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SUTHERLAND &
ASSOCIATES PLANNING

Detailed Site Investigation

143A Stoney Creek Rd, Beverly Hills NSW

E23967.E02_Rev2
8 May 2020

Document Control

Report Title: Detailed Site Investigation

Report No: E23967.E02_Rev2

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Revision	Details	Date	Amended By
0	Original	5 November 2018	-
1	Updated development plans	7 February 2020	NG
2	Updated development plans	8 May 2020	NG

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Executive Summary

Background

Mr Aaron Sutherland of Sutherland & Associates Planning engaged EI Australia Pty Ltd (EI) to conduct a Detailed Site Investigations (DSI) for the property located at 143A Stoney Creek Rd, Beverly Hills NSW ('the site').

The site is currently occupied by a single storey oncrete building with flat metal roof and is located approximately 12 km south west of the Sydney central business district (**Figure A.1**). The site comprises of Lot 2 and 3 in DP1205598 and is situated within the Local Government Area Georges River Council, covering a total area of approximately 0.25 ha, as depicted in **Figure A.2**.

Objectives

The main objectives of the assessment were to:

- Characterise site environmental conditions in relation to the nature, degree and sources of any soil, vapour and groundwater impacts;
- Target potentially impacted areas identified during the preliminary stages of the assessment for intrusive investigation;
- Understand the influence of site specific, geologic and hydrogeological conditions on the potential fate and transport of any impacts that may be identified;
- Evaluate potential risks that identified impacts may pose to human health and the environment; and
- Where site contamination is confirmed, provide data to assist in the selection and design of appropriate remedial options.

Findings

The property located at 143A Stoney Creek Rd, Beverly Hills NSW was the subject of a Detailed Site Investigations (DSI) that was conducted in order to assess the nature and degree of on-site contamination associated with current and former uses of the property. Based on the findings of this assessment it was concluded that:

- The site comprised a rectangular shaped block, covering a total area of approximately 0.25 hectares. The site was bound by Stoney Creek Road (north-west), Cambridge Street (north-east) and individual residential dwellings (south-east and south-west);
- The site was free of statutory notices issued by the NSW EPA;
- Soil sampling and analysis was conducted at eight(8) test bore locations (BH1M – BH8).
- The sub-surface layers comprised of anthropogenic fill materials underlain by natural clays and shale bedrock;
- All examined soil samples were evaluated on a qualitative basis for odour and visual signs of contamination (e.g. hydrocarbon odours, oil staining, petrochemical filming, asbestos fragments, ash, charcoal) and the following observations were noted:
    - Visual or olfactory evidence of hydrocarbon impacts were not noted at any of the borehole locations investigated during this assessment;

- Ash, slag or potential asbestos-cement fragments were not observed in boreholes; and
- Elevated VOC concentrations were not observed in samples field-screened using a portable PID fitted with a 10.9 eV lamp. The PID results are shown in the borehole logs (Appendix C).Groundwater was encountered at depths ranging from 1.15 – 2.25 mBGL;

- The heavy metals cadmium, copper, lead, mercury, nickel and zinc were identified at levels above the adopted GILs in all groundwater sampling locations. It was concluded that the detected groundwater metal levels do not pose an immediate threat to human health or the environment. Whether these results are treated as exceedances of the GILs, or representative of urban background groundwater conditions, the identified groundwater concentrations are not considered to represent a cause for environmental concern.

On review of the Conceptual Site Model (CSM) developed as part of this DSI, it was concluded that the model remains valid for the proposed development. However, due to the absence of the majority of contaminants highlighted within the CSM, the potential risk of complete exposure pathways to exist as highlighted within the CSM is considered to be low. A data gap, however, exists concerning building materials in onsite structures, soils beneath the buildings footprint, and the condition of fill covering the stormwater easement running through site. As such, an additional investigation should be undertaken prior to construction to finalise site characterisation.

Conclusions and Recommendations

Based on the findings of this report, and with consideration of the Statement of Limitations (**Section 13**), EI conclude that widespread contamination was not identified at the site during this investigation. Further investigation will be required in accordance with the recommendations provided in **Section 12** before construction can commence to identify any risks to maintenance and construction workers, and future site receptors. The proposed development includes demolition of the existing site structures, therefore in view of the above findings and in accordance with the NEPM 2013 guidelines; it is considered that the site can be made suitable for the proposed development on completion of the following recommendations:

- Prior to site demolition, carry out a Hazardous Materials Survey on existing site structures to identify potentially hazardous building products that may be released to the environment during demolition;
- Completion of additional site investigations to close existing data gaps for satisfactory characterisation of the site;
- Any soils to be excavated and removed from the site are to be waste classified in accordance with EPA (2014) *Waste Classification Guidelines*.

1. INTRODUCTION

1.1 Background and Purpose

Mr Aaron Sutherland of Sutherland & Associates Planning engaged EI Australia (EI) to conduct a Detailed Site Investigations (DSI) for the property located at 143A Stoney Creek Rd, Beverly Hills NSW ('the site').

The site is currently occupied by a single storey concrete building with flat metal roof and is located approximately 15 km south west of the Sydney central business district (**Figure A.1**). The site comprises of Lot 2 and 3 in DP1205598 and is situated within the Local Government Area of Georges River Council, covering a total area of approximately 2,460 m^2, as depicted in **Figure A.2**.

This assessment was conducted as part of an environmental due diligence process and this report is provided in support of a Development Application (DA) to Georges River Council and for the purpose of enabling the developer to meet its obligations under the *Contaminated Land Management Act 1997* (CLM Act), for the assessment and management of contaminated soil and/or groundwater.

1.2 Proposed Development

Based on the proposed development plans provided to EI (**Appendix K**), it is understood that the proposed development will consist of a three level commercial building overlying a three level basement car park.

1.3 Regulatory Framework

The following regulatory framework and guidelines were considered during the preparation of this report:

- ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia, August 2018;
- DEC (2007) Guidelines for the Assessment and Management of Groundwater Contamination;
- EPA (2017) Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3nd Edition);
- EPA (1995) Sampling Design Guidelines;
- NEPC (2013) Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater;
- NEPC (2013) Schedule B(2) Guideline on Site Characterisation;
- *Contaminated Land Management Act 1997*;
- *State Environment Protection Policy* – Remediation of Land (SEPP 55), and
- OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites.

1.4 Project Objectives

The proponent is required to undertake a detailed contamination assessment for any future development applications. The primary objectives of this investigation were therefore to:

- Evaluate the potential for site contamination on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources;

- Assess if soil contamination is suitable to allow deep soil landscaping for the proposed development;
- To investigate the degree of any potential contamination by means of limited intrusive sampling and laboratory analysis, for relevant contaminants; and
- Where site contamination is confirmed, make recommendations for the appropriate management of any contaminated soils and/or groundwater.

1.5 Scope of Works

To achieve the above objectives, the scope of works included:

1.5.1Desktop Study

- A review of relevant topographical, geological, hydrogeological and soil landscape maps for the project area;
- Search of historical aerial photographs archived at NSW Land and Property Information to review previous site use and the historical sequence of land development in the neighbouring area;
- A land titles search, also conducted through NSW Land and Property Information for information relating to historical ownership of the site;
- A search of Georges River Council records for information relating to operational site history and/or relevant environmental incidents;
- A search of NSW EPA Land Information records under the *Contaminated Land Management Act 1997* and *Protection of the Environment Operations Act 1997*;
- Search of SafeWork NSW records for information relating to possible underground tank approvals and locations, and dangerous goods stores; and
- A review of existing underground services on site.

1.5.2Field Work & Laboratory Analysis

- A detailed site walkover inspection;
- Drilling of boreholes at seven (8) locations, based on the available site history, in accessible areas across the site complying with the minimum sampling protocol recommended under EPA (1995);
- Installation of three groundwater monitoring well to a maximum depth of 8 m (or prior refusal), constructed to standard environmental protocols to investigate potential groundwater contamination;
- Multiple level soil sampling within fill and natural soils and one round of groundwater sampling from the constructed groundwater monitoring well; and
- Laboratory analysis of selected soil and groundwater samples for relevant analytical parameters as determined from the site history survey and field observations during the investigation programme.

1.5.3Data Analysis and Reporting

Preparation of a DSI report to document desk study findings, the conceptual site model, data quality objectives, investigation methodologies, and investigation results. The report also provides a record of observations made during the detailed site walkover inspection, borehole and monitoring well construction logs and a discussion of laboratory analytical results in regards to potential risks to human health, the environment and the aesthetic uses of the land.

2. SITE DESCRIPTION

2.1 Property Identification, Location and Physical Setting

The site identification details and associated information are presented in **Table 2-1**, while the site locality is shown in **Figure A.1**.

Table 2-1 Site Identification, Location and Zoning

Attribute	Description
Street Address	143A Stoney Creek Rd, Beverly Hills NSW
Location Description	Approx. 12 km south west of Sydney CBD, bound by Stoney Creek Road (north west), Cambridge Street (north east) and individual residential dwellings (south-east and south-west).
Site Coordinates	North-eastern corner of site (datum GDA94-MGA56): Easting: 322775.358 Northing: 6241351.455 (Source: http://maps.six.nsw.gov.au).
Site Area	Approx. 0.25 ha (2,460 m^2: http://maps.six.nsw.gov.au)
Lot and Deposited Plan (DP)	Lot 2 and 3 in DP1205598
State Survey Marks	Two State Survey (SS) marks are situated in close proximity to the site: • SS108354 located on the corner of Stoney Creek Rd and Melvin St (west of the site) and • SS58682 located on Cambridge St (east of the site). (Source: http://maps.six.nsw.gov.au).
Local Government Authority	Georges River Council
Parish	St George
County	Cumberland
Current Zoning	SP2 – Infrastructure: Public Administration Building (Hurstville Local Environment Plan, 2012)
Current Land Uses	Single storey concrete building with associated open aired car park (previously used as an NSW Roads and Traffic Authority (RTA) service centre and registry). The building was vacant at the time of the investigation.

2.2 Surrounding Land Use

The site is situated within an area of residential land use. Current uses of surrounding land are described in **Table 2-2**.

Table 2-2 Surrounding Land Uses

Direction Relative to Site	Land Use Description
North east	Stoney Creek Road followed by individual residential dwellings.
North west	Cambridge Street followed by individual residential dwellings
South east	Individual residential dwellings
South west	Individual residential dwellings

Sensitive land uses within the vicinity of the site include Beverly Hills Public School 250 m to the east and Greglea Retirement Community 200 m to the south-west.

2.3 Regional Setting

Regional topography, geology, soil landscape and hydrogeological information are summarised in **Table 2-3**.

Table 2-3 Regional Setting Information

Attribute	Description
Ground Topography	The site is generally flat with a slight incline towards the west.
Site Drainage	Site drainage is likely to be consistent with the general slope of the site to the west as well as through two stormwater pits located on the western portion of site. Stormwater is expected to drain to Wolli Creek to the north of site through municipal stormwater systems.
Regional Geology	With reference to the 1:100,000 scale Geological Series Sheet 9130 (Sydney), the site underlain by Wianamatta Group Shale, carbonaceous claystone, laminite, fine to medium grained lithic sandstone and rare coal.
Soil Landscapes	The Soil Conservation Service of NSW Soil Landscapes of the Sydney 1:100,000 Sheet (Chapman and Murphy, 2002) indicates that the site overlies the boundary of the Birrong (bg) and Blacktown (bt) landscapes. The Birrong landscape consists of level to gently undulating alluvial floodplain draining Wianamatta Group shales. Local relief to 5 m, slopes <3%. Broad valley flats. Extensively cleared tall open-forest and woodland. Soils are deep (>250 cm) Yellow Podzolic Soils (Dy2.42, Dy3.12) and Yellow Solodic Soils (Dy3.42) on older alluvial terraces; deep (>250 cm) Solodic Soils (Dy3.42) and Yellow Solonetz (Dy3.43) on current floodplain. The Blacktown landscape consist of gently undulating rises on Wianamatta Group shales and Hawkesbury shale. Local relief to 30 m, slopes are usually <5%. Broad rounded crests and ridges with gently inclined slopes. Cleared eucalypt woodland and tall open-forest (wet sclerophyll forests). Soils are shallow to moderately deep (<100cm) Red and Brown Podzolic Soils (Dr3.21, Dr3.11, Db2.11) on crests, upper slopes and well-drained areas; deep (150-300 cm) Yellow Podzolic Soils and Soloths (Dy2.11, Dy3.11) on lower slopes and in areas of poor drainage.
Acid Sulfate Soil Risk	The Hurstville LEP 2012 Acid Sulfate Soils Map does not give the site a class in relation to acid sulfate soils risk. With reference to the Prospect Parramatta Acid Sulfate Soil Risk Map (1:25,000 scale; Murphy, 1997), the site is located within an area of *No Known Occurrences*.
Nearest Surface Water Feature	Wolli Creek, located 1.2 km north of the site.
Inferred Groundwater Flow Direction	Groundwater flow has been inferred through gauging of installed groundwater wells as discussed in **Section 9.2**. Groundwater was inferred to flow towards the north-west.

2.4 Groundwater Bore Records and Groundwater Use

An online search of registered groundwater bores was conducted by EI on 18 September 2018 through the NSW Office of Water (Ref. http://allwaterdata.water.nsw.gov.au/water.stm). There were no registered bores within 500 m of the site.

2.5 Site Walkover Inspection

EI staff made a number of observations during a detailed site inspection on 13 August 2018. The recorded observations are summarised in **Table 2-4.**

Table 2-4 Summary of Buildings and Infrastructure

Allotment	Buildings	USTs/ASTs	Observations
143A Stoney Creek Rd, Beverly Hills NSW	Single storey commercial building. Concrete walls with flat metal room.	No evidence of USTs/ASTs observed.	The site is occupied by a former RTA building. The site includes an associated open aired car park. A large stormwater easement runs through the eastern portion of the site in a north-south orientation. The easement can be identified by the construction of the concrete hardstand.

3. SITE HISTORY AND SEARCHES

3.1 Site Land Titles Information / Historic Aerial Photography Review

A historical land titles search was conducted through Info Track Pty Ltd. Copies of relevant documents resulting from this search are presented in **Appendix I**. A summary of all the previous and current registered proprietors along with information obtained from the available historical aerial photographs, in relation to past potential land uses are presented in **Table 3-1**. The historical aerial photographs reviewed as part of this DSI included:

- 1930: Run 20, map 3427, 28 February;
- 1943: maps.six.nsw.gov.au
- 1951:, Run 18, print 466-18, May;
- 1982: Run 26, print 156, NSW 3527, 9 August;
- 1994: Print 105, October;
- 2016: maps.six.nsw.gov.au.

Table 3-1 Summary of Owners and Historical Aerial Photography

Date of Acquisition and term held	Registered Proprietor(s) & Occupations (where documented)	Site description based on historical aerial photographs	Associated business
As regards Lot 2 D.P. 1205598 **As regards the part tinted green on the attached Cadastre (Appendix I)**			
02.05.1888 (1888 to 1901)	The Penshurst Park Estate Company	No aerial photographs available.	
28.03.1901 (1901 to 1907)	Allen Cumming Degner (Baker)	No aerial photographs available.	
27.09.1907 (1907 to 1907)	Katherine Degner (Widow) (Application by Transmission not investigated)	No aerial photographs available.	
As regards the part tinted pink on the attached Cadastre (Appendix I)			
02.05.1888 (1888 to 1907)	The Penshurst Park Estate Company	No aerial photographs available.	
25.09.1907 (1907 to 1907)	Katherine Degner (Widow)	No aerial photographs available.	
Continued as regards the whole of Lot 2 D.P. 1205598			
27.09.1907 (1907 to 1916)	Henry Alfred Clyde (Gentleman)	No aerial photographs available.	
27.01.1916 (1916 to 1918)	Elizabeth Share (Married Woman)	No aerial photographs available.	

