ashley St, Chatswood, NSW, 2067
Project Mgr:	S. McCormack	**PO No.:**	
Sampler:	S. McCormack	**Envirolab Services Quote No. :**	**Phone:** 02 9910 6200
Address:	82 Bridge Street Lane Cove NSW 2066	**Date results required:**	**Fax:** 02 9910 6201
Email:	stephen@geoenvironmental.com.au zachary@geoenvironmental.com.au	Or choose: standard / 1 day / 2 day / 3 day / **5 day** — 5 days	**E-mail:** ahie@envirolabservices.com.au
Phone:	0431 480 980	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	**Contact:** Aileen Hie / Simon Song

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	TRH/BTEXN	Combination 5a	Combination 5	Combination 3	Combination 3a	Metals	Combination 1m	Combination 7 (Incl speciated phenols)	Combination 7a (Incl speciated phenols)	Combination 4a (Incl. speciated phenols)	BTEXN	TRH (vol)/BTEXN	PAHs	Combination 4 (Incl. speciated phenols)	VOCs	Provide as much information about the sample as you can
1	Trip Blank	6/09/2022	Soil												1				Envirolab Services 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 6200
2	Trip Spike	6/09/2022	Soil											1					
3	SM070922-R1	7/09/2022	Soil							1									Job No: 305074
4	SM060922-01	6/09/2022	Soil		1														
5	SM060922-02	6/09/2022	Soil				1												Date Received: 7/9/22
6	SM060922-03	6/09/2022	Soil																Time Received: 1030
7	SM060922-04	6/09/2022	Soil					1											Received By: KW
8	SM060922-05	6/09/2022	Soil				1												Temp: Cool/Ambient
9	SM060922-06	6/09/2022	Soil																Cooling: Ice/Icepack
10	SM060922-07	6/09/2022	Soil		1														Security: Intact/Broken/None
11	SM060922-08	6/09/2022	Soil						1										
12	SM060922-09	6/09/2022	Soil						1							1			
13	SM060922-10	6/09/2022	Soil		1														
14	SM060922-11	6/09/2022	Soil						1							1			

Relinquished by (company):	Geo-Environmental Engineering	**Received by (company):** ELS SYD	**Samples Received:** Cool or Ambient (circle one)
Print Name:	Stephen McCormack	**Print Name:** Katy Wayne	**Temperature Recieved at:** 10 °C (if applicable)
Date & Time:	07-Sep-22	**Date & Time:** 7/9/22 1030	**Transported by:** Hand delivered
Signature:		**Signature:**	Page No: 2 of 8 **Page No: 1 of 4**

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	Geo-Environmental Engineering Pty Ltd	**Client Project Name and Number:** G21071VAU	**Envirolab Services** 12 Ashley St, Chatswood, NSW, 2067
Project Mgr:	S. McCormack	**PO No.:**	
Sampler:	S. McCormack	**Envirolab Services Quote No. :**	**Phone: 02 9910 6200**
Address:	82 Bridge Street Lane Cove NSW 2066	**Date results required:**	**Fax: 02 9910 6201**
Email:	stephen@geoenvironmental.com.au zachary@geoenvironmental.com.au	Or choose: standard / 1 day / 2 day / 3 day / **5 day** **5 days** *Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	**E-mail: ahie@envirolabservices.com.au**
Phone:	0431 480 980		**Contact: Aileen Hie / Simon Song**

Sample Information				Tests Required															Comments
Envirolab Sample ID	**Client Sample ID**	**Date sampled**	**Type of sample**	**TRH/BTEXN**	**Combination 5a**	**Combination 5**	**Combination 3**	**Combination 3a**	**Metals**	**Combination 1m**	**Combination 7** (incl speciated phenols)	**Combination 7a** (incl speciated phenols)	**Combination 4a** (Incl. speciated phenols)	**BTEXN**	**TRH (vol)/BTEXN**	**PAHs**	**Combination 4** (Incl. speciated phenols)	**VOCs**	**Provide as much information about the sample as you can**
15	SM060922-12	6/09/2022	Soil																
NR	SM060922-13	6/09/2022	Soil					1											
NR	SM060922-14	6/09/2022	Soil						1							1			
16	SM060922-15	6/09/2022	Soil																
17	SM060922-16	6/09/2022	Soil		1														305074 7/9/22 KW
18	SM060922-17	6/09/2022	Soil				1												
19	SM060922-18	6/09/2022	Soil																
20	SM060922-19	6/09/2022	Soil		1														
21	SM060922-20	6/09/2022	Soil						1							1			
22	SM060922-21	6/09/2022	Soil																
23	SM060922-22	6/09/2022	Soil					1											
24	SM060922-23	6/09/2022	Soil						1							1			
25	SM060922-24	6/09/2022	Soil					1											

Relinquished by (company):	Geo-Environmental Engineering	**Received by (company):**	**Samples Received: Cool or Ambient (circle one)**
Print Name:	Stephen McCormack	**Print Name:**	**Temperature Recieved at:** **(if applicable)**
Date & Time:	07-Sep-22	**Date & Time:**	**Transported by: Hand delivered / courier**
Signature:		**Signature:**	**Page No: 2 of 4**

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	Geo-Environmental Engineering Pty Ltd	**Client Project Name and Number:** G21071VAU	**Envirolab Services**
Project Mgr:	S. McCormack	**PO No.:**	12 Ashley St, Chatswood, NSW, 2067
Sampler:	S. McCormack	**Envirolab Services Quote No. :**	Phone: 02 9910 6200
Address:	82 Bridge Street Lane Cove NSW 2066	**Date results required:**	Fax: 02 9910 6201
Email:	stephen@geoenvironmental.com.au zachary@geoenvironmental.com.au	Or choose: standard / 1 day / 2 day / 3 day / **5 day** **5 days** *Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	E-mail: ahie@envirolabservices.com.au
Phone:	0431 480 980		Contact: Aileen Hie / Simon Song

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	TRH/BTEXN	Combination 5a	Combination 5	Combination 3	Combination 3a	Metals	Combination 1m	Combination 7 (incl speciated phenols)	Combination 7a (incl speciated phenols)	Combination 4a (Incl. speciated phenols)	BTEXN	TRH (vol)/BTEXN	PAHs	Combination 4 (Incl. speciated phenols)	VOCs	Provide as much information about the sample as you can
26	SM060922-25	6/09/2022	Soil						1							1			
27	SM060922-26	6/09/2022	Soil																
28	SM060922-27	6/09/2022	Soil		1														
29	SM060922-28	6/09/2022	Soil				1												
30	SM060922-29	6/09/2022	Soil																305074
31	SM060922-30	6/09/2022	Soil					1											7/9/22 KW
32	SM060922-31	6/09/2022	Soil						1							1			
33	SM060922-32	6/09/2022	Soil																
34	SM060922-33	6/09/2022	Soil					1											
35	SM060922-34	6/09/2022	Soil						1							1			
36	SM060922-35	6/09/2022	Soil																
37	SM060922-36	6/09/2022	Soil				1												
38	SM060922-37	6/09/2022	Soil						1							1			
39	SM060922-38	6/09/2022	Soil																

Relinquished by (company):	Geo-Environmental Engineering	**Received by (company):**	**Samples Received: Cool or Ambient (circle one)**
Print Name:	Stephen McCormack	**Print Name:**	**Temperature Recieved at:** (if applicable)
Date & Time:	07-Sep-22	**Date & Time:**	**Transported by: Hand delivered / courier**
Signature:		**Signature:**	**Page No: 3 of 4**

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	Geo-Environmental Engineering Pty Ltd	**Client Project Name and Number:** G21071VAU	**Envirolab Services** 12 Ashley St, Chatswood, NSW, 2067
Project Mgr:	S. McCormack		
Sampler:	S. McCormack	**PO No.:**	
Address:	82 Bridge Street Lane Cove NSW 2066	**Envirolab Services Quote No. :**	**Phone: 02 9910 6200** **Fax: 02 9910 6201**
Email:	stephen@geoenvironmental.com.au zachary@geoenvironmental.com.au	**Date results required:** Or choose: standard / 1 day / 2 day / 3 day / **5 day** **5 days** *Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	**E-mail: ahie@envirolabservices.com.au** **Contact: Aileen Hie / Simon Song**
Phone:	0431 480 980		