Date of Acquisition and term held	Registered Proprietor(s) & Occupations (where documented)	Site description based on historical aerial photographs	Associated business
21.01.1918 (1918 to 1962)	William Hare (Telegraph Linesman) Edith Mary Matilda Hare (Married Woman)	**1930:** Site is occupied by individual residential dwelling with associated front/back yard. **1943:** Site unchanged from 1930 aerial photograph. **1951:** Site unchanged from 1942 aerial photograph.	Residential
09.03.1962 (1962 to 2015)	The Commissioner for Motor Transport	**1982:** Northern portion of lot is occupied by a flat roofed commercial building. Southern portion of lot is an open aired carpark. Site resembles its state as at the time of writing. **1994:** Site unchanged from 1982 aerial photograph.	Government building
07.02.2015 (2015 to Date)	# Government Property NSW	**2016:** Site unchanged from 1994 aerial photograph.	Government building
Easements • 29.11.1940 (C966557)- Easement 11 feet wide • 31.03.1965 (J982243) – Easement for Stormwater Drainage variable width **Leases: - NIL**			
As regards Lot 3 D.P. 1205598 **As regards the part tinted blue on the attached Cadastre (Appendix I)**			
02.05.1888 (1888 to 1901)	The Penshurst Park Estate Company	No aerial photographs available.	
28.03.1901 (1901 to 1907)	Allen Cumming Degner (Baker)	No aerial photographs available.	
27.09.1907 (1907 to 1907)	Katherine Degner (Widow) (Application by Transmission not investigated)	No aerial photographs available.	
As regards the part tinted purple on the attached Cadastre (Appendix I)			
02.05.1888 (1888 to 1907)	The Penshurst Park Estate Company	No aerial photographs available.	
25.09.1907 (1907 to 1907)	Katherine Degner (Widow)	No aerial photographs available.	
Continued as regards the whole of Lot 3 D.P. 1205598			
27.09.1907 (1907 to 1916)	Henry Alfred Clyde (Gentleman)	No aerial photographs available.	
27.01.1916 (1916 to 1918)	Elizabeth Share (Married Woman)	No aerial photographs available.	

Date of Acquisition and term held	Registered Proprietor(s) & Occupations (where documented)	Site description based on historical aerial photographs	Associated business
21.01.1918 (1918 to 1975)	William Hare (Telegraph Linesman) Edith Mary Matilda Hare (Married Woman)	**1930:** Site is occupied by individual residential dwelling with associated front/back yard. **1943:** Site unchanged from 1930 aerial photograph. **1951:** Site unchanged from 1942 aerial photograph.	Residential
10.02.1975 (1975 to 1977)	William Hare (Widower Telegraph Linesman)	No aerial photographs available.	
13.07.1977 (1977 to 2015)	The Commissioner for Motor Transport	**1982:** site is covered by open aired carpark. Site resembles its state as at the time of writing. **1994:** Site unchanged from 1982 aerial photograph.	Government building
07.02.2015 (2015 to Date)	# Government Property NSW	**2016:** Site unchanged from 1994 aerial photograph.	Government building
Easements & Leases: - NIL			

Notes:
# Denotes Current Registered Proprietor

In summary, review of land titles records and historic aerial photography showed that the site was primarily residential up until at least 1982, where previous structures were demolished and the site was developed into a government motor vehicle service centre and registry (RTA).

3.2 Surrounding Lands Historical Aerial Photography Review

As part of the Site Land Titles Information / Historic Aerial Review, an assessment of surrounding land uses using historical aerial photographs sourced from NSW Land and Property Information was carried out. A summary of the pertinent information identified at surrounding land parcels from the reviewed photographs is presented in **Table 3-2**.

Table 3-2 Summary of Aerial Photograph Review

Aerial Photograph	Surrounding land uses based on historical aerial photographs
1930	Surrounding site area is primarily individual residential dwellings.
1943	Area land use unchanged from previous aerial photograph.
1951	Area land use unchanged from previous aerial photograph.
1982	Area land use unchanged from previous aerial photograph.
1994	Area land use unchanged from previous aerial photograph.
2017	Area land use unchanged from previous aerial photograph.

3.3 Council Information

A request to search the records of Georges River Council was requested on 17 August 2018. A search of the records did not reveal any documents indicating potential contaminating activities or works that may have occurred on site.

3.4 SafeWork NSW Dangerous Goods Register Records

A search of SafeWork NSW records relating to the site was requested by EI on 17 August 2018, on behalf of the Client. The search returned no information pertaining to the site. A copy of the SafeWork NSW search is included in **Appendix J**.

3.5 EPA Online Records

On 19 September 2018, an on-line search of the contaminated land public record of NSW Environment Protection Authority (EPA) Notices was conducted. This search confirmed that the NSW OEH had no regulatory involvement in relation to the area of investigation, or properties in proximity (<500 m) to the site. The contaminated land public record is a searchable database of:

- Orders made under Part 3 of the *Contaminated Land Management Act 1997* (CLM Act);
- Approved voluntary management proposals under the CLM Act that have not been fully carried out and where the approval of the EPA has not been revoked;
- Site Audit Statements provided to the EPA under Section 53B of the CLM Act that relate to significantly contaminated land;
- Where practicable, copies of any documentation formerly required to be part of the public record; and
- Actions taken by the EPA under Sections 35 and 36 of the *Environmentally Hazardous Chemicals Act 1985*.

A search through the List of NSW Contaminated Sites notified to the EPA under Section 60 of the CLM Act 1997 was also conducted on 19 September 2018. This list is maintained by NSW EPA and includes properties on which contamination has been identified. Not all notified land is deemed to be impacted significantly enough to warrant regulation by the EPA. The site, or properties in proximity (<500 m) to the site, have not been notified as contaminated to the EPA.

A search of the Protection of the Environment Operations (POEO) Act public register, regarding environmental protection licences, applications, notices, audits, pollution studies, and reduction programmes, did not identify any record for the site. A licence for Railway Systems activities was issued King Georges Road between Kingsgrove and Revesby. The licence (No. 12908) was issued to Leighton Contractors Pty Limited and allows for railways systems activities at any annual capacity.

4. PREVIOUS INVESTIGATIONS

4.1 Available documents

EI was not aware of or provided with any previous investigations carried out on the site.

5. CONCEPTUAL SITE MODEL

In accordance with NEPM (2013) *Schedule B2 – Guideline on Site Characterisation* and to aid in the assessment of data collection for the site, EI developed a conceptual site model (CSM) assessing plausible pollutant linkages between potential contamination sources, migration pathways and receptors. The CSM provides a framework for the review of the reliability and useability of the data collected and to identify data gaps in the existing site characterisation.

5.1 Contamination Sources

Base on the site history and the site inspection, the primary contaminant sources considered to be present at the site are outlined in **Table 5-1**.

Table 5-1Contaminant Sources

Contaminant Source	Potential Impacts
Surface filling	A wide range of potential inorganic and organic chemicals and asbestos
Demolition of former buildings	Potential paint and fibrous cement sheeting fragments potentially containing asbestos
Degradation of building surfaces (including fences)	Priority metals particularly Cu, Pb & Zn, paint fragments and asbestos fines.
Pesticide use in building footprints	Potential pesticide contamination of surface soils
Contamination form off-site sources	Potential groundwater contamination from off-site industrial sources
Potential contamination in areas not accessible during investigations	Potential impact from future demolition due to structure materials

5.2 Contaminants of Potential Concern

Based on the findings of the site contamination appraisal, the contaminants of potential concern COPC) at the site and the potential media impacts are outlined in **Table 5-2**. For definitions and abbreviations see glossary at end of report.

Table 5-2 Contaminants of Potential Concern

Contaminant	Soil Impacts[1]	Air Quality[1] Impacts	Groundwater Impacts[1]
Priority metals As, Cd, Cr, Cu, Hg, Ni, Pb, & Zn also commonly known as heavy metals (HMs)	M	L	M
Other metals Be, Co, Cr^{VI}, Mn, Se	L	L	L
Total recoverable hydrocarbons (TRH)	L	L	L
Monocyclic aromatic hydrocarbon compounds benzene, toluene, ethyl benzene and xylenes (BTEX)	L	L	L
Polycyclic aromatic hydrocarbons (PAH) including B(a)P TEQ	M	L	L
Volatile organic compounds (VOCs) including chlorinated volatile organic compounds (cVOCs)	L	L	L
Organochlorine and Organophosphate pesticides (OCP/ OPP)	M	L	L
Polychlorinated biphenyls (PCB)	M	L	L
Asbestos	M	L	N/A

Contaminant	Soil Impacts[1]	Air Quality[1] Impacts	Groundwater Impacts[1]
LNAPL or DNAPL	L	N/A	L
Others (See section 5.3)	M	L	L

Notes:
L – low risk,
M – medium/moderate risk,
H – high risk,
N/A – not applicable (or "-")

5.3 Other Contaminants of Concern

5.3.1Per or poly-fluoroalkyl substances (PFAS)

The NSW EPA (2017) auditor guidelines require that PFAS is considered in assessing contamination. EI use the following decision tree (**Table 5-3**) based on EnRisk (2016) for prioritising the potential for PFAS to be present on site and whether PFAS sampling of soil and water is required.

Table 5-3 PFAS Decision Tree

Preliminary Screening	Decision
Did fire training occur on-site?	No
Did fire training occur, or is an airport or fire station up-gradient of or adjacent to the site? [1]	No
Have "fuel" fires ever occurred on-site? (e.g. ignition of fuel (solvent, petrol, diesel, kerosene) tanks?)	No
Have PFAS been used in manufacturing or stored on-site?[2]	No
If Yes to any questions, has site analytical suite been optimised to include preliminary sampling and testing for PFAS in soil (ASLP Testing) and water?	No

Notes:
[1] Runoff from fire training areas may impact surface water, sediment and groundwater.
[2] PFAS is used wide range of industrial processes and consumer products, including in the manufacture of non-stick cookware, specialised garments and textiles, Scotchguard™ and similar products (used to protect fabric, furniture, leather and carpets from oils and stains), metal plating and in some types of fire-fighting foam (https://www.nicnas.gov.au/chemical-information/factsheets/chemical-name/perfluorinated-chemicals-pfas)

5.3.2Emerging chemicals

The NSW EPA uses chemical control orders (CCOs) as a primary legislative tool under the EHC Act (1985) to selectively and specifically control particular chemicals of concern, and limit their potential impact on the environment. CCOs provide the EPA a rapid and flexible mechanism for responding to emerging chemical issues. As with PFAS, EI has considered chemicals controlled by CCOs and other potential emerging chemicals in this assessment as outline in **Table 5-4**.

Table 5-4 Emerging or Controlled Chemicals

Chemicals of Concern (CCO or emerging)	Decision
Were aluminium smelter wastes used or stored on site (CCO, 1986)?	No
Do dioxin contaminated wastes (CCO, 1986) have the potential to impact the site? [1]	No
Were organotin products (CCO, 1989) used or stored on site ?[2]	No
Were polychlorinated biphenyls (PCBs) used or PCB wastes (CCO, 1997) stored on-site?[3]	Yes *If PCB containing pesticides were used onsite*

Chemicals of Concern (CCO or emerging)	Decision
Were scheduled chemical or wastes (CCO, 2004) used or stored[4]	Yes *If pesticides were used onsite*
Are other emerging chemicals suspected?[5]	No
If Yes to any questions, has site sampling suite been optimised to include specific sampling for other chemicals of concern in soil, air and water	Yes

Notes:
[1] From burning of certain chemicals, smelting or chemical manufacturing or fire on or near the site.
[2] From anti-fouling paints used or removed at boat & ship yards and marinas.
[3] From older transformer oils & electrical capacitors
[4] Twenty-four mostly organochlorine pesticides and industrial by-products
[5] Other chemicals considered as emerging e.g. 1,4 dioxane (associated with some cVOCs),

5.4 Potential Sources, Exposure Pathways and Receptors

Potential contamination sources, exposure pathways and human and environmental receptors that were considered relevant for this assessment are summarised along with a qualitative assessment of the potential risks posed by complete exposure pathways in **Table 5-5**.

Table 5-5 Conceptual Site Model

Potential Sources	Impacted Media	Chemicals of Potential Concern	Transport mechanism	Exposure pathway	Potential receptor
▪ Fill soils of unknown origin, ▪ Impacts from historical residential and commercial activities, ▪ Impacts from uncontrolled demolition of historic site structures, ▪ Historic pesticide use, ▪ Weathering of building structures, ▪ Spills from parked vehicles and ▪ Migration of contamination onto site from nearby properties and unknown contamination sources.	Soil	HM, TRH, PAH, OCP/OPP, PCB, BTEXN, asbestos	Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the site post redevelopment	▪ Ingestion ▪ Dermal contact ▪ Inhalation of dust particulates	▪ Construction and maintenance workers ▪ End users of the site post redevelopment
			Atmospheric dispersion from soil to outdoor and indoor air spaces	▪ Inhalation dust particulates	
		F1 and F2 TRH, BTEXN	Volatilisation of contamination from soil and diffusion to indoor air spaces	▪ Inhalation of vapours from impacted soil	
		HM, TRH, PAH, OCP, BTEXN	Plant uptake of contamination present in root zone	▪ Plant uptake	▪ Future ecological receptors (e.g. site vegetation in landscaped areas post redevelopment)
	Groundwater	HMs, TRH, BTEXN	Volatilisation of contamination from groundwater to indoor or outdoor air spaces (onsite and offsite)	▪ Inhalation of vapours	▪ End users of the site post-development ▪ Construction and maintenance workers ▪ Basements users
			Migration of dissolved phase impacts in groundwater	▪ Biota uptake, ▪ Ingestion ▪ Dermal contact	▪ Aquatic ecosystems ▪ Recreational water users
			Potential seepage into basement intercepting water table (onsite and offsite)	▪ Dermal contact ▪ Ingestion	▪ Basements users
Building fabrics containing hazardous materials	-	Lead, PCB and asbestos	Release of hazardous materials during uncontrolled demolition of building fabrics	▪ Ingestion; ▪ Dermal contact; ▪ Inhalation of airborne contaminants	▪ Construction and maintenance workers

5.5 Data Gaps

Based on information from the site walkover inspection and site history review, EI considered a programme of intrusive investigation was warranted to conduct targeted sampling at locations of known, potential sources of contamination (as listed in **Section 5.1**), with systematic sampling coverage in site areas where operational site history was not documented.

6. SAMPLING, ANALYTICAL AND QUALITY PLAN (SAQP)

The SAQP plays a crucial role in ensuring that the data collected as part of this, and ongoing environmental works carried out at the site are representative, and provide a robust basis for site assessment decisions. This SAQP includes the following:

- Data quality objectives, including a summary of the objectives of the ESA;
- Investigation methodology including media to be sampled, details of analytes and parameters to be monitored and a description of intended sampling points;
- Sampling methods and procedures;
- Field screening methods;
- Analysis Methods;
- Sample handling, preservation and storage; and
- Analytical QA/QC.

6.1 Data Quality Objectives (DQO)

In accordance with the US EPA (2006) *Data Quality Assessment* and the EPA (2017) *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme*, the process of developing Data Quality Objectives (DQO) was used by the EI assessment team to determine the appropriate level of data quality needed for the specific data requirements of the project. The DQO process that was applied for this assessment is documented in **Table 6-1**.