Sample information				Tests Required														Comments
Envirolab Sample ID	**Client Sample ID**	**Date sampled**	**Type of sample**	**TRH/BTEXN**	**Combination 5a**	**Combination 5**	**Combination 3**	**Combination 3a**	**Metals**	**Combination 1m**	**Combination 7** (incl speciated phenols)	**Combination 7a** (incl speciated phenols)	**Combination 4a** (Incl. speciated phenols)	**BTEXN**	**TRH (vol)/BTEXN**	**PAHs**	**Combination 4** (Incl. speciated phenols)	**VOCs**	**Provide as much information about the sample as you can**
40	SM060922-39	6/09/2022	Soil		1														
41	SM060922-40	6/09/2022	Soil					1											
42	SM060922-41	6/09/2022	Soil						1										
43	SM060922-42	6/09/2022	Soil					1											
44	SM060922-43	6/09/2022	Soil						1							1			305074
45	SM060922-44	6/09/2022	Soil																7/9/22 1030
46	SM060922-45	7/09/2022	Soil					1											
47	SM060922-46	7/09/2022	Soil						1							1			
48	SM060922-47	7/09/2022	Soil																
49	SM060922-48	7/09/2022	Soil					1											
50	SM060922-49	7/09/2022	Soil						1							1			
51	SM060922-50	7/09/2022	Soil																
52	SM060922-101	6/09/2022	Soil			1													
53	SM060922-103	6/09/2022	Soil				1												

Relinquished by (company):	Geo-Environmental Engineering	**Received by (company):**	**Samples Received: Cool or Ambient (circle one)**
Print Name:	Stephen McCormack	**Print Name:**	**Temperature Recieved at: (if applicable)**
Date & Time:	07-Sep-22	**Date & Time:**	**Transported by: Hand delivered / courier**
Signature:		**Signature:**	**Page No: 4 of 4**

Envirolab Services Pty Ltd
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25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 33524

Client Details

Client	Geo-Environmental Engineering
Attention	Stephen McCormack
Address	82 Bridge Street, Lane Cove, NSW, 2066

Sample Details

Your Reference	**G21071VAU**
Number of Samples	2 Soil
Date samples received	09/09/2022
Date completed instructions received	09/09/2022

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.

Report Details

Date results requested by	13/09/2022
Date of Issue	13/09/2022

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Results Approved By
Chris De Luca, Operations Manager
Tianna Milburn, Chemist

Authorised By



Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		33524-1
Your Reference	UNITS	SM060922-100
Date Sampled		06/09/2022
Type of sample		Soil
Date extracted	-	10/09/2022
Date analysed	-	11/09/2022
vTRH C_6 - C_9	mg/kg	<25
vTRH C_6 - C_{10}	mg/kg	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total BTEX	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	96

TRH Soil C10-C40 NEPM		
Our Reference		33524-1
Your Reference	UNITS	SM060922-100
Date Sampled		06/09/2022
Type of sample		Soil
Date extracted	-	10/09/2022
Date analysed	-	11/09/2022
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	74

PAHs in Soil		
Our Reference		33524-1
Your Reference	UNITS	SM060922-100
Date Sampled		06/09/2022
Type of sample		Soil
Date extracted	-	10/09/2022
Date analysed	-	11/09/2022
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.3
Anthracene	mg/kg	0.1
Fluoranthene	mg/kg	1.0
Pyrene	mg/kg	1.1
Benzo(a)anthracene	mg/kg	0.6
Chrysene	mg/kg	0.7
Benzo(b,j&k)fluoranthene	mg/kg	1.3
Benzo(a)pyrene	mg/kg	0.84
Indeno(1,2,3-c,d)pyrene	mg/kg	0.6
Dibenzo(a,h)anthracene	mg/kg	0.1
Benzo(g,h,i)perylene	mg/kg	0.6
Total +ve PAH's	mg/kg	7.2
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	1.2
Benzo(a)pyrene TEQ calc (Half)	mg/kg	1.2
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	1.2
Surrogate p-Terphenyl-d_{14}	%	102

OCP in Soil		
Our Reference		33524-1
Your Reference	UNITS	SM060922-100
Date Sampled		06/09/2022
Type of sample		Soil
Date extracted	-	10/09/2022
Date analysed	-	11/09/2022
alpha-BHC	mg/kg	<0.1
Hexachlorobenzene	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
Total +ve reported Aldrin + Dieldrin	mg/kg	<0.1
Total +ve reported DDT+DDD+DDE	mg/kg	<0.1
Surrogate 2-chlorophenol-d4	%	72

PCBs in Soil		
Our Reference		33524-1
Your Reference	UNITS	SM060922-100
Date Sampled		06/09/2022
Type of sample		Soil
Date extracted	-	10/09/2022
Date analysed	-	11/09/2022
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	%	94

Acid Extractable metals in soil		
Our Reference		33524-1
Your Reference	UNITS	SM060922-100
Date Sampled		06/09/2022
Type of sample		Soil
Date digested	-	10/09/2022
Date analysed	-	12/09/2022
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	3
Copper	mg/kg	13
Lead	mg/kg	72
Mercury	mg/kg	<0.1
Nickel	mg/kg	1
Zinc	mg/kg	14

Moisture		
Our Reference		33524-1
Your Reference	UNITS	SM060922-100
Date Sampled		06/09/2022
Type of sample		Soil
Date prepared	-	10/09/2022
Date analysed	-	12/09/2022
Moisture	%	9.1

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105°C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	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. 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	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD or GC-MS. 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	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Note, For OCs 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	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. '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)-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 is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/09/2022	[NT]	[NT]	[NT]	[NT]	10/09/2022	[NT]
Date analysed	-			11/09/2022	[NT]	[NT]	[NT]	[NT]	11/09/2022	[NT]
vTRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	85	[NT]
vTRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	85	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	77	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	97	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	85	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	82	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: TRH Soil C10-C40 NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/09/2022	[NT]	[NT]	[NT]	[NT]	10/09/2022	[NT]
Date analysed	-			11/09/2022	[NT]	[NT]	[NT]	[NT]	11/09/2022	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	80	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	80	[NT]
Surrogate o-Terphenyl	%		Org-020	75	[NT]	[NT]	[NT]	[NT]	67	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/09/2022	[NT]	[NT]	[NT]	[NT]	10/09/2022	[NT]
Date analysed	-			11/09/2022	[NT]	[NT]	[NT]	[NT]	11/09/2022	[NT]
Naphthalene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Acenaphthylene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Fluorene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Phenanthrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Pyrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022	<0.05	[NT]	[NT]	[NT]	[NT]	110	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022	98	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: OCP in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/09/2022	[NT]	[NT]	[NT]	[NT]	10/09/2022	[NT]
Date analysed	-			11/09/2022	[NT]	[NT]	[NT]	[NT]	11/09/2022	[NT]
alpha-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Hexachlorobenzene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
gamma-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
delta-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
alpha-chlordane	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Dieldrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Endrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Methoxychlor	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022	86	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			10/09/2022	[NT]	[NT]	[NT]	[NT]	10/09/2022	[NT]
Date analysed	-			11/09/2022	[NT]	[NT]	[NT]	[NT]	11/09/2022	[NT]
Aroclor 1016	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Aroclor 1260	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-fluorobiphenyl	%		Org-022	98	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date digested	-			10/09/2022	[NT]	[NT]	[NT]	[NT]	10/09/2022	[NT]
Date analysed	-			12/09/2022	[NT]	[NT]	[NT]	[NT]	12/09/2022	[NT]
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	[NT]	[NT]	107	[NT]
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	[NT]	[NT]	107	[NT]
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	108	[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.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	Geo-Environmental Engineering Pty Ltd
Project Mgr:	S. McCormack
Sampler:	S. McCormack
Address:	82 Bridge Street Lane Cove NSW 2066
Email:	stephen@geoenvironmental.com.au zachary@geoenvironmental.com.au
Phone:	0431 480 980

Client Project Name and Number:	G21071VAU
PO No.:	
Envirolab Services Quote No. :	
Date results required:	
Or choose: standard / 1 day / 2 day / 3 day / **5 day**	**5 days**
Note: Inform lab in advance if urgent turnaround is required - surcharge applies	

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201

E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie / Simon Song

Sample information | **Tests Required** | **Comments**

Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combination 5b	Combination 5a	Combination 5	Combination 3	Combination 3a	Metals	Combination 1m	Combination 7 (incl speciated phenols)	Combination 7a (incl speciated phenols)	Combination 4a (incl. speciated phenols)	BTEXN	TRH (vol)/BTEXN	PAHs	Combination 4 (incl. speciated phenols)	VOCs	Provide as much information about the sample as you can
1 ~~HR~~	SM060922-100	6/09/2022	Soil			1													
2 ~~HR~~	SM060922-102	6/09/2022	Soil																
																			305074 7/9/22 KW
		NOTE: Please Send These Samples to Melbourne For Analysis																	

Relinquished by (company):	ELS Syd	**Received by (company):**	ELS Mel6
Print Name:	Clessman	**Print Name:**	Olsen
Date & Time:	08/09/22 1200	**Date & Time:**	9/9/22 12.20pm
Signature:		**Signature:**	
	Geo-Environmental Engineering		
	Stephen McCormack		
	07-Sep-22		

Samples Received Cool or Ambient (circle one)
Temperature Recieved at: 10 °C (if applicable)
Transported by: Hand delivered / courier
#33524

Page No: 1 of 1

Icepack Sealed

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

CERTIFICATE OF ANALYSIS 336931

Client Details

Client	Geo-Environmental Engineering
Attention	Stephen McCormack
Address	82 Bridge St, Lane Cove, NSW, 2066