Table 6-1 Summary of Project Data Quality Objectives

DQO Steps	Details
1. State the Problem Summarise the contamination problem that will require new environmental data, and identify the resources available to resolve the problem; develop a conceptual site model	The site is to be developed for a three level commercial building overlying a three level basement car park. Historical information and site inspection identified the potential for contamination to be present in site soil and/or groundwater, contributed by various potential sources listed in **Section 5.1**. In light of the information derived from the available site history information and site observations, a conceptual site model has also been developed (**Section 5**). The investigation sampling must provide supportive information on the environmental conditions of the site to determine the site's suitability for the proposed development.
2. Identify the Goal of the Study (Identify the decisions) Identify the decisions that need to be made on the contamination problem and the new environmental data required to make them	Based on the objectives outlined in **Section 1.4** the decisions that need to be made are: ▪ Has the nature, extent and source of any soil, vapour and/or groundwater impacts onsite been defined? ▪ What impact do the site specific, geologic and hydrogeological conditions have on the fate and transport of any impacts that may be identified? ▪ Does the level of impact coupled with the fate and transport of identified COPCs represent an unacceptable risk to identified human and/or environmental receptors on or offsite? ▪ Does the collected data provide sufficient information to allow the selection and design of an appropriate remedial strategy, if necessary?
3. Identify Information Inputs (Identify inputs to decision) Identify the information needed to support any decision and specify which inputs require new environmental measurements	Inputs to the decision making process include: ▪ Proposed development plans and future land use; ▪ Available historical site information and site information; ▪ Areas of concern identified during the site inspection prior to intrusive investigations; ▪ National and NSW EPA guidelines endorsed under the NSW *Contaminated Land Management Act 1997*; ▪ Investigation sampling (soils and groundwater) and laboratory analysis for COPCs to verify the presence of onsite contamination and to evaluate the potential risks to sensitive receptors; and ▪ At the end of the assessment, a decision must be made regarding whether the soils and groundwater are suitable for the proposed development, or if additional investigation or remedial works are required to make the site suitable for proposed use).
4. Define the Boundaries of the Study Specify the spatial and temporal aspects of the environmental media that the data must represent to support decision	Lateral – The boundaries of the study are defined as the sites cadastral boundaries. Vertical – From the existing ground level, fill and natural soils. Temporal – Results are valid on the day of data and sample collection and remain valid as long as no changes occur on site or contamination (if present) does not migrate on site or on to the site from off-site sources.

DQO Steps	Details
5. Develop the Analytic Approach (Develop a decision rule) To define the parameter of interest, specify the action level, and integrate previous DQO outputs into a single statement that describes a logical basis for choosing from alternative actions	The decision rules for the investigation were: ▪ What are the characteristics of soil at the site? *Soil boreholes will be advanced to natural, sampled and logged to characterise underlying conditions.* ▪ What are the characteristics of groundwater at the site? *Groundwater monitoring wells will be installed to determine physical characteristics, chemical composition and flow direction of groundwater underlying the site.* ▪ Is the site contaminated by historic land use? *Soil and groundwater samples will be analysed for contaminants of potential concern and compared to relevant screening criteria.* ▪ Is the site suitable for the proposed land use? *If the concentrations of contaminants in the soil data are below the relevant health-based and ecological criteria for the intended land use; then the site will be deemed suitable for the proposed development.* ▪ Is additional information required to determine the suitability of the site for its proposed use? *Should additional information be required as determined by the conceptual site model (CSM), then appropriate recommendations will be provided.* ▪ Decision criteria for analytical data are defined by the Data Quality Indicators (DQI) in **Table 6-2**.
6. Specify Performance or Acceptance Criteria (Specify limits on decision errors) Specify the decision-maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data	Specific limits for this project are to be in accordance with NEPM, appropriate data quality indicators (DQIs) for assessing the useability of the data, and EI standard procedures for field sampling and handling. To assess the useability of the data, pre-determined DQIs for completeness, comparability, representativeness, precision and accuracy, as presented below in **Table 6-2**. If any of the DQIs are not met, further assessment will be necessary to determine whether the non-conformance will significantly affect the useability of the data. Corrective actions may include requesting further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of samples.

DQO Steps	Details
7. Develop the Detailed Plan for Obtaining Data (Optimise the design for obtaining data) Identify the most resource-effective sampling and analysis design for general data that are expected to satisfy the DQOs	Site history indicates the potential for contamination to exist. To achieve the decision rules, the intrusive investigation included: • Sampling of locations in a grid-based pattern across the site, targeting potential source areas identified from site history, site walkover and observations at the site made by EI. • Installation and sampling of groundwater wells in a triangular formation of the site to determine flow direction; • An upper soil profile sample will be collected at each borehole location and tested for contaminants of potential concern, to assess the conditions of the fill layer, and impacts from commercial and industrial activities at ground level. Further sampling would also be carried out at deeper soil layers. Samples will be selected based on field observations (including visual and olfactory evidence, as well as soil vapour screening in headspace samples) with consideration of subsurface stratigraphy. • Representative groundwater samples will be collected and analysed for groundwater characterisation; and Review of the results will be undertaken to determine if further intrusive investigation and additional sampling is warranted.

6.2 Data Quality Indicators

To ensure that the investigation data collected was of an acceptable quality, the investigation data set was assessed against the data quality indicators (DQI) outlined in **Table 6-2**, which related to both field and laboratory-based procedures. The assessment of data quality is discussed in **Section** 8.

Table 6-2 Data Quality Indicators

Data Quality Objective	Data Quality Indicator	Acceptable Range
Accuracy	Field – Trip blank (laboratory prepared) Laboratory – Laboratory control spike and matrix spike	< laboratory limit of reporting (LOR) Prescribed by the laboratories
Precision	Field – Blind replicate and spilt duplicate Laboratory – Laboratory duplicate and matrix spike duplicate	< 30 % relative percentage difference (RPD [%]) Prescribed by the laboratories
Representativeness	Field – Trip blank (laboratory prepared) Laboratory – Method blank	< laboratory limit of reporting (LOR) Prescribed by the laboratories
Completeness	Completion (%)	-

7. ASSESSMENT METHODOLOGY

7.1 Sampling Rationale

With reference to the CSM described in **Section** 5, soil and groundwater investigation works were planned in accordance with the following rationale:

- Sampling fill and natural soils from eight test bore locations located systematically across the site using a grid-based sampling pattern to characterise in-situ soils;
- Sampling groundwater during a single groundwater monitoring event (GME) at three (3) monitoring wells located close to the up gradient and down gradient site boundaries to assess for potential groundwater impacts; and
- Laboratory analysis of representative soil and groundwater samples for the identified chemicals of concern.

7.2 Investigation Constraints

While the number of test bores drilled and monitoring wells installed during the investigation phase achieved the planned investigation scope described in **Section 6.1**, due to access constraints, soils beneath the site building could not be investigated due to access constraints.

7.3 Assessment Criteria

The assessment criteria proposed for this project are outlined in **Table 7-1**. These were selected from available published guidelines that are endorsed by national or state regulatory authorities, with due consideration of the exposure scenario that is expected for various parts of the site, the likely exposure pathways and the identified potential receptors.

Table 7-1 Adopted Investigation Levels for Soil and Groundwater

Environmental Media	Adopted Guidelines	Rationale
Soil	NEPM, 2013 Soil HILs, EILs, HSLs, ESLs & Management Limits for TPHs	**Soil Health-based Investigation Levels (HILs)** Samples were assessed against the NEPM 2013 HIL-A thresholds for residential settings with childcare centres, as EI has been informed that a childcare centre will potentially occupy the ground floor of the development. EI notes that the development plans have been updated to consist of a commercial building. Should any future testing be undertake, HIL-D for commercial land settings would be the appropriate guideline to implement. **Ecological Investigation Levels (EILs)** NEPM (2013) residential EILs / ESLs were considered in the absence of development plans as a conservative approach. EILs / ESLs only apply to the top 2.0 m (root zone). The derived EIL criteria presented by EI are based on the addition of site specific Added Contaminant Limit (ACL) criteria and the Ambient Background Concentration (ACL) for an old high traffic residential suburb. The adopted ESL criteria presented by EI are based on conservative coarse grained criteria. EIL for benzo(a)pyrene was taken from CRC Care (2017). *Risk-based management and remediation guidance for benzo(a)pyrene* **Soil Health-based Screening Levels (HSLs)** The NEPM 2013 Soil HSL-A&B thresholds for residential sites for vapour intrusion would be applied to assess for potential human health impacts from residual vapours resulting from petroleum, BTEX & naphthalene. HSL-A&B were used as the use case scenario for the basement was unable to be confirmed. EI notes that the development plans have been updated to consist of a commercial building. Should any future testing be undertake, HSL-D for commercial land settings would be the appropriate guideline to implement. Soils were screened for asbestos on a presence/absence basis. **Management Limits for Petroleum Hydrocarbons** Should the ESLs and HSLs be exceeded for petroleum hydrocarbons, soil samples would also assessed against the NEPM 2013 *Management Limits* for the TRH fractions F1 – F4 to assess propensity for phase-separated hydrocarbons (PSH), fire and explosive hazards & adverse effects on buried infrastructure.
Groundwater	NEPM, 2013 GILs for Marine Waters	**Groundwater Investigation Levels (GILs) for Marine Water** NEPM 2013 provides GILs for typical, slightly-moderately disturbed aquatic ecosystems, which are based on the ANZG 2018 Trigger Values (TVs) for the 95% level of protection of aquatic ecosystems; however, the 99% TVs were applied for the bio-accumulative metals *cadmium* and *mercury*. The marine criteria were considered relevant as Wolli Creek leads into the Cooks River and ultimately Botany Bay.
	NEPM, 2013 Groundwater HSLs for Vapour Intrusion	**Health-based Screening Levels (HSLs)** The NEPM 2013 groundwater HSLs for vapour intrusion were used to assess for potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene impacts. The *HSL A&B* thresholds for residential sites were applied for groundwater due to the basements use case scenario not being confirmed.

Environmental Media	Adopted Guidelines	Rationale
	NEPM, 2013 GILs for Drinking purposes	**Drinking Water GILs** The NEPM (2013) GILs for drinking water quality were applied for the secondary contact exposure pathway scenario, where contact with groundwater may occur in basements . These were based on the Australian Drinking Water Guidelines (Ref. NHMRC, 2011).

For the purposes of this investigation, the adopted soil assessment criteria are referred to as the Soil Investigation Levels (SILs) and the adopted groundwater assessment criteria are referred to as the Groundwater Investigation Levels (GILs). SILs and GILs are presented alongside the analytical results in the corresponding summary tables, which are discussed in **Section 9**.

7.4 Soil Investigation

The soil investigation works conducted at the site are described in **Table 7-2**. Test bore locations are illustrated in **Figure A.2**.

Table 7-2 Summary of Soil Investigation Methodology

Activity/Item	Details
Fieldwork	The site investigation was conducted on 14 August 2018. All test bores were completed to target depth or refusal.
Drilling Method	Test bore BH1M – BH8 was drilled using a solid flight auger drilling rig.
Soil Logging	Drilled soils were classified in the field with respect to lithological characteristics and evaluated on a qualitative basis for odour and visual signs of contamination. Soil classifications and descriptions were based on Unified Soil Classification System (USCS) and Australian Standard (AS) 4482.1-2005. Bore logs are presented in **Appendix C**.
Field Observations (including visual and olfactory signs of potential contamination)	A summary of field observations is provided, as follows: ▪ No visual signs of contamination were observed and no suspicious odours were detected during any stage of the field investigation programme; ▪ fibre cement sheet fragments were not observed in any drilling cuttings; and ▪ No ash or slag was noted during the intrusive investigation.
Soil Sampling	▪ Soil samples were collected using a dry grab method (unused, dedicated nitrile gloves) & placed into laboratory-supplied, acid-washed, solvent-rinsed glass jars. ▪ Blind field duplicates was separated from the primary samples and placed into glass jars. ▪ A small amount of duplicate was collected from each soil samples and placed into zip-lock bag for Photo-ionisation Detector (PID) screening. ▪ A small amount of duplicate was separated from all fill samples and placed into a zip-lock bag for asbestos analysis.
Decontamination Procedures	*Drilling Equipment* - The drilling rods were decontaminated between sampling locations with potable water until the augers were free of all residual materials. *Sampling Equipment* – Dedicated gloves were used for each sample, and any trowel or shovel used was decontaminated between uses.

Activity/Item	Details
Sample Preservation	Samples were stored in a refrigerated (ice-filled) chest, whilst on-site and in transit to the laboratory. All samples were submitted and analysed within the required holding period, as documented in laboratory reports discussed in a later section.
Management of Soil Cuttings	Soil cuttings were used as backfill for completed boreholes.
Quality Control & Laboratory Analysis	A number of soil samples were submitted for analysis of previously-identified COPC by SGS Laboratories (SGS). QA/QC testing comprised intra-laboratory duplicates ('field duplicates') tested blind by SGS and an inter-laboratory field duplicate tested blind by Envirolab Services (Envirolab). All samples were transported under strict Chain-of-Custody (COC) conditions and COC certificates and laboratory sample receipt documentation were provided to EI for confirmation purposes, as discussed in **Section 9**.
Soil Vapour Screening	Screening for potential VOCs in collected soil samples was conducted using a Photo-ionisation Detector (PID), as volatile odours were not detected at any sampling location during the course of the fieldwork.

7.5 Groundwater Investigation

The groundwater investigation works conducted at the site are described in **Table 7-3**. Monitoring well locations are illustrated in **Figure A.2**.

Table 7-3 Summary of Groundwater Investigation Methodology

Activity/Item	Details
Fieldwork	Groundwater monitoring wells were installed and developed on 14 August 2018; whereas, water level gauging, well purging, field testing and groundwater sampling was conducted on 20 August 2018.
Well Construction	Test bores were converted to groundwater monitoring wells as follows: ▪ One, 3.9m deep, onsite well identified as BH1M; ▪ One, 4.2 m deep, onsite well identified as BH2M; ▪ One, 4.0 m deep, onsite well identified as BH3M; Boreholes for monitoring well installation were drilled using a mechanical, solid-flight auger rig. Well construction details are tabulated in **Table 9-2** and documented in the bore logs presented in **Appendix C**.
Well Construction (continued)	Well construction was in general accordance with the standards described in NUDLC, 2012 and involved the following: ▪ 50 mm, Class 18 uPVC, threaded, machine-slotted screen and casing, with slotted intervals in shallow wells set to screen to at least 500 mm above the standing water level to allow sampling of phase-separated hydrocarbon product, if present; ▪ Base and top of each well was sealed with a uPVC cap; ▪ Annular, graded sand filter was used to approximately 300 mm above top of screen interval; ▪ Granular bentonite was applied above annular filter to seal the screened interval; ▪ Drill cuttings were used to backfill the bore annulus to just below ground level; and ▪ Surface completion comprised a steel road box cover set in neat cement and finished flush with the concrete slab level.