Sample Details

Your Reference	**E23026VAU**
Number of Samples	8 Soil, 1 Water
Date samples received	03/11/2023
Date completed instructions received	03/11/2023

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	10/11/2023
Date of Issue	10/11/2023

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Asbestos Approved By
Analysed by Asbestos Approved Analyst: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Loren Bardwell, Development Chemist
Lucy Zhu, Asbestos Supervisor
Tim Toll, Chemist (FAS)

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		336931-1	336931-2	336931-3	336931-4	336931-6
Your Reference	UNITS	ZZ311023-01	ZZ311023-02	ZZ311023-03	ZZ311023-04	ZZ311023-100
Date Sampled		31/10/2023	31/10/2023	31/10/2023	31/10/2023	31/10/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Date analysed	-	07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	%	102	102	102	95	98

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		336931-7	336931-8
Your Reference	UNITS	Trip Blank	Trip Spike
Date Sampled		31/10/2023	31/10/2023
Type of sample		Soil	Soil
Date extracted	-	06/11/2023	06/11/2023
Date analysed	-	07/11/2023	07/11/2023
TRH C_6 - C_9	mg/kg	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	[NA]
Benzene	mg/kg	<0.2	92%
Toluene	mg/kg	<0.5	91%
Ethylbenzene	mg/kg	<1	90%
m+p-xylene	mg/kg	<2	91%
o-Xylene	mg/kg	<1	91%
Naphthalene	mg/kg	<1	[NA]
Total +ve Xylenes	mg/kg	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	93	102

svTRH (C10-C40) in Soil						
Our Reference		336931-1	336931-2	336931-3	336931-4	336931-6
Your Reference	UNITS	ZZ311023-01	ZZ311023-02	ZZ311023-03	ZZ311023-04	ZZ311023-100
Date Sampled		31/10/2023	31/10/2023	31/10/2023	31/10/2023	31/10/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Date analysed	-	07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<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	<100	100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	100
Surrogate o-Terphenyl	%	108	99	100	94	106

PAHs in Soil						
Our Reference		336931-1	336931-2	336931-3	336931-4	336931-6
Your Reference	UNITS	ZZ311023-01	ZZ311023-02	ZZ311023-03	ZZ311023-04	ZZ311023-100
Date Sampled		31/10/2023	31/10/2023	31/10/2023	31/10/2023	31/10/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Date analysed	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.3	<0.1	0.8	<0.1	0.3
Pyrene	mg/kg	0.3	<0.1	0.8	<0.1	0.3
Benzo(a)anthracene	mg/kg	0.2	<0.1	0.5	<0.1	0.2
Chrysene	mg/kg	0.2	<0.1	0.5	<0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	0.5	<0.2	1	<0.2	0.6
Benzo(a)pyrene	mg/kg	0.2	<0.05	0.62	<0.05	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<0.1	0.4	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	0.4	<0.1	0.2
Total +ve PAH's	mg/kg	2.0	<0.05	5.3	<0.05	2.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.8	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.9	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.9	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	107	110	116	111	107

Organochlorine Pesticides in soil					
Our Reference		336931-1	336931-3	336931-4	336931-6
Your Reference	UNITS	ZZ311023-01	ZZ311023-03	ZZ311023-04	ZZ311023-100
Date Sampled		31/10/2023	31/10/2023	31/10/2023	31/10/2023
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Date analysed	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	0.2	<0.1	<0.1	0.5
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	0.2	<0.1	<0.1	0.5
Surrogate TCMX	%	95	115	112	97

PCBs in Soil					
Our Reference		336931-1	336931-3	336931-4	336931-6
Your Reference	UNITS	ZZ311023-01	ZZ311023-03	ZZ311023-04	ZZ311023-100
Date Sampled		31/10/2023	31/10/2023	31/10/2023	31/10/2023
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Date analysed	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	115	112	106

Acid Extractable metals in soil						
Our Reference		336931-1	336931-2	336931-3	336931-4	336931-6
Your Reference	UNITS	ZZ311023-01	ZZ311023-02	ZZ311023-03	ZZ311023-04	ZZ311023-100
Date Sampled		31/10/2023	31/10/2023	31/10/2023	31/10/2023	31/10/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Date analysed	-	08/11/2023	08/11/2023	08/11/2023	08/11/2023	08/11/2023
Arsenic	mg/kg	28	<4	<4	<4	26
Cadmium	mg/kg	0.5	<0.4	<0.4	<0.4	0.4
Chromium	mg/kg	27	<1	2	<1	27
Copper	mg/kg	72	1	16	1	74
Lead	mg/kg	190	6	120	4	170
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	<1	1	<1	7
Zinc	mg/kg	280	8	200	4	260

Moisture						
Our Reference		336931-1	336931-2	336931-3	336931-4	336931-6
Your Reference	UNITS	ZZ311023-01	ZZ311023-02	ZZ311023-03	ZZ311023-04	ZZ311023-100
Date Sampled		31/10/2023	31/10/2023	31/10/2023	31/10/2023	31/10/2023
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	06/11/2023	06/11/2023	06/11/2023	06/11/2023	06/11/2023
Date analysed	-	07/11/2023	07/11/2023	07/11/2023	07/11/2023	07/11/2023
Moisture	%	9.8	2.7	5.8	4.9	11

Asbestos ID - soils			
Our Reference		336931-1	336931-3
Your Reference	UNITS	ZZ311023-01	ZZ311023-03
Date Sampled		31/10/2023	31/10/2023
Type of sample		Soil	Soil
Date analysed	-	09/11/2023	09/11/2023
Sample mass tested	g	Approx. 40g	Approx. 30g
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	336931-9
Your Reference		ZZ311023-R
Date Sampled		31/10/2023
Type of sample		Water
Date extracted	-	04/11/2023
Date analysed	-	06/11/2023
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
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	%	102
Surrogate Toluene-d8	%	101
Surrogate 4-Bromofluorobenzene	%	108

svTRH (C10-C40) in Water		
Our Reference	UNITS	336931-9
Your Reference		ZZ311023-R
Date Sampled		31/10/2023
Type of sample		Water
Date extracted	-	07/11/2023
Date analysed	-	07/11/2023
TRH C_{10} - C_{14}	µg/L	<100
TRH C_{15} - C_{28}	µg/L	<200
TRH C_{29} - C_{36}	µg/L	<200
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<100
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<200
TRH >C_{34} - C_{40}	µg/L	<200
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	92

Metals in Waters - Acid extractable		
Our Reference	UNITS	336931-9
Your Reference		ZZ311023-R
Date Sampled		31/10/2023
Type of sample		Water
Date prepared	-	06/11/2023
Date analysed	-	07/11/2023
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

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.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
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.
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.
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	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)-BTEX 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)-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 is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

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	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[NT]
Date analysed	-			07/11/2023	1	07/11/2023	07/11/2023		07/11/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	116	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	116	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	116	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	116	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	110	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	118	[NT]
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	118	[NT]
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	104	1	102	94	8	102	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[NT]
Date analysed	-			07/11/2023	1	07/11/2023	07/11/2023		07/11/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	136	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	121	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	136	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	121	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	[NT]
Surrogate o-Terphenyl	%		Org-020	97	1	108	99	9	123	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[NT]
Date analysed	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	105	[NT]
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	115	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	[NT]
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	0.3	0.3	0	114	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.3	0.3	0	107	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.2	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.2	0	89	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	0.5	0.6	18	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	0.2	0.2	0	114	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.3	40	[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	0.2	0.2	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	109	1	107	105	2	112	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[NT]
Date analysed	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[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	98	[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	93	[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	97	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	[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	123	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	129	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	113	[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	90	[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	0.2	0.3	40	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	125	[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 TCMX	%		Org-022/025	111	1	95	93	2	114	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[NT]
Date analysed	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[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	113	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021/022/025	111	1	106	105	1	114	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			06/11/2023	1	06/11/2023	06/11/2023		06/11/2023	[NT]
Date analysed	-			08/11/2023	1	08/11/2023	08/11/2023		08/11/2023	[NT]
Arsenic	mg/kg	4	Metals-020	<4	1	28	25	11	111	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	0.5	<0.4	22	104	[NT]
Chromium	mg/kg	1	Metals-020	<1	1	27	23	16	109	[NT]
Copper	mg/kg	1	Metals-020	<1	1	72	51	34	107	[NT]
Lead	mg/kg	1	Metals-020	<1	1	190	160	17	108	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	108	[NT]
Nickel	mg/kg	1	Metals-020	<1	1	6	6	0	108	[NT]
Zinc	mg/kg	1	Metals-020	<1	1	280	240	15	107	[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	-			04/11/2023	[NT]	[NT]	[NT]	[NT]	04/11/2023	[NT]
Date analysed	-			06/11/2023	[NT]	[NT]	[NT]	[NT]	06/11/2023	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	100	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	108	[NT]	[NT]	[NT]	[NT]	98	[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	-			07/11/2023	[NT]	[NT]	[NT]	[NT]	07/11/2023	[NT]
Date analysed	-			07/11/2023	[NT]	[NT]	[NT]	[NT]	07/11/2023	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	105	[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]	93	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	105	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	85	[NT]	[NT]	[NT]	[NT]	84	[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	-			07/11/2023	[NT]	[NT]	[NT]	[NT]	07/11/2023	[NT]
Date analysed	-			07/11/2023	[NT]	[NT]	[NT]	[NT]	07/11/2023	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	101	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	95	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	100	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	106	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	109	[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]	93	[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