Activity/Item	Details
Well Development	Well development was conducted for each well directly following installation. This involved agitation within the full length of the water column using a dedicated, HDPE, disposable bailer, followed by removal of water and accumulated sediment using a 12V, HDPE submersible bore pump (Proactive Environmental, model Super Twister). Pumping was continued until no further reduction in suspended sediment was observed (i.e. after removal of several well volumes).
Well Survey (Elevation and location)	Well elevations at ground level were extrapolated from the spot elevations marked on the survey plan provided by the client. Well elevations at ground level were extrapolated in metres relative to Australian Height Datum (mAHD).
Well Gauging & Groundwater Flow Direction	Monitoring wells were gauged for standing water level (SWL, depth to groundwater) prior to well purging at the commencement of the GME on 20 August 2018. All measured SWLs are shown in **Table 9-2**. A transparent HDPE bailer was used to visually assess for the presence PSH prior to the commencement of well purging. PSH was not detected in either well. Based on the reduced water levels (RWLs, i.e. SWLs corrected to AHD) calculated at each monitoring well (**Table 9-3**). The direction of groundwater flow in the aquifer was inferred to be in a southeast direction.
Well Purging & Field Testing	No volatile organic odours were detected during any stage of well purging. Measurement of water quality parameters was conducted repeatedly during well purging and were recorded onto field data sheets (**Appendix D**) once water quality parameters stabilised. . Field measurements for Dissolved Oxygen (DO), Electrical Conductivity (EC) and pH of the purged water were also recorded during well purging. Purged water volumes removed from each well and field test results are summarised in **Table 9-3.**
Groundwater sampling	Groundwater was sampled using a micro-purge system. Water was continuously measured for four parameters (Temperature, EC, Redox, DO, pH). Once three consecutive field measurements were recorded for the purged waters to within ± 10% for DO, ± 3% for EC , ± 0.2 for pH, ± 0.2° for temperature and ± 20 for redox, this was considered to indicate that representative groundwater quality had been achieved and final physico-chemical measurements were recorded. Groundwater samples were then collected from the micro-purge sampling pump discharge point.
Decontamination Procedure	▪ The micro-purge pump is decontaminated in a solution of potable water and Decon 90 and then rinsed with potable water between measurements/wells between uses. ▪ The micro-purge system employs a disposable bladder and tubing system to further minimise potential contaminates. ▪ All sample containers were supplied by the laboratory for the particular project and only opened once immediately prior to sampling. ▪ Ice packs were used to keep the samples cool when kept in an insulated chest. ▪ The water level probe and water quality kit probes were washed in a solution of potable water and Decon 90 and then rinsed with potable water between measurements/wells.
Sample Preservation	Sample containers were supplied by the laboratory with the following preservatives: ▪ One, 1 litre amber glass, acid-washed and solvent-rinsed bottle; ▪ Two, 40ml glass vials, pre-preserved with dilute hydrochloric acid, Teflon-sealed; and ▪ One, 250mL, HDPE bottle, pre-preserved with dilute nitric acid (1 mL). Samples for metals analysis were field-filtered using 0.45 µm pore-size filters. All containers were filled with sample to the brim then capped and stored in ice-filled chests, until completion of the fieldwork and during sample transit to the laboratory.

Activity/Item	Details
Quality Control & Laboratory Analysis	All groundwater samples were submitted for analysis of previously-identified chemicals of concern by SGS Laboratories (SGS). QA/QC testing comprised intra-laboratory duplicates ('field duplicates') tested blind by SGS and an inter-laboratory field duplicate tested blind by Envirolab Services (Envirolab). All samples were transported under strict Chain-of-Custody (COC) conditions and COC certificates and laboratory sample receipt documentation were provided to EI for confirmation purposes.
Sample Transport	After sampling, refrigerated sample chests were transported to SGS Australia Pty Ltd using strict Chain-of-Custody (COC) procedures. Inter-laboratory duplicate (ILD) samples were forwarded to Envirolab Services Pty Ltd (Envirolab) for QA/QC analysis. A Sample Receipt Advice (SRA) was provided by each laboratory to document sample condition upon receipt. Copies of SRA and COC certificates are presented in **Appendix E**.

8. DATA QUALITY ASSESSMENT

The assessment of data quality is defined as the scientific and statistical evaluation of environmental data to determine if these data meet the objectives of the project (Ref. USEPA 2006). Data quality assessment includes an evaluation of the compliance of the field sampling and laboratory analytical procedures and an assessment of the accuracy and precision of these data from the laboratory quality control measurements obtained.

The data quality assessment process for this assessment included a review of analytical procedures to confirm compliance with established laboratory protocols and an assessment of the accuracy and precision of analytical data from a range of quality control measurements. The QC measures generated from the field sampling and analytical program were as follows:

- suitable records of fieldwork observations including borehole logs;
- relevant and appropriate sampling plan (density, type, and location);
- use of approved and appropriate sampling methods;
- preservation and storage of samples upon collection and during transport to the laboratory;
- complete field and analytical laboratory sample COC procedures and documentation;
- sample holding times within acceptable limits;
- use of appropriate analytical procedures and NATA-accredited laboratories; and
- required LOR (to allow for comparison with adopted IL);
- frequency of conducting quality control measurements;
- laboratory blanks;
- field duplicates;
- laboratory duplicates;
- matrix spike/matrix spike duplicates (MS/MSDs);
- surrogates (or System Monitoring Compounds);
- analytical results for replicated samples, including field and laboratory duplicates and inter-laboratory duplicates, expressed as Relative Percentage Difference (RPD); and
- checking for the occurrence of apparently unusual or anomalous results, e.g. laboratory results that appear to be inconsistent with field observations or measurements.

The findings of the data quality assessment in relation to the soil and groundwater investigations at the site are discussed in detail in **Appendix H**. QA/QC policies and DQOs are presented in **Appendix G**.

On the basis of the analytical data validation procedure employed the overall quality of the soil and groundwater analytical data produced for the site were considered to be of an acceptable standard for interpretive use.

9. RESULTS

9.1 Soil Investigation Results

9.1.1 Site Geology and Subsurface Conditions

The general site geology encountered during the drilling of the soil investigation boreholes, installation of monitoring wells may be described as a layer of anthropogenic filling overlying natural clays with shale at depth. The geological information obtained during the investigation is summarised in **Table 9-1** and borehole logs from these works are presented in **Appendix C**.

Table 9-1 Generalised Subsurface Profile

Layer	Description	Depth to top & bottom of layer (mBGL)
Hardstand	Concrete	0 – 0.10
Fill	Gravelly SAND; fine to medium grained, red / grey / orange mottled, with sub-angular to angular, medium to coarse gravels, no odour. Gravelly CLAY; low to medium plasticity, brown / grey, with sub-angular to angular, medium to coarse gravels, no odour	0.10 – 1.2 (max depth 1.6)
Natural	Silty CLAY; yellow / grey mottled, medium to high plasticity, no odour.	1.2 – 6.0
Bedrock	Shale	6.0 – 8.0 +

Notes: + Termination depth of borehole

9.1.2 Field Observations and PID Results

Soil samples were obtained from the test bores at various depths ranging between 0.3 m to 2.6 mBGL. All examined soil samples were evaluated on a qualitative basis for odour and visual signs of contamination (e.g. hydrocarbon odours, oil staining, petrochemical filming, asbestos fragments, ash, charcoal) and the following observations were noted:

- Visual or olfactory evidence of hydrocarbon impacts were not noted at any of the borehole locations investigated during this assessment;
- Ash, slag or potential asbestos-cement fragments were not observed in boreholes; and
- Elevated VOC concentrations were not observed in samples field-screened using a portable PID fitted with a 10.9 eV lamp. The PID results are shown in the borehole logs (**Appendix C**).

9.2 Groundwater Investigation Results

9.2.1 Monitoring Well Construction

A total of three (3) groundwater monitoring wells were installed across the site. Well construction details for the installed groundwater monitoring wells are summarised in **Table 9-2**.

Table 9-2 Monitoring Well Construction Details

Well ID	Bore Depth (mBGL)	RL (GL)	RL (TOC)	Screen Interval (mBGL)	Lithology Screened
BH1M	8.0	-	-	0.5 – 0.8	Silty Clay/Weathered Shale
BH5M	8.0	-	-	0.5 – 0.8	Silty Clay/Weathered Shale
BH6M	8.0	-	-	0.5 – 0.8	Silty Clay/Weathered Shale

Notes:
mBGL - metres below ground level.
RL - Reduced Level – Surveyed elevation in metres relative to Australian Height Datum (mAHD).
TOC - top of well casing .
RL (TOC) - Extrapolated elevation at TOC in mAHD from survey plans.

9.2.2Field Observations and Water Test Results

A single GME was conducted on all wells in 20 August 2018. On this date, standing water levels (SWLs) were measured within each well prior to well purging, the results of which were recorded with well purge volumes and field-based water test results. A summary of the recorded field data is presented in **Table 9-3** and copies of the completed Field Data Sheets are included in **Appendix G**.

Table 9-3 Groundwater Field Data

Well ID	SWL (mBGL)	RL (TOC)	WL† (mAHD)	Purge Volume (L)	DO (mg/L)	Field pH	Field EC (µS/cm)	Temp (°C)	Redox (mV)	Odours / Turbidity
BH1M	1.15	-	-	2.5	0.20	6.25	5840	21.3	222.3	No odour/ high turbidity
BH5M	1.47	-	-	2.0	0.56	6.18	10920	20.94	243.2	No odour/ high turbidity
BH6M	2.25	-	-	2.0	1.61	5.47	10330	20.25	338	No odour/ high turbidity

Notes:
GME – Groundwater monitoring event.
SWL – Standing Water Levels as measured from TOC (top of well casing) prior to groundwater sampling.
m BTOC – metres below top of well.
RL (TOC) – Reduced Level, elevation at TOC in metres relative to Australian Height Datum (m AHD).
† WL = Calculated groundwater level, in m AHD (calculated as RL – SWL)
L – litres (referring to volume of water purged from the well prior to groundwater sample collection).
EC – groundwater electrical conductivity as measured onsite using portable EC meter.
µS/cm – micro Siemens per centimetre (EC units).
DO – Dissolved Oxygen in units of milligrams per litre (mg/L)
Redox - adjusted to Standard Hydrogen Electrode (SHE) by adding field electrode potential (205mV).
All groundwater parameters (pH, EC, redox and DO) were tested on site.

With reference to **Table 9-3**, the field pH data indicated that the groundwater was acidic to slightly acidic (pH ranged from 5.47 to 6.25). Electrical Conductivity (EC) measurements were recorded in the range 5,840 to 11,920 µS/cm indicating that the groundwater was fresh to marginally saline in terms of water salinity.

9.3 Laboratory Analytical Results

9.3.1Soil Analytical Results

A summary of laboratory results showing test sample quantities, minimum/maximum analyte concentrations and samples found to exceed the SILs, is presented in **Table 9-4**. More detailed tabulations of results showing the tested concentrations for individual samples alongside the adopted soil criteria are presented in **Tables B.1** at the end of this report. Completed documentation used to track soil sample movements and laboratory receipt (i.e. COC and SRA forms) are copied in **Appendix E** and all laboratory analytical reports for tested soil samples are presented in **Appendix F**.

Table 9-4 Summary of Soil Analytical Results

No. of primary samples	Analyte	Min. Conc. (mg/kg)	Max. Conc. (mg/kg)	Sample locations exceeding investigation levels
Hydrocarbons				
12	F1	<25	<25	None
12	F2	<25	<25	None
12	F3	<90	130	None
12	F4	<120	<120	None
12	Benzene	<0.1	<0.1	None
12	Toluene	<0.1	<0.1	None
12	Ethyl benzene	<0.1	<0.1	None
12	Total xylenes	<0.3	<0.3	None
PAHs				
12	Carcinogenic PAHs	<0.2	0.5	None
12	Total PAH	<0.8	3.5	None
12	Benzo(a)pyrene	<0.1	0.3	None
12	Naphthalene	<0.1	0.2	None
OCPs				
8	Aldrin & Dieldrin	Non-detect	Non-detect	None
8	Chlordane	Non-detect	Non-detect	None
8	DDT+DDD+DDE	Non-detect	Non-detect	None
8	Heptachlor	Non-detect	Non-detect	None
OPPs				
8	Total OPPs	Non-detect	Non-detect	None
PCBs				
8	Total PCBs	<1.0	<1.0	None
Heavy Metal				
12	Arsenic	2	8	None
12	Cadmium	<0.3	<0.3	None
12	Chromium (Total)	7.1	28	None
12	Copper	9	43	None
12	Lead	9	35	None
12	Mercury	<0.05	<0.05	None
12	Nickel	1.7	33	None

No. of primary samples	Analyte	Min. Conc. (mg/kg)	Max. Conc. (mg/kg)	Sample locations exceeding investigation levels
12	Zinc	9	82	None
Asbestos				
8	Asbestos	No asbestos detected	No asbestos detected	None

Heavy Metals

With reference to **Table B.1**, all heavy metals concentrations were below the corresponding health based SILs and EILs for residential settings with accessible soils and childcare centres.

TRHs

As shown in **Table B.1**, all total recoverable hydrocarbons (TRH) concentrations were below the corresponding NEPM 2013 health-based HSL-A&B and ESL levels, which were the adopted SILs for TRHs.

BTEX and Naphthalene

All results for BTEX compounds and naphthalene were below the corresponding SILs and ESLs, as shown in **Table B.1**.

PAHs

As summarised in **Table B.1** there were no exceedances of the adopted health based SILs/EILs for PAHs.

Asbestos

As summarised in **Table B.1**, asbestos was not detected in any of the tested samples.

OCPs, OPPs and PCBs

With reference to **Table B.1**, no detectable concentration of any of the screened OCP, OPP and PCB compounds was identified in any of the tested samples. All laboratory PQLs were also within the corresponding SILs and EILs.

9.3.2Groundwater Analytical Results

Laboratory analytical results for groundwater samples are summarised in **Table B.2**, which also include the adopted GILs. Completed documentation used to track groundwater sample movements and laboratory receipt (COC and SRA forms) are copied in **Appendix E**. Copies of the laboratory analytical reports are attached in **Appendix F**.

Heavy Metals

With reference to **Table B.2** concentrations in excess of the adopted GILs were identified in all samples (BH1M, BH5M and BH6M) for copper, mercury, nickel and zinc. The concentrations cadmium (BH3M) and lead (BH3M) also exceeded the GILs.

Heavy metals in groundwater are common in urban areas such as Beverly Hills. It can be inferred that the detected groundwater metal levels do not pose an immediate threat to human health or the environment. Whether these results are treated as exceedances of the GILs, or representative of urban background groundwater conditions, the identified groundwater concentrations are not considered to represent a cause for environmental concern.

TRHs and BTEX

As shown in **Table B.2**, tested TRH and BTEX concentrations were all below the corresponding GILs.

PAHs

As shown in **Table B.2**, tested PAH concentrations were all below the corresponding GILs.

SVOCs & VOCs (including Naphthalene)

As shown in **Table B.2**, the majority laboratory results for the tested groundwater samples showed non-detectable levels of *naphthalene*, SVOCs and VOCs with the laboratory detection limits well within the adopted GILs. Some VOCs were detected above laboratory PQLs with the highest concentrations being Chloroform which was detected in all samples. Chloroform is commonly used in municipal water treatment systems and is not a cause for environmental concern.

10.SITE CHARACTERISATION

10.1 Review of Conceptual Site Model

On the basis of investigation findings, the CSM discussed in **Section 5** was considered to appropriately identify contamination sources, migration mechanisms and exposure pathways, as well as potential onsite and offsite receptors. Previously known data gaps, as outlined in **Section 5.5** have largely been addressed; however, the following data gaps remain that require closure by limited investigation:

- The existence of any hazardous building materials with the current site structure;
- Condition of soils beneath the footprint of the existing site building; and
- Condition of fill over the stormwater easement.

10.2 Groundwater

The heavy metals cadmium, copper, lead, mercury, nickel and zinc were detected in groundwater at levels above the adopted GILs. Heavy metals in groundwater are common in urban areas. The detection of heavy metals is considered to be indicative of background conditions. EI considers the risk of a completed exposure pathway to be low due to the presence of a reticulated water supply being available. EI considers a low risk of a completed exposure pathway involving end users of the building.

11.Conclusions

The property located at 143A Stoney Creek Rd, Beverly Hills NSW was the subject of a Detailed Site Investigations (DSI) that was conducted in order to assess the nature and degree of on-site contamination associated with current and former uses of the property. Based on the findings of this assessment it was concluded that:

- The site comprised a rectangular shaped block, covering a total area of approximately 0.25 hectares. The site was bound by Stoney Creek Road (north-west), Cambridge Street (north-east) and individual residential dwellings (south-east and south-west);
- The site was free of statutory notices issued by the NSW EPA;
- Soil sampling and analysis was conducted at eight(8) test bore locations (BH1M – BH8).
- The sub-surface layers comprised of anthropogenic fill materials underlain by natural clays and shale bedrock;
- All examined soil samples were evaluated on a qualitative basis for odour and visual signs of contamination (e.g. hydrocarbon odours, oil staining, petrochemical filming, asbestos fragments, ash, charcoal) and the following observations were noted:
    - Visual or olfactory evidence of hydrocarbon impacts were not noted at any of the borehole locations investigated during this assessment;
    - Ash, slag or potential asbestos-cement fragments were not observed in boreholes; and
    - Elevated VOC concentrations were not observed in samples field-screened using a portable PID fitted with a 10.9 eV lamp. The PID results are shown in the borehole logs (Appendix C).Groundwater was encountered at depths ranging from 1.15 – 2.25 mBGL;
- The heavy metals cadmium, copper, lead, mercury, nickel and zinc were identified at levels above the adopted GILs in all groundwater sampling locations. It was concluded that the detected groundwater metal levels do not pose an immediate threat to human health or the environment. Whether these results are treated as exceedances of the GILs, or representative of urban background groundwater conditions, the identified groundwater concentrations are not considered to represent a cause for environmental concern.
- On review of the Conceptual Site Model (CSM) developed as part of this DSI, it was concluded that the model remains valid for the proposed development. However, due to the absence of the majority of contaminants highlighted within the CSM, the potential risk of complete exposure pathways to exist as highlighted within the CSM is considered to be low. A data gap, however, exists concerning building materials in onsite structures, soils beneath the buildings footprint, and the condition of fill covering the stormwater easement running through site. As such, an additional investigation should be undertaken prior to construction to finalise site characterisation.

Based on the findings of this report, and with consideration of the Statement of Limitations (**Section 13**), EI conclude that widespread contamination was not identified at the site during this investigation. Further investigation will be required in accordance with the recommendations provided in **Section 12** before construction can commence to identify any risks to maintenance and construction workers, and future site receptors.

12.RECOMMENDATIONS

The proposed development includes demolition of the existing site structures, therefore in view of the above findings and in accordance with the NEPM 2013 guidelines; it is considered that the site can be made suitable for the proposed development on completion of the following recommendations:

- Prior to site demolition, carry out a Hazardous Materials Survey on existing site structures to identify potentially hazardous building products that may be released to the environment during demolition;
- Completion of additional site investigations to close existing data gaps for satisfactory characterisation of the site;
- Any soils to be excavated and removed from the site are to be waste classified in accordance with EPA (2014) *Waste Classification Guidelines*.

13.STATEMENT OF LIMITATIONS

The findings presented in this report are the result of discrete and specific sampling methodologies used in accordance with best industry practices and standards. Due to the site-specific nature of soil sampling from point locations, it is considered likely that all variations in subsurface conditions across a site cannot be fully defined, no matter how comprehensive the field investigation program.

While normal assessments of data reliability have been made, EI assumes no responsibility or liability for errors in any data obtained from previous assessments conducted on site, regulatory agencies (e.g. Council, EPA), statements from sources outside of EI, or developments resulting from situations outside the scope of works of this project.

Despite all reasonable care and diligence, the ground conditions encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions and other events, e.g. groundwater movement and or spillages of contaminating substances. These changes may occur subsequent to EI's investigations and assessment.

EI's assessment is necessarily based upon the result of the site investigation and the restricted program of surface and subsurface sampling, screening and chemical testing which was set out in the proposal. Neither EI, nor any other reputable consultant, can provide unqualified warranties nor does EI assume any liability for site conditions not observed or accessible during the time of the investigations.

This report was prepared for the above named client and no responsibility is accepted for use of any part of this report in any other context or for any other purpose or by other third parties. This report does not purport to provide legal advice.

This report and associated documents remain the property of EI subject to payment of all fees due for this assessment. The report shall not be reproduced except in full and with prior written permission by EI.

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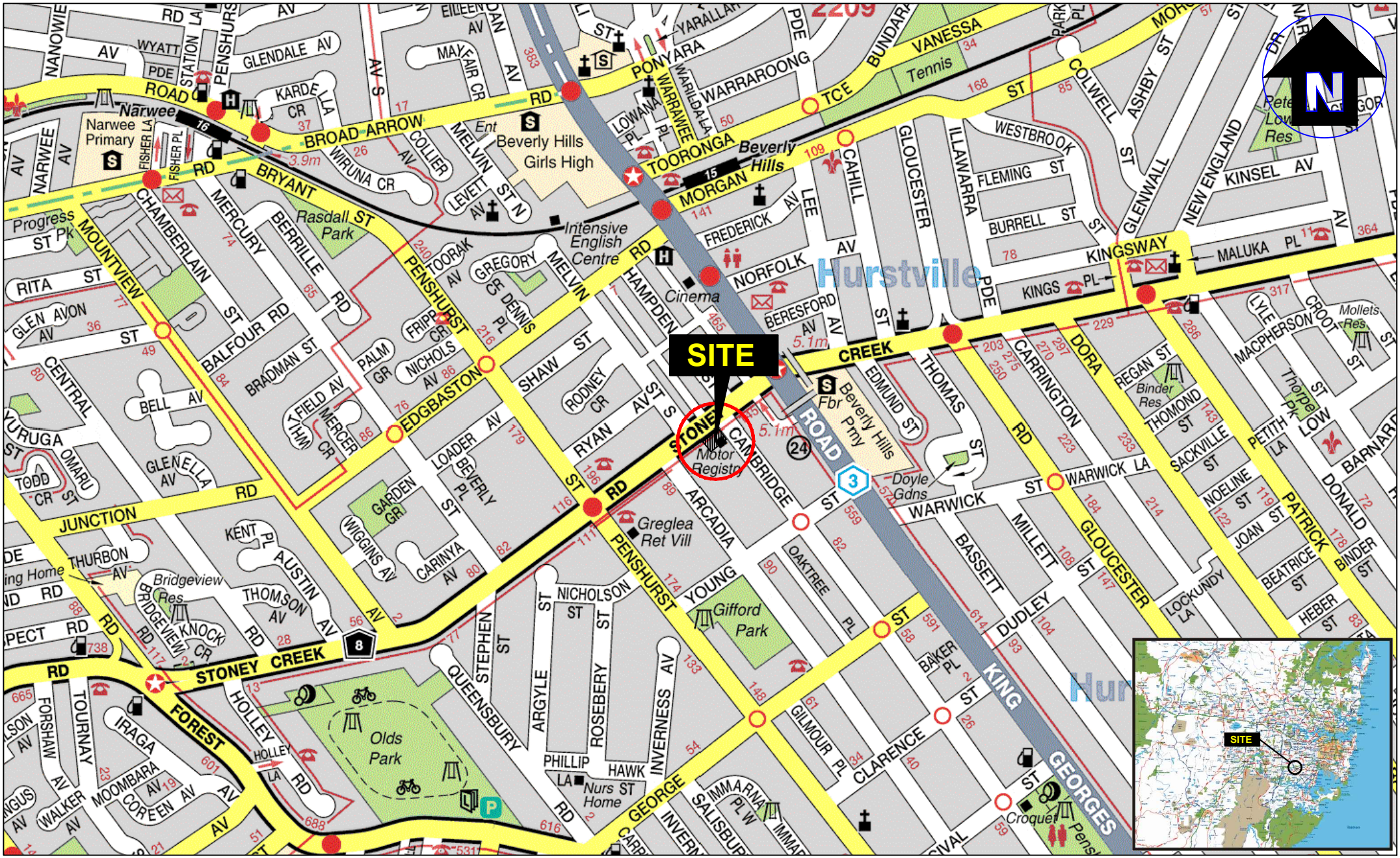
ABBREVIATIONS

ACM	Asbestos-containing materials
ASS	Acid sulfate soils
B(a)P	Benzo(a)Pyrene (a PAH compound), - B(a)P TEQ Toxicity Equivalent Quotient
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
COC	Chain of Custody
cVOCs	Chlorinated Volatile Organic Compounds (a sub-set of the VOC analysis suite)
DEC	Department of Environment and Conservation, NSW (see OEH)
DECC	Department of Environment and Climate Change, NSW (see OEH)
DECCW	Department of Environment, Climate Change and Water, NSW (see OEH)
DA	Development Application
DO	Dissolved Oxygen
DP	Deposited Plan
EC	Electrical Conductivity
Eh	Redox potential
EPA	Environment Protection Authority
EMP	Environmental Management Plan
F1	TRH $C_6 – C_{10}$ less the sum of BTEX concentrations (Ref. NEPM 2013, Schedule B1)
F2	TRH $>C_{10} – C_{16}$ less the concentration of naphthalene (Ref. NEPM 2013, Schedule B1)
GIL	Groundwater Investigation Level
GME	Groundwater Monitoring Event
HIL	Health-based Investigation Level
HSL	Health-based Screening Level
km	Kilometres
LNAPL	Light, non-aqueous phase liquid (also referred to as PSH)
DNAPL	Dense, non-aqueous phase liquid
EIL	Ecological Investigation Level
ESL	Ecological Screening Level
m	Metres
mAHD	Metres Australian Height Datum
mBGL	Metres Below Ground Level
mg/L	Milligrams per litre
µg/L	Micrograms per litre
mV	Millivolts
MW	Monitoring well
NATA	National Association of Testing Authorities, Australia
NEPC	National Environmental Protection Council
NSW	New South Wales
OEH	Office of Environment and Heritage, NSW (formerly DEC, DECC, DECCW)
PAHs	Polycyclic Aromatic Hydrocarbons
pH	Measure of the acidity or basicity of an aqueous solution
PSH	Phase-separated hydrocarbons (also referred to as LNAPL)
PQL	Practical Quantitation Limit (limit of detection for respective laboratory instruments)
QA/QC	Quality Assurance / Quality Control
RAP	Remediation Action Plan
SRA	Sample receipt advice (document confirming laboratory receipt of samples)
SWL	Standing Water Level
TDS	Total dissolved solids (a measure of water salinity)
TCLP	Toxicity Characteristics Leaching Procedure
TPH	Total Petroleum Hydrocarbons (superseded term equivalent to TRH)
TRH	Total Recoverable Hydrocarbons (non-specific analysis of organic compounds)
UCL	Upper Confidence Limit of the mean
USEPA	United States Environmental Protection Agency
UPSS	Underground Petroleum Storage System

UST	Underground Storage Tank
VOCs	Volatile Organic Compounds (specific organic compounds which are volatile)

Appendix A- Figures



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Sutherland & Associates Planning Pty Ltd

Detailed Site Investigation

143A Stoney Creek Road, Beverly Hills NSW

Site Locality Plan

Figure: 1

Project: E23967.E02_Rev2

LEGEND

- Approximate site boundary
- Approximate borehole/monitoring well location
- Approximate borehole location
- Approximate location of storm water easement

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Sutherland & Associates Planning Pty Ltd
Detailed Site Investigation
143A Stoney Creek Road, Beverly Hills NSW

Sampling Location Plan

Figure: 2

Project: E23967.E02_Rev2

Appendix B- Tables

Table B.1 - Summary of Soil Analytical results

E23967 - Beverly Hills

Sample ID	Material	Date	Heavy Metals								PAHs				BTEX				TRH						Pesticides		PCBs	Asbestos
			As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	Carcinogenic PAHs (as B(a)P TEQ)	Benzo(a)pyrene	Total PAHs	Naphthalene	Benzene	Toluene	Ethylbenzene	Total Xylenes	F1	F2	F3	F4	C^6-C^9	C^{10}-C^{36}	OCPs (total)	OPPs	Total	Presence / absence
BH1M_0.3-0.4	Fill	14/8/2018	2	<0.3	7.1	10	9	<0.05	21.0	24	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.D.	N.D.	<1	No
BH1M_2.4-2.5	Natural		2	<0.3	14	9.9	15	<0.05	3.8	14.0	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.A.	N.A.	N.A.	N.A.
BH2_0.9-1.0	Fill		2	<0.3	14.0	13.0	17	<0.05	3.6	16	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.D.	N.D.	<1	No
BH3_0.3-0.4	Fill		5	<0.3	12.0	19	35	<0.05	6.1	43	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.D.	N.D.	<1	No
BH3_2.5-2.6	Natural		2	<0.3	15.0	10	14	<0.05	1.7	9	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.A.	N.A.	N.A.	N.A.
BH4_0.3-0.4	Fill		8	<0.3	27.0	43	13	<0.05	31.0	82	<0.3	<0.1	1.2	0.2	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.D.	N.D.	<1	No
BH5M_0.3-0.4	Fill		3	<0.3	12.0	23	16	<0.05	10.0	47	0.4	0.2	3	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.D.	N.D.	<1	No
BH5M_2.0-2.1	Natural		3	<0.3	17.0	9	19	<0.05	2.7	12	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.A.	N.A.	N.A.	N.A.
BH6M_0.3-0.4	Fill		3	<0.3	12.0	22	19	<0.05	12.0	46	0.5	0.3	3.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	130	<120	<20	160	N.D.	N.D.	<1	No
BH7_0.3-0.4	Fill		5	<0.3	11.0	33	32	<0.05	13.0	80	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.D.	N.D.	<1	No
BH7_1.5-1.6	Natural		4	<0.3	18.0	9	16	<0.05	2.5	10	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.A.	N.A.	N.A.	N.A.
BH8_0.3-0.4	Fill		7	<0.3	28.0	38	10	<0.05	33.0	72	<0.3	<0.1	1	0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<20	<110	N.D.	N.D.	<1	No
Statistical Analysis																												
Maximum Concentration			8	<0.3	28	43	35	0.00	33	82	0.5	0.3	4	0.2	<0.1	<0.1	<0.1	<0.3	<25	<25	130	<120	<20	160	N.D.	N.D.	<1	No
SILs																												
HIL A - *Residential with access to soils/Childcare Centres*			100	20	100 Cr(VI)	6,000	300	40	400	7,400	3		300												240		1	
HSL-A&B - *Low - high density residential* Soil texture classification –Sand [1]			Source depths (0 m to <1 m. BGL)											3	0.5	160	55	40	45	110								
			Source depths (1 m to <2 m. BGL)											NL	0.5	220	NL	60	70	240								
			Source depths (2m to <4 m. BGL)											NL	0.5	310	NL	95	110	440								
			Source depths (4 m+)											NL	0.5	540	NL	170	200	NL								
EILs / ESLs *			100		335	125	1260		35	350		33		170	50	85	70	105	180	120	300	2,800			180			
Management Limits – *Residential, parkland and public open space* Coarse grained soil texture[1]																			700	1,000	3,500	10,000						

Notes:

All results are recorded in mg/kg (unless otherwise stated)

Highlighted values indicates concentration exceeds Human Health Based Soil Criteria□

Highlighted values indicates concentration exceeds NEPM 2013 ecological criteria (EIL / ESL)□

Highlighted indicates NEPM 2013 criteria exceeded

HIL A NEPC 1999 Amendment 2013 'HIL B' Health Based Investigation Levels applicable for residential exposure settings with access to soils and child care centres

HSL A&B NEPC 1999 Amendment 2013 'HSL A&B' Health Based Screening Levels based on vapour intrusion values applicable for Low - High density residential settings.

* Site specific EIL criteria / Conservative ESL criteria (See **Section 6.3**)

NA 'Not Analysed' i.e. the sample was not analysed.

NC 'Not Calculated'

ND 'Not detected' i.e. all concentrations of the compounds within the analyte group were found to be below the laboratory limits of detection.

NL 'Not Limiting' - The soil vapour limit exceeds the soil concentration at which the pore water phase cannot dissolve any more of the individual chemical.

NR No current published criterion.

1 Coarse Grained soil values were applied, being the most conservative of the material types.

2 Combined total of which all Chlordane speciations are assessed against.

F1 To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.

F2 To obtain F2 subtract Naphthalene from the >C10-C16 fraction.