TRH Water(C10-C40) NEPM - The PQL has been raised due to the limited amount of sample 336931-9 available for testing.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-001 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.
Note: Samples 336931-1 & 3 were sub-sampled from jars provided by the client.

coc 3/11/23 0951

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	Geo-Environmental Engineering Pty Ltd	**Client Project Name and Number:** E23026VAU	**Envirolab Services** 12 Ashley St, Chatswood, NSW, 2067
Project Mgr:	S. McCormack	**PO No.:**	
Sampler:	Z.Ziesel	**Envirolab Services Quote No.:**	**Phone:** 02 9910 6200
Address:	2 / 5-6 Malta Street, Fairfield East NSW	**Date results required:**	**Fax:** 02 9910 6201
Email:	stephen@geoenvironmental.com.au zachary@geoenvironmental.com.au	Or choose: standard / 1 day / 2 day / 3 day/ **5 day** ☐ surcharge *Note: Inform lab in advance if urgent turnaround is required - applies*	**E-mail:** ahie@envirolabservices.com.au
Phone:	0431 480 980		**Contact:** Aileen Hie

Sample information				Tests Required														Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combination 5b	Combination 5a	Combination 5	Combination 3	Combination 3a	Metals	TRH (vol)/BTEXN	Combination 4 (incl. specialted phenols)	BTEXN	VOCs	Hardness	Combination 1M				Provide as much information about the sample as you can
1	ZZ311023-01	31/10/2023	Soil		1														
2	ZZ311023-02	31/10/2023	Soil				1												
3	ZZ311023-03	31/10/2023	Soil		1														
4	ZZ311023-04	31/10/2023	Soil			1													
5	ZZ311023-05	31/10/2023	Soil																
6	ZZ311023-100	31/10/2023	Soil			1													
7	Trip Blank	31/10/2023	Sand							1									
8	Trip Splkie	31/10/2023	Sand									1							
9	ZZ311023-R	31/10/2023	Water												1				

Relinquished by (company):	Geo-Environmental Engineering	**Received by (company):** EA	**Samples Received:** Cool or Ambient (circle one)
Print Name:	Zachary Ziesel	**Print Name:** HB	**Temperature Recieved at:** 10 (if applicable)
Date & Time:	03-Nov-23	**Date & Time:** 3/11/23 11:00	**Transported by:** Hand delivered / courier
Signature:		**Signature:**	Page No: 1 of 1

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

Job No: 336931

Date Received: 3/11/23
Time Received: 11:00
Received By: HB
Temp: ~~Cool~~/Ambient
Cooling: ~~Ice~~/Icepack
Security: Intact/Broken/~~None~~

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 40557

Client Details

Client	Geo-Environmental Engineering
Attention	Stephen McCormack
Address	82 Bridge Street, Lane Cove, NSW, 2066

Sample Details

Your Reference	**E23026VAU**
Number of Samples	1 Soil
Date samples received	08/11/2023
Date completed instructions received	08/11/2023

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.

Report Details

Date results requested by	14/11/2023
Date of Issue	13/11/2023

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Chris De Luca, Assistant Lab Manager
Tianna Milburn, Senior Chemist

Authorised By
Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		40557-1
Your Reference	UNITS	ZZ311023-101
Date Sampled		31/10/2023
Type of sample		Soil
Date extracted	-	09/11/2023
Date analysed	-	09/11/2023
vTRH C_6 - C_9	mg/kg	<25
vTRH C_6 - C_{10}	mg/kg	<25
TRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total BTEX	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	92

TRH Soil C10-C40 NEPM		
Our Reference		40557-1
Your Reference	UNITS	ZZ311023-101
Date Sampled		31/10/2023
Type of sample		Soil
Date extracted	-	09/11/2023
Date analysed	-	09/11/2023
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	100

PAHs in Soil		
Our Reference		40557-1
Your Reference	UNITS	ZZ311023-101
Date Sampled		31/10/2023
Type of sample		Soil
Date extracted	-	09/11/2023
Date analysed	-	09/11/2023
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j&k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d_{14}	%	128