F3 (>C16-C34)

F4 (>C34-C40)

Table B.2 – Summary of Groundwater Investigation Results

Sample ID	Heavy Metals								BTEX				TRHs				PAH		Total VOCs
	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Total Xylene	F1*	F2**	F3 (>C_{16}-C_{34})	F4 (>C_{34}-C_{40})	Naphthalene	Other PAHs	
BH1M	<1	<0.1	1	56	3	0.3	43	130	<0.5	<0.5	<0.5	<1.5	<50	<60	<500	<500	<0.1	<1	<10
BH5M	1	0.3	<1	21	1	0.3	78	95	<0.5	<0.5	<0.5	<1.5	<50	<60	<500	<500	<0.1	<1	<10
BH6M	2	2	1	81	6	0.3	110	370	<0.5	<0.5	<0.5	<1.5	<50	<60	<500	<500	<0.1	<1	<10
GIL																			
GIL (MarineWaters)	NR	0.7[3]	27 (Cr (III)) / 4.4 (Cr (VI))	1.3	4.4	0.1[3]	7	15[1]	500[1]	NR	NR	NR	NR	NR	NR	NR	50	NR	NR
Drinking Waters	10	2	50	2000	10	1	20	NR	1	800	300	600	NR	NR	NR	NR	0.01	NR	
HSL A&B [2]	NR	NR	NR	NR	NR	NR	NR	NR	800	NL	NL	NL	1000	1000			NL		

Notes: All results are in units of µg/L.

Highlighted concentration value indicates exceedance of adopted GILs.

GIL Groundwater Investigation Level. All GIL values sourced from *National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013*, *Schedule (B1)* - Guideline on Investigation Levels for Soil and Groundwater, (NEPC) Investigation levels apply to Fresh Waters for typical slightly-moderately disturbed systems.

HSL Health-based Screening Level.

NL 'Not Limiting' If the derived soil vapour limit exceeds the soil concentration at which the pore water phase cannot dissolve any more of the individual chemical, i.e. where the soil vapour is at equilibrium with the pore water, then the soil vapour source cannot exceed a level that would result in the

NR No recommended soil assessment criteria are currently available for the indicated parameter(s).

N.D. Concentrations of all tested analytes in this group was under laboratory's practical quantifation limit.

* To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.

** To obtain F2 subtract Naphthalene from the >C10-C16 fraction.

1 Indicated threshold value may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.

2 NEPC (2013) Table 1A(4) Groundwater HSL D for vapour intrusion at the contaminant source depth ranges in sands 2m to <4m, which is consistent with the groundwater sampling depth.

3 Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.

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Table B.3 Summary of QA/QC Results for Soil Validation Samples
Site: 143A Stoney Creek Rd, Beverly Hills NSW
Job No: E23967.E02

Date	Sample Identification	Description	TRH				BTEX				Heavy Metals							
			F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Intra-laboratory Duplicate																		
13/08/2018	BH1M_0.3-0.4	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	2	<0.3	7.1	10	9	<0.05	21.0	24
13/08/2018	QD1	Intra-laboratory duplicate of BH1M_0.3-0.4	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	3	<0.3	4.1	5	6	<0.05	13.0	12
		RPD	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*40.00*	*0.00*	53.57	65.73	*40.00*	*0.00*	*47.06*	66.67
Inter-laboratory Duplicate																		
13/08/2018	BH1M_0.3-0.4	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	2	<0.3	7.1	9.5	9	<0.05	21	24
13/08/2018	QT1	Inter-laboratory duplicate of BH1M_0.3-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	<0.1	<1	3	<1	<0.05	36	47
		RPD	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	160.53	104.00	168.42	*0.00*	52.63	64.79
Trip Blanks																		
13/08/2018	Trip Blank	Soil	-	-	-	-	<0.1	<0.1	<0.1	<0.3	-	-	-	-	-	-	-	-
Trip Spikes																		
13/08/2018	Trip Spike	Soil	-	-	-	-	[113%]	[107%]	[107%]	[104%]	-	-	-	-	-	-	-	-
Rinsate Blanks																		
13/08/2018	QR1	De-ionised water	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.1	<1	5

52.17 Indicates values where a single result is found to be less than detection, with the duplicate sample found to be over the detection limit.
82.35 RPD exceeds 30-50% range referenced from AS4482.1 (2005)

NOTE: All soil results are reported in mg/kg . All water results are reported in µg/L.

F1 = TRH C6-C10 less the sum of BTEX
F2 = TRH >C10-C16 less naphthalene
F3 = TRH >C16-C34
F4 = TRH >C34-C40

Table B.3 Summary of QA/QC Results for Groundwater Samples
Site: 143A Stoney Creek Rd, Beverly Hills NSW
Job No: E23967.E02

Date	Sample Identification	Description	TRH				BTEX				Heavy Metals							
			F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Intra-laboratory Duplicate																		
20/08/2018	BH1M	Primary Water Sample	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	1	56	3	0.2	43	130
20/08/2018	GWQD1	Intra-laboratory duplicate of BH1M-1	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	4	<1	0.2	36	47
		RPD	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	173.33	114.29	*0.00*	*17.72*	93.79
Trip Blanks																		
20/08/2018	Trip Blank	Water	-	-	-	-	<0.5	<0.5	<0.5	<1.5	-	-	-	-	-	-	-	-
Trip Spikes																		
20/08/2018	Trip Spike	Water	-	-	-	-	96%	94%	99%	92%	-	-	-	-	-	-	-	-
Rinsate Blanks																		
20/08/2018	GWQR1	De-ionised water	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	<1	<1	0.2	<1	<5
20/08/2018	GWQRB1	De-ionised water	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-

52.17 Indicates values where a single result is found to be less than detection, with the duplicate sample found to be over the detection limit.
82.35 RPD exceeds 30-50% range referenced from AS4482.1 (2005)

F1 = TRH C6-C10 less the sum of BTEX
F2 = TRH >C10-C16 less naphthalene
F3 = TRH >C16-C34
F2 = TRH >C34-C40

Appendix C– Borehole Logs

BOREHOLE: BH1M

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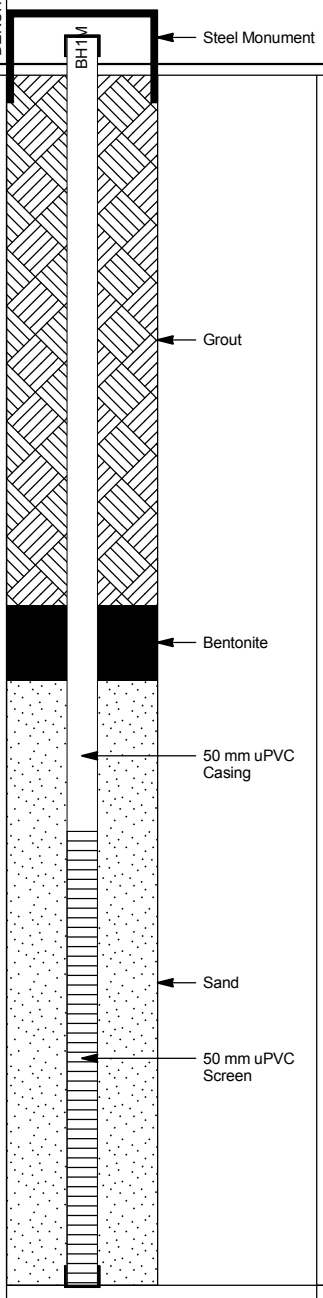
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation		
Location	143A Stoney Creek Road, Beverly Hills NSW		
Position	Refer to Figure 2		
Job No.	E23967.E02	Contractor	
Client	SUTHERLAND & ASSOCIATES PLANNING	Drill Rig	Drill Rig
		Inclination	-90°

Sheet	1 OF 1
Date Started	12/8/18
Date Completed	12/8/18
Logged NG/NS	Date:
Checked	Date:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
			0	0.10				-	Concrete			ID Static Water Level BH1M
					BH1M_0.3-0.4 ES 0.30-0.40 m PID=1.7 ppm			-	FILL - Gravelly SAND; fine to medium grainded, red / grey / orange mottled, with sub-angular to angular, medium to coarse gravels, no odour.	M		
				0.60				-	FILL - Gravelly CLAY; low to medium plasticity, brown / grey, with sub-angular to angular, medium to coarse gravels, no odour.	M		
			1		BH1M_0.9-1.0 ES 0.90-1.00 m PID=2.1 ppm							
				1.50				C	NATURAL - Silty CLAY; yellow / grey mottled, medium to high plasticity, no odour.			
			2		BH1M_2.0-2.1 ES 2.00-2.10 m PID=2.7 ppm							
			3									
				3.50				C	Becoming red / orange.			
			4									
				5.00				C	Becoming brown.	M		
			5									
				5.50				C	Weathered shale, light grey / brown.			
			6									
				7.00				C	Brown			
			7									
		Seepage encourted		8.00					Hole Terminated at 8.00 m Refusal on Shale			
			8									
			9									
			10									



This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH2

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation		
Location	143A Stoney Creek Road, Beverly Hills NSW		
Position	Refer to Figure 2		
Job No.	E23967.E02	Contractor	
Client	SUTHERLAND & ASSOCIATES PLANNING	Drill Rig	Drill Rig
		Inclination	-90°

Sheet	1 OF 1
Date Started	12/8/18
Date Completed	12/8/18
Logged NG/NS	Date:
Checked	Date:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0	0.15					Concrete			
AD/T	--	GWNE			BH2_0.3-0.4 ES 0.30-0.40 m PID = 1.8 ppm			-	FILL- Silty CLAY; grey / brown, high plasticity, no odour.	M		FILL
			1	1.00	BH2_0.9-1.0 ES 0.90-1.00 m PID = 2.0 ppm			C	NATURAL: Silty CLAY; grey / brown, high plasticity, no odour.	M		NATURAL
			2	2.10	BH2_2.0-2.1 ES 2.00-2.10 m PID = 2.1 ppm			C	Colour change: orange / red			
				2.50					Hole Terminated at 2.50 m Target Depth Reach			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH3

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation		
Location	143A Stoney Creek Road, Beverly Hills NSW		
Position	Refer to Figure 2		
Job No.	E23967.E02	Contractor	
Client	SUTHERLAND & ASSOCIATES PLANNING	Drill Rig	Drill Rig
		Inclination	-90°

Sheet	1 OF 1
Date Started	12/8/18
Date Completed	12/8/18
Logged NG/NS	Date:
Checked	Date:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T		GWNE	0	0.13					Concrete			
					BH3_0.3-0.4 0.30-0.40 m PID = 1.7 pmm			-	FILL- Gravally SAND; dark brown / orange, fine to medium grained, with angular to subangular gravel, no odour.	M		FILL
				0.60				-	FILL - Silty CLAY; dark brown, high plasticity, no odour.			
			1		BH3_0.9-1.0 0.90-1.00 m PID = 1.9 pmm					M		
				1.60				C	NATURAL - Silty CLAY; light brown / brown, high plasticity, no odour.			NATURAL
			2		BH3_1.9-2 1.90-2.00 m PID = 1.5 pmm							
					BH4_2.5-2.6 2.50-2.60 m PID = 1.3 pmm					M		
			3	3.50								
									Hole Terminated at 3.50 m Target Depth Reach			
			4									
			5									
			6									
			7									
			8									
			9									
			10									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH4

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation		
Location	143A Stoney Creek Road, Beverly Hills NSW		
Position	Refer to Figure 2		
Job No.	E23967.E02	Contractor	
Client	SUTHERLAND & ASSOCIATES PLANNING	Drill Rig	Drill Rig
		Inclination	-90°

Sheet	1 OF 1
Date Started	12/8/18
Date Completed	12/8/18
Logged NG/NS	Date:
Checked	Date:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T		GWNE	0	0.16					Concrete			
					BH4_0.3-0.4 0.30-0.40 m PID = 1.6 ppm			-	FILL - Gravelly CLAY; grey / brown, low to medium plasicity, with medium to coarse, angular to sub-angular gravels, no odour.	M		FILL
			1	1.20				C	NATURAL - Silty CLAY; brown / red, medium to high plasicity, no odour.	M		NATURAL
					BH4_1.9-2.0 1.90-2.00 m PID = 2.2 ppm							
			2	2.30					Hole Terminated at 2.30 m Target Depth Reach			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH5M

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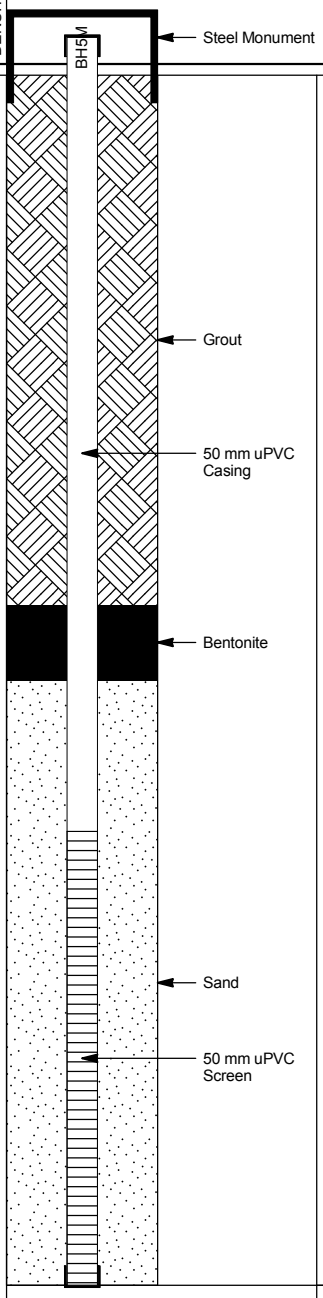
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation		
Location	143A Stoney Creek Road, Beverly Hills NSW		
Position	Refer to Figure 2		
Job No.	E23967.E02	Contractor	
Client	SUTHERLAND & ASSOCIATES PLANNING	Drill Rig	Drill Rig
		Inclination	-90°

Sheet	1 OF 1
Date Started	12/8/18
Date Completed	12/8/18
Logged NG/NS	Date:
Checked	Date:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T		Seepage encourted	0	0.16					Concrete			ID BH5M Static Water Level
					BH5M_0.3-0.4 0.30-0.40 m PID = 4.6 ppm				FILL - Gravelly SAND; fine to medium grained, light brown / grey, with medium, angular to sub-angular gravels, no odour.	M		
				0.80								
			1		BH5M_0.9-1.0 0.90-1.00 m PID = 4.0 ppm				FILL - Gravelly CLAY; low to medium plasticity, brown, with angular to sub-angular, medium to coarse gravels; no odour.			
				1.20					NATURAL - Silty CLAY; brown / red, medium to high plasicity, no odour.			
			2		BH5M_2.0-2.1 2.00-2.10 m PID = 3.4 ppm							
				2.50					Becoming red	M		
			3									
			4									
			5									
			6	6.00					Weathered shale			
			7									
			8	8.00					Hole Terminated at 8.00 m Target Depth Reach			
			9									
			10									



This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH6M

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation		
Location	143A Stoney Creek Road, Beverly Hills NSW		
Position	Refer to Figure 2		
Job No.	E23967.E02	Contractor	
Client	SUTHERLAND & ASSOCIATES PLANNING	Drill Rig	Drill Rig
		Inclination	-90°

Sheet	1 OF 1
Date Started	12/8/18
Date Completed	12/8/18
Logged NG/NS	Date:
Checked	Date:

Drilling					Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID / Static Water Level	
AD/T		Seepage encountered	0	0.15					Concrete			BH6M	Steel Monument
				0.50	BH6M_0.3-0.4 0.30-0.40 m PID = 2.6 ppm BH6M_0.6-0.7 0.60-0.70 m PID = 2.6 ppm			-	FILL - Gravelly SAND; fine to medium grained, light brown / grey, with medium, angular to sub-angulargravels, no odour.	M			
			1					C	NATURAL - Silty CLAY; brown / red, medium to high plasicity, no odour.				Grout
			2										50 mm uPVC Casing
			3	3.00				C	Colour chage to gery / red.				Bentonite
			4							M			
			5	5.00				C	Weathered shale.				Sand
			6										
			7										50 mm uPVC Screen
			8	8.00					Hole Terminated at 8.00 m Target Depth Reach				
			9										
			10										