OCP in Soil		
Our Reference		40557-1
Your Reference	UNITS	ZZ311023-101
Date Sampled		31/10/2023
Type of sample		Soil
Date extracted	-	09/11/2023
Date analysed	-	09/11/2023
alpha-BHC	mg/kg	<0.1
Hexachlorobenzene	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
Total +ve reported Aldrin + Dieldrin	mg/kg	<0.1
Total +ve reported DDT+DDD+DDE	mg/kg	<0.1
Surrogate 2-chlorophenol-d4	%	112

PCBs in Soil		
Our Reference		40557-1
Your Reference	UNITS	ZZ311023-101
Date Sampled		31/10/2023
Type of sample		Soil
Date extracted	-	09/11/2023
Date analysed	-	09/11/2023
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	%	114

Acid Extractable metals in soil		
Our Reference		40557-1
Your Reference	UNITS	ZZ311023-101
Date Sampled		31/10/2023
Type of sample		Soil
Date digested	-	09/11/2023
Date analysed	-	09/11/2023
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	<1
Copper	mg/kg	2
Lead	mg/kg	6
Mercury	mg/kg	<0.1
Nickel	mg/kg	<1
Zinc	mg/kg	11

Moisture		
Our Reference		40557-1
Your Reference	UNITS	ZZ311023-101
Date Sampled		31/10/2023
Type of sample		Soil
Date prepared	-	09/11/2023
Date analysed	-	10/11/2023
Moisture	%	2.3

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105°C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	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. 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 analysed by 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, For OCs 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/GC-MSMS. 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)-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 is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Date analysed	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
vTRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	96	[NT]
vTRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	82	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	90	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	102	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	94	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: TRH Soil C10-C40 NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Date analysed	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	84	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
Surrogate o-Terphenyl	%		Org-020	105	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Date analysed	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	120	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022/025	128	[NT]	[NT]	[NT]	[NT]	126	[NT]

QUALITY CONTROL: OCP in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Date analysed	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Hexachlorobenzene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	130	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	134	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	118	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022/025	108	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Date analysed	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Aroclor 1016	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Aroclor 1260	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-fluorobiphenyl	%		Org-022/025	116	[NT]	[NT]	[NT]	[NT]	116	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date digested	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Date analysed	-			09/11/2023	[NT]	[NT]	[NT]	[NT]	09/11/2023	[NT]
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	[NT]	[NT]	106	[NT]
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	[NT]	[NT]	107	[NT]
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	104	[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.

CHAIN OF CUSTODY - Client

ENVIROLAB SERVICES

Client:	Geo-Environmental Engineering Pty Ltd
Project Mgr:	S. McCormack
Sampler:	Z.Ziesel
Address:	2 / 5-6 Malta Street, Fairfield East NSW
Email:	stephen@geoenvironmental.com.au zachary@geoenvironmental.com.au
Phone:	0431 480 980

Client Project Name and Number: E23026VAU

PO No.:

Envirolab Services Quote No. :

Date results required:

Or choose: standard / 1 day / 2 day / 3 day/ **5 day**

Note: Inform lab in advance if urgent turnaround is required - surcharge applies

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200
Fax: 02 9910 6201

E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample Information				Tests Required														Comments
Envirolab Sample ID	**Client Sample ID**	**Date sampled**	**Type of sample**	**Combination 5b**	**Combination 5a**	**Combination 5**	**Combination 3**	**Combination 3a**	**Metals**	**TRH (vol)/BTEXN**	**Combination 4 (incl. specialted phenols)**	**BTEXN**	**VOCs**	**Hardness**	**Combination 1M**				**Provide as much information about the sample as you can**
1	ZZ311023-101	31/10/2023	Soil			1													
		PLEASE SEND TO YOUR MELBOURNE LAB																	

Relinquished by (company):	Geo-Environmental Engineering	**Received by (company):**	ELS
Print Name:	Zachary Ziesel	**Print Name:**	HAS
Date & Time:	03-Nov-23	**Date & Time:**	3/11/23 11:00
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: 10 **(if applicable)**
Transported by: Hand delivered / courier

Relinquished by: ELS SYD
Sarah P Sala
06/11/23, 1120

336931
ELS SYD

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

Job No: 336930
Date Received: 3/11/23
Time Received: 11:00
Received By: HAS
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

ENVIROLAB
Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500

Job No: 40557
Date Received: 3/11/23
Time Received: 12:50
Received By: KV ECS 8.9
Temp: Cool/Ambient
Cooling: Ice/Icepack None
Security: Intact/Broken/None