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH7

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation		
Location	143A Stoney Creek Road, Beverly Hills NSW		
Position	Refer to Figure 2		
Job No.	E23967.E02	Contractor	
Client	SUTHERLAND & ASSOCIATES PLANNING	Drill Rig	Drill Rig
		Inclination	-90°

Sheet	1 OF 1
Date Started	12/8/18
Date Completed	12/8/18
Logged NG/NS	Date:
Checked	Date:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T		GWNE	0	0.16					Concrete			
					BH7_0.3-0.4 0.30-0.40 m PID = 2.1 ppm			-	FILL - Clayey SAND; light brown to brown, low to medium plasicity, with subangular to angular gravels, no odour.	M		FILL
				0.60				C	NATURAL - Silty CLAY; brown / red, medium to high plasicity, no odour.	M		NATURAL
			1		BH7_1.5-1.6 1.50-1.60 m PID = 1.9 ppm							
				1.80					Hole Terminated at 1.80 m Target Depth Reach			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH8

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation		
Location	143A Stoney Creek Road, Beverly Hills NSW		
Position	Refer to Figure 2		
Job No.	E23967.E02	Contractor	
Client	SUTHERLAND & ASSOCIATES PLANNING	Drill Rig	Drill Rig
		Inclination	-90°

Sheet	1 OF 1
Date Started	12/8/18
Date Completed	12/8/18
Logged NG/NS	Date:
Checked	Date:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T		GWNE	0	0.14					Concrete			
					BH8_0.3-0.4 0.30-0.40 m PID = 2.5 ppm				FILL - Gravelly SAND; fine to medium grained, light brown / grey, with medium, angular to sub-angular gravels, no odour.	M		FILL
			1	1.00	BH8_1.0-1.1 1.00-1.10 m PID = 1.6 ppm				FILL - Gravelly CLAL; low to medium plasticity, brown, with angular to sub-angular, medium to coarse gravels; no odour.			
				1.60					NATURAL - Silty CLAY; brown / red, medium to high plasicity, no odour.	M		NATURAL
			2	2.20					Hole Terminated at 2.20 m Target Depth Reach			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

Appendix D– Field Data Sheets

WATER SAMPLING FIELD SHEET

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Site Address: 143a Stony Creek Rd, Berala NSW	Job Number: E23967
Client:	Date: 20-8-18
Field Staff: N.G / L.B	Sampling Location ID RHIM
Well Location:	Round No: 1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	Stick up / down (m): -0.11 (+ above ground - below ground)
Initial Well Depth (mBTOC):	Screen Interval (mBTOC):
Previous Sampling Date:	Previous SWL (mBTOC):

PID READINGS

PID Headspace (ppm): /	PID Background (ppm): /
PID Breathing Space (ppm): /	

PRE PURGE

Total Well Depth (mBTOC): 8.12	Well Head Condition: good
SWL (mBTOC): 1.04	Water Column (m): 7.08

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): /	PSH Visually Confirmed (Bailer): /
PSH Thickness (mm): /	

PURGE AND SAMPLE

Sampling Method ☒Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC): 6.5	Fill Timer: 10
Pump Pressure Regulator (psi): 20	Discharge Timer: 5
Weather Conditions: Fine	Cycle: CPM4
Pump on time: 12:09	Pump off time: 12:30

WATER QUALITY PARAMETERS

Probe Make and Model:	Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
12:17	0.5	1.07	21.36	7976	34.9	1.64	6.33	brown, High, NO, NO
12:19	1	1.11	21.41	7044	24.3	0.69	6.30	↓
12:21	1.5	1.11	21.41	6733	20.9	0.38	6.27	
12:23	2	1.11	21.41	6363	18.4	0.24	6.25	
12:25	2.5	1.11	21.3	5840	17.3	0.20	6.25	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

GWQD1 + QWQT1 taken

SIGNATURE:

WATER SAMPLING FIELD SHEET

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Site Address: 1434 Stoney Creek Rd, Beverly Hills	Job Number: E23967
Client:	Date: 20-8-18
Field Staff: N.G / L.B	Sampling Location ID BH5M
Well Location:	Round No: 1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	Stick up / (down) (m): -0.06 (+ above ground - below ground)
Initial Well Depth (mBTOC):	Screen Interval (mBTOC):
Previous Sampling Date:	Previous SWL (mBTOC):

PID READINGS

PID Headspace (ppm): /	PID Background (ppm): /
PID Breathing Space (ppm):	

PRE PURGE

Total Well Depth (mBTOC): 8.15	Well Head Condition: good
SWL (mBTOC): 1.41	Water Column (m): 6.74

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): /	PSH Visually Confirmed (Bailer):
PSH Thickness (mm):	/

PURGE AND SAMPLE

Sampling Method ☒Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC): 6.5	Fill Timer: 40
Pump Pressure Regulator (psi): 20	Discharge Timer: 5
Weather Conditions: fine	Cycle: CPM 4
Pump on time: 1:15	Pump off time: 1.35

WATER QUALITY PARAMETERS

Probe Make and Model:	Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
1:17	0.5	1.50	20.09	10900	87.5	2.82	6.45	grey/brown / high, no, no
1:19	1	1.73	20.89	10870	90.4	0.85	6.27	
1:21	1.5	1.84	21.02	10880	91.4	0.56	6.20	
1:23	2	1.98	20.94	10920	88.2	0.56	6.18	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address: 143a Stoney	Job Number: E23967
Client:	Date: 20-8-18
Field Staff:	Sampling Location ID RH6M
Well Location:	Round No:

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	Stick up / down (m): -0.11 (+ above ground - below ground)
Initial Well Depth (mBTOC):	Screen Interval (mBTOC):
Previous Sampling Date:	Previous SWL (mBTOC):

PID READINGS

PID Headspace (ppm): /	PID Background (ppm): /
PID Breathing Space (ppm): /	

PRE PURGE

Total Well Depth (mBTOC): 8.05	Well Head Condition: good
SWL (mBTOC): 2.14	Water Column (m): 5.91

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC): /	PSH Visually Confirmed (Bailer): /
PSH Thickness (mm): /	

PURGE AND SAMPLE

Sampling Method ☒Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):	Fill Timer: 10
Pump Pressure Regulator (psi): 20	Discharge Timer: 5
Weather Conditions: Fine	Cycle: GPM 4
Pump on time:	Pump off time:

WATER QUALITY PARAMETERS

Probe Make and Model:	Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
1:58	0.5	2.19	20.24	10330	117.6	2.93	6.17	Brown/grey, light, no, no
1:59	1	2.30	20.25	10400	139.2	2.41	5.66	↓
2:02	1.5	2.35	20.34	10380	148.1	1.75	5.51	
2:04	2	2.43	20.25	10330	153.0	1.61	5.47	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE:

Appendix E– Chain of Custody and Sample Receipt Forms

Sheet 1 of 2

Site: 1431 Stoney Creek Rd, Beverly Hills

Project No: E23967

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
BHM_0.3_0.4	1	J, ZLB	13-8-18	AM/PM		x		x														
BHM_1.0-1.1		J, ZLB																				
BHM_2.4-2.5	2	J							x													
BH2_0.3-0.4		J, ZLB																				
BH2_0.9-1.0	3	J, ZLB						x														
BH2_2.0-2.1		J																				
BH3_0.3-0.4	4	J, ZLB						x														
BH3_0.8-0.9		J, ZLB																				
BH3_1.9-2.0		J																				
BH3_2.5-2.6	5	J							x													
BH4_0.3-0.4	6	J, ZLB						x														
BH4_1.9-2.0		J	↓	↓		↓																

SGS EHS Alexandria Laboratory

SE182633 COC
Received: 14 – Aug – 2018

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

- [x] Standard
- [ ] 24 Hours
- [ ] 48 Hours
- [ ] 72 Hours
- [ ] Other_____

Container Type:
J= solvent washed, acid rinsed,Teflon sealed, glass jar
S= solvent washed, acid rinsed glass bottle
P= natural HDPE plastic bottle
VC= glass vial, Teflon Septum
ZLB = Zip-Lock Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):	Received by (SGS):
Print: Nicholas Grbich	Print: Nesa
Signature:	Signature:
Date: 14-8-18	Date: 14/8/18 12:00

Sampler's Comments:

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

Sheet 2 of 2

Site: 143A Stoney Creek Rd, Beverly Hills

Project No: E23967

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	Sample Matrix: SOIL	Sample Matrix: OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	Analysis: HM [A] /TRH/BTEX/PAHs	Analysis: HM [A] /TRH/BTEX	Analysis: BTEX	Analysis: VOCs	Analysis: Asbestos	Analysis: Asbestos Quantification	Analysis: pH / CEC (cation exchange)	Analysis: pH / EC (electrical conductivity)	Analysis: Dewatering Suite	Analysis: sPOCAS	Analysis: PFAS	Analysis:	Analysis:	Analysis:	Analysis: TCLP HM [B] / PAH
BH5M_0.3-0.4	7	J, ZLB	13-8-18	AM/PM		x		x															
BH5M_2.0-2.1	8	J							x														
BH6M_0.3-0.4	9	J, ZLB						x															
BH6M_1.6-1.7		J																					
BH7_0.3-0.4	10	J, ZLB						x															
BH7_1.5-1.6	11	J							x														
BH8_0.3-0.4	12	J, ZLB						x															
BH8_1.0-1.1		J, ZLB																					
QD1	13	J				↓				x													
QR1	14	2xVL,S,P			x					x													
QRB1		2xVL,S,P		↓	x																		
TS1	15	VL	LAB			x					x												
TB1	16	VL				x					x												

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

- [x] Standard
- [ ] 24 Hours
- [ ] 48 Hours
- [ ] 72 Hours
- [ ] Other_____

Container Type:
J= solvent washed, acid rinsed,Teflon sealed, glass jar
S= solvent washed, acid rinsed glass bottle
P= natural HDPE plastic bottle
VC= glass vial, Teflon Septum
ZLB = Zip-Lock Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):	Received by (SGS):
Print: Nicholas Cubich	Print: Nessa
Signature:	Signature:
Date: 14-8-18	Date: 14/8/18 12:00

Sampler's Comments:

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

SAMPLE RECEIPT ADVICE

SE182633

CLIENT DETAILS

Contact	Nicholas Grbich
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	nicholas.grbich@eiaustralia.com.au
Project	**E23967 143A Stoney Creek Rd Beverly Hill**
Order Number	**E23967**
Samples	16

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Tue 14/8/2018
Report Due	Tue 21/8/2018
SGS Reference	**SE182633**

SUBMISSION DETAILS

This is to confirm that 16 samples were received on Tuesday 14/8/2018. Results are expected to be ready by COB Tuesday 21/8/2018. Please quote SGS reference SE182633 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	15 Soil, 1 Water
Date documentation received	14/8/2018	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	6.7ºC	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

SAMPLE RECEIPT ADVICE

SE182633

CLIENT DETAILS

Client EI AUSTRALIA

Project E23967 143A Stoney Creek Rd Beverly Hill

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	BH1M_0.3-0.4	29	14	26	11	7	10	12	8
002	BH1M_2.4-2.5	-	-	26	-	7	10	12	8
003	BH2_0.9-1.0	29	14	26	11	7	10	12	8
004	BH3_0.3-0.4	29	14	26	11	7	10	12	8
005	BH3_2.5-2.6	-	-	26	-	7	10	12	8
006	BH4_0.3-0.4	29	14	26	11	7	10	12	8
007	BH5M_0.3-0.4	29	14	26	11	7	10	12	8
008	BH5M_2.0-2.1	-	-	26	-	7	10	12	8
009	BH6M_0.3-0.4	29	14	26	11	7	10	12	8
010	BH7_0.3-0.4	29	14	26	11	7	10	12	8
011	BH7_1.5-1.6	-	-	26	-	7	10	12	8
012	BH8_0.3-0.4	29	14	26	11	7	10	12	8
013	QD1	-	-	-	-	7	10	12	8
015	TS1	-	-	-	-	-	-	12	-
016	TB1	-	-	-	-	-	-	12	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE182633

CLIENT DETAILS

Client EI AUSTRALIA

Project E23967 143A Stoney Creek Rd Beverly Hill

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	VOCs in Water
001	BH1M_0.3-0.4	2	1	1	-
002	BH1M_2.4-2.5	-	1	1	-
003	BH2_0.9-1.0	2	1	1	-
004	BH3_0.3-0.4	2	1	1	-
005	BH3_2.5-2.6	-	1	1	-
006	BH4_0.3-0.4	2	1	1	-
007	BH5M_0.3-0.4	2	1	1	-
008	BH5M_2.0-2.1	-	1	1	-
009	BH6M_0.3-0.4	2	1	1	-
010	BH7_0.3-0.4	2	1	1	-
011	BH7_1.5-1.6	-	1	1	-
012	BH8_0.3-0.4	2	1	1	-
013	QD1	-	1	1	-
014	QR1	-	-	-	12
016	TB1	-	-	1	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE182633

CLIENT DETAILS

Client EI AUSTRALIA

Project E23967 143A Stoney Creek Rd Beverly Hill

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	Volatile Petroleum Hydrocarbons in Water
014	QR1	1	7	10	8

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

Sheet 1 of 1

Site: 143a Stoney Creek Rd Beverly Hills

Project No: E23967

Laboratory: **SGS Australia**
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	1 Phenols	Hold		TCLP HM [B] / PAH
BH1M	1	2xVC,SP	20-8-18	AM/PM	x				x			x							x			
BH5M	2	↓	↓	↓	↓				x			x							x			
BH6M	3								x			x							x			
GWQD1	4									x												
GWQR1	5									x												
GWQRB1																				x		
GWTB1	6	VC	LAB								x											
GWTS1	7	VC			↓						x											

Container Type:
J= solvent washed, acid rinsed,Teflon sealed, glass jar
S= solvent washed, acid rinsed glass bottle
P= natural HDPE plastic bottle
VC= glass vial, Teflon Septum
ZLB = Zip-Lock Bag

Comments

HM [A]
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

- ☐ Standard
- ☐ 24 Hours
- ☒ 48 Hours
- ☐ 72 Hours
- ☐ Other_____

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):	Received by (SGS):
Print: Nicholas Carbich	Print: Nessa
Signature:	Signature:
Date: 20-8-18	Date: 20/8/18 3:50

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

Sam

SGS EHS Alexandria Laboratory

SE182834 COC
Received: 20 – Aug – 2018

eiaustralia
Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

SAMPLE RECEIPT ADVICE

SE182834

CLIENT DETAILS

Contact	Nicholas Grbich
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	nicholas.grbich@eiaustralia.com.au
Project	**E23967 143a Stoney Creek Rd Beverly Hill**
Order Number	**E23967**
Samples	7

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Mon 20/8/2018
Report Due	Wed 22/8/2018
SGS Reference	**SE182834**

SUBMISSION DETAILS

This is to confirm that 7 samples were received on Monday 20/8/2018. Results are expected to be ready by COB Wednesday 22/8/2018. Please quote SGS reference SE182834 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	7 Water
Date documentation received	20/8/2018	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	4.2°C	Sufficient sample for analysis	Yes
Turnaround time requested	Two Days		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

1 Water Sample on hold

SAMPLE RECEIPT ADVICE

SE182834

CLIENT DETAILS

Client EI AUSTRALIA

Project E23967 143a Stoney Creek Rd Beverly Hill

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	Total Phenolics in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	BH1M	1	22	1	7	10	79	8
002	BH5M	1	22	1	7	10	79	8
003	BH6M	1	22	1	7	10	79	8
004	GWQD1	1	-	-	7	10	12	8
005	GWQR1	1	-	-	7	10	12	8
006	GWTB1	-	-	-	-	-	12	-
007	GWTS1	-	-	-	-	-	12	-

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

Appendix F– Laboratory Analytical Reports

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Nicholas Grbich
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	nicholas.grbich@eiaustralia.com.au
Project	**E23967 143A Stoney Creek Rd Beverly Hill**
Order Number	**E23967**
Samples	16

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE182633 R0**
Date Received	14/8/2018
Date Reported	20/8/2018

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin .

SIGNATORIES

Akheeqar Beniameen
Chemist

Bennet Lo
Senior Organic Chemist/Metals Chemist

Kamrul Ahsan
Senior Chemist

Ravee Sivasubramaniam
Hygiene Team Leader

Shane McDermott
Inorganic/Metals Chemist

Teresa Nguyen
Organic Chemist

VOC's in Soil [AN433] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH1M_2.4-2.5 SOIL - 14/8/2018 SE182633.002	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH3_2.5-2.6 SOIL - 14/8/2018 SE182633.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007	BH5M_2.0-2.1 SOIL - 14/8/2018 SE182633.008	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH7_1.5-1.6 SOIL - 14/8/2018 SE182633.011	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012	QD1 SOIL - 14/8/2018 SE182633.013	TS1 SOIL - 14/8/2018 SE182633.015	TB1 SOIL - 14/8/2018 SE182633.016
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	[113%]	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	[107%]	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	[107%]	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	[105%]	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	[104%]	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	-	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	-	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	-	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH1M_2.4-2.5 SOIL - 14/8/2018 SE182633.002	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH3_2.5-2.6 SOIL - 14/8/2018 SE182633.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007	BH5M_2.0-2.1 SOIL - 14/8/2018 SE182633.008	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH7_1.5-1.6 SOIL - 14/8/2018 SE182633.011	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012	QD1 SOIL - 14/8/2018 SE182633.013
TRH C6-C9	mg/kg	20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH1M_2.4-2.5 SOIL - 14/8/2018 SE182633.002	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH3_2.5-2.6 SOIL - 14/8/2018 SE182633.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007	BH5M_2.0-2.1 SOIL - 14/8/2018 SE182633.008	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	**82**	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	**75**	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	**130**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	**160**	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH7_1.5-1.6 SOIL - 14/8/2018 SE182633.011	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012	QD1 SOIL - 14/8/2018 SE182633.013
TRH C10-C14	mg/kg	20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110
TRH C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH1M_2.4-2.5 SOIL - 14/8/2018 SE182633.002	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH3_2.5-2.6 SOIL - 14/8/2018 SE182633.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	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	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007	BH5M_2.0-2.1 SOIL - 14/8/2018 SE182633.008	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010
Naphthalene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	**0.4**	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	**0.4**	<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	0.1	**0.3**	**0.4**	<0.1	**0.3**	<0.1
Anthracene	mg/kg	0.1	<0.1	**0.1**	<0.1	**0.1**	<0.1
Fluoranthene	mg/kg	0.1	<0.1	**0.7**	<0.1	**0.8**	<0.1
Pyrene	mg/kg	0.1	<0.1	**0.7**	<0.1	**0.8**	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	**0.3**	<0.1	**0.3**	<0.1
Chrysene	mg/kg	0.1	<0.1	**0.2**	<0.1	**0.3**	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	**0.3**	<0.1	**0.3**	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	**0.1**	<0.1	**0.2**	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	**0.2**	<0.1	**0.3**	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	**0.1**	<0.1	**0.1**	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	**0.1**	<0.1	**0.1**	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	**0.3**	<0.2	**0.4**	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	**0.4**	<0.3	**0.5**	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	**0.4**	<0.2	**0.4**	<0.2
Total PAH (18)	mg/kg	0.8	**1.2**	**3.2**	<0.8	**3.5**	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	**3.2**	<0.8	**3.5**	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 17/8/2018 (continued)

PARAMETER	UOM	LOR	BH7_1.5-1.6 SOIL - 14/8/2018 SE182633.011	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012
Naphthalene	mg/kg	0.1	<0.1	**0.1**
2-methylnaphthalene	mg/kg	0.1	<0.1	**0.3**
1-methylnaphthalene	mg/kg	0.1	<0.1	**0.3**
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	**0.2**
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	**0.8**
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 17/8/2018 (continued)

PARAMETER	UOM	LOR	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PARAMETER	UOM	LOR	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH1M_2.4-2.5 SOIL - 14/8/2018 SE182633.002	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH3_2.5-2.6 SOIL - 14/8/2018 SE182633.005
Arsenic, As	mg/kg	1	2	2	2	5	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	7.1	14	14	12	15
Copper, Cu	mg/kg	0.5	9.5	9.9	13	19	10
Lead, Pb	mg/kg	1	9	15	17	35	14
Nickel, Ni	mg/kg	0.5	21	3.8	3.6	6.1	1.7
Zinc, Zn	mg/kg	2	24	14	16	43	8.5

PARAMETER	UOM	LOR	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007	BH5M_2.0-2.1 SOIL - 14/8/2018 SE182633.008	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010
Arsenic, As	mg/kg	1	8	3	3	3	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	27	12	17	12	11
Copper, Cu	mg/kg	0.5	43	23	8.5	22	33
Lead, Pb	mg/kg	1	13	16	19	19	32
Nickel, Ni	mg/kg	0.5	31	10	2.7	12	13
Zinc, Zn	mg/kg	2	82	47	12	46	80

PARAMETER	UOM	LOR	BH7_1.5-1.6 SOIL - 14/8/2018 SE182633.011	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012	QD1 SOIL - 14/8/2018 SE182633.013
Arsenic, As	mg/kg	1	4	7	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	18	28	4.1
Copper, Cu	mg/kg	0.5	8.5	38	4.8
Lead, Pb	mg/kg	1	16	10	6
Nickel, Ni	mg/kg	0.5	2.5	33	13
Zinc, Zn	mg/kg	2	10	72	12

Mercury in Soil [AN312] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH1M_2.4-2.5 SOIL - 14/8/2018 SE182633.002	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH3_2.5-2.6 SOIL - 14/8/2018 SE182633.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007	BH5M_2.0-2.1 SOIL - 14/8/2018 SE182633.008	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH7_1.5-1.6 SOIL - 14/8/2018 SE182633.011	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012	QD1 SOIL - 14/8/2018 SE182633.013
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH1M_2.4-2.5 SOIL - 14/8/2018 SE182633.002	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH3_2.5-2.6 SOIL - 14/8/2018 SE182633.005
% Moisture	%w/w	0.5	20	20	12	17	22

PARAMETER	UOM	LOR	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007	BH5M_2.0-2.1 SOIL - 14/8/2018 SE182633.008	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010
% Moisture	%w/w	0.5	9.5	8.4	20	6.8	18

PARAMETER	UOM	LOR	BH7_1.5-1.6 SOIL - 14/8/2018 SE182633.011	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012	QD1 SOIL - 14/8/2018 SE182633.013	TB1 SOIL - 14/8/2018 SE182633.016
% Moisture	%w/w	0.5	22	8.0	12	<0.5

Fibre Identification in soil [AN602] Tested: 17/8/2018

PARAMETER	UOM	LOR	BH1M_0.3-0.4 SOIL - 14/8/2018 SE182633.001	BH2_0.9-1.0 SOIL - 14/8/2018 SE182633.003	BH3_0.3-0.4 SOIL - 14/8/2018 SE182633.004	BH4_0.3-0.4 SOIL - 14/8/2018 SE182633.006	BH5M_0.3-0.4 SOIL - 14/8/2018 SE182633.007
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	BH6M_0.3-0.4 SOIL - 14/8/2018 SE182633.009	BH7_0.3-0.4 SOIL - 14/8/2018 SE182633.010	BH8_0.3-0.4 SOIL - 14/8/2018 SE182633.012
Asbestos Detected	No unit	-	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01

VOCs in Water [AN433] Tested: 15/8/2018

PARAMETER	UOM	LOR	QR1 WATER - 14/8/2018 SE182633.014
Benzene	µg/L	0.5	<0.5
Toluene	µg/L	0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
Total BTEX	µg/L	3	<3
Naphthalene	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 15/8/2018

PARAMETER	UOM	LOR	QR1 WATER - 14/8/2018 SE182633.014
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 15/8/2018

PARAMETER	UOM	LOR	QR1 WATER - 14/8/2018 SE182633.014
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C36	µg/L	450	<450
TRH C10-C40	µg/L	650	<650
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 15/8/2018

PARAMETER	UOM	LOR	QR1 WATER - 14/8/2018 SE182633.014
Arsenic, As	µg/L	1	<1
Cadmium, Cd	µg/L	0.1	<0.1
Chromium, Cr	µg/L	1	<1
Copper, Cu	µg/L	1	<1
Lead, Pb	µg/L	1	<1
Nickel, Ni	µg/L	1	<1
Zinc, Zn	µg/L	5	**5**

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 15/8/2018

PARAMETER	UOM	LOR	QR1 WATER - 14/8/2018 SE182633.014
Mercury	mg/L	0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC /MS because of the potential for volatiles loss. Total Petroleum Hydrocarbons (TPH) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup /fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS /ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here : http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Client	EI AUSTRALIA
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Telephone	61 2 95160722
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Email	nicholas.grbich@eiaustralia.com.au
Project	**E23967 143A Stoney Creek Rd Beverly Hill**
Order Number	**E23967**
Samples	8

LABORATORY DETAILS

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SGS Reference	**SE182633 R0**
Date Received	14 Aug 2018
Date Reported	20 Aug 2018

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin .

SIGNATORIES

Akheeqar Beniameen
Chemist

Bennet Lo
Senior Organic Chemist/Metals Chemis

Kamrul Ahsan
Senior Chemist

Ravee Sivasubramaniam
Hygiene Team Leader

Shane McDermott
Inorganic/Metals Chemist

Teresa Nguyen
Organic Chemist

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE182633.001	BH1M_0.3-0.4	Soil	156g Clay,Sand,Rocks	14 Aug 2018	No Asbestos Found	<0.01
SE182633.003	BH2_0.9-1.0	Soil	178g Clay,Rocks	14 Aug 2018	No Asbestos Found	<0.01
SE182633.004	BH3_0.3-0.4	Soil	144g Clay,Sand,Soil,Rocks	14 Aug 2018	No Asbestos Found	<0.01
SE182633.006	BH4_0.3-0.4	Soil	160g Clay,Soil,Rocks	14 Aug 2018	No Asbestos Found	<0.01
SE182633.007	BH5M_0.3-0.4	Soil	151g Sand,Rocks,Cement Mixture	14 Aug 2018	No Asbestos Found Organic Fibres Detected	<0.01
SE182633.009	BH6M_0.3-0.4	Soil	159g Clay,Soil,Rocks,Cement Mixture	14 Aug 2018	No Asbestos Found Organic Fibres Detected	<0.01
SE182633.010	BH7_0.3-0.4	Soil	182g Clay,Sand,Soil,Rocks	14 Aug 2018	No Asbestos Found	<0.01
SE182633.012	BH8_0.3-0.4	Soil	173g Sand,Soil,Rocks	14 Aug 2018	No Asbestos Found	<0.01

METHOD SUMMARY

SE182633 R0

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service .
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Sampled by the client.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos -containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here : http://www.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

ANALYTICAL REPORT

Accreditation No. 2562

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Project	**E23967 143a Stoney Creek Rd Beverly Hill**
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SGS Reference	**SE182834 R0**
Date Received	20/8/2018
Date Reported	22/8/2018

COMMENTS

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

SIGNATORIES

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Kamrul Ahsan
Senior Chemist

Shane McDermott
Inorganic/Metals Chemist

Teresa Nguyen
Organic Chemist

VOCs in Water [AN433] Tested: 21/8/2018

PARAMETER	UOM	LOR	BH1M WATER - 20/8/2018 SE182834.001	BH5M WATER - 20/8/2018 SE182834.002	BH6M WATER - 20/8/2018 SE182834.003	GWQD1 WATER - 20/8/2018 SE182834.004	GWQR1 WATER - 20/8/2018 SE182834.005
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1	<1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3	<3	<3	<3
Naphthalene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	<5	-	-
Chloromethane	µg/L	5	<5	<5	<5	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	<0.3	-	-
Bromomethane	µg/L	10	<10	<10	<10	-	-
Chloroethane	µg/L	5	<5	<5	<5	-	-
Trichlorofluoromethane	µg/L	1	<1	<1	<1	-	-
Acetone (2-propanone)	µg/L	10	<10	<10	<10	-	-
Iodomethane	µg/L	5	<5	<5	<5	-	-
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Acrylonitrile	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dichloromethane (Methylene chloride)	µg/L	5	<5	<5	<5	-	-
Allyl chloride	µg/L	2	<2	<2	<2	-	-
Carbon disulfide	µg/L	2	<2	<2	<2	-	-
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	<2	<2	-	-
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Vinyl acetate	µg/L	10	<10	<10	<10	-	-
MEK (2-butanone)	µg/L	10	<10	<10	<10	-	-
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Bromochloromethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Chloroform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dibromomethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2-nitropropane	µg/L	100	<100	<100	<100	-	-
Bromodichloromethane (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5	<5	-	-
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dibromochloromethane (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2-hexanone (MBK)	µg/L	5	<5	<5	<5	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Chlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Bromoform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
cis-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	-	-
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	-	-

VOCs in Water [AN433] Tested: 21/8/2018 (continued)

PARAMETER	UOM	LOR	BH1M WATER - 20/8/2018 SE182834.001	BH5M WATER - 20/8/2018 SE182834.002	BH6M WATER - 20/8/2018 SE182834.003	GWQD1 WATER - 20/8/2018 SE182834.004	GWQR1 WATER - 20/8/2018 SE182834.005
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Bromobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
n-propylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
4-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
tert-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
sec-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	<0.3	-	-
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
n-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Total VOC	µg/L	10	<10	<10	<10	-	-

VOCs in Water [AN433] Tested: 21/8/2018 (continued)

PARAMETER	UOM	LOR	GWTB1 WATER - 20/8/2018 SE182834.006	GWTS1 WATER - 20/8/2018 SE182834.007
Benzene	µg/L	0.5	<0.5	[96%]
Toluene	µg/L	0.5	<0.5	[94%]
Ethylbenzene	µg/L	0.5	<0.5	[99%]
m/p-xylene	µg/L	1	<1	[98%]
o-xylene	µg/L	0.5	<0.5	[92%]
Total Xylenes	µg/L	1.5	<1.5	-
Total BTEX	µg/L	3	<3	-
Naphthalene	µg/L	0.5	<0.5	-
Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-
Chloromethane	µg/L	5	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-
Bromomethane	µg/L	10	-	-
Chloroethane	µg/L	5	-	-
Trichlorofluoromethane	µg/L	1	-	-
Acetone (2-propanone)	µg/L	10	-	-
Iodomethane	µg/L	5	-	-
1,1-dichloroethene	µg/L	0.5	-	-
Acrylonitrile	µg/L	0.5	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-
Allyl chloride	µg/L	2	-	-
Carbon disulfide	µg/L	2	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-	-
1,1-dichloroethane	µg/L	0.5	-	-
Vinyl acetate	µg/L	10	-	-
MEK (2-butanone)	µg/L	10	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-
Bromochloromethane	µg/L	0.5	-	-
Chloroform (THM)	µg/L	0.5	-	-
2,2-dichloropropane	µg/L	0.5	-	-
1,2-dichloroethane	µg/L	0.5	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-
1,1-dichloropropene	µg/L	0.5	-	-
Carbon tetrachloride	µg/L	0.5	-	-
Dibromomethane	µg/L	0.5	-	-
1,2-dichloropropane	µg/L	0.5	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	-	-
2-nitropropane	µg/L	100	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-
1,3-dichloropropane	µg/L	0.5	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	-
2-hexanone (MBK)	µg/L	5	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-
Chlorobenzene	µg/L	0.5	-	-
Bromoform (THM)	µg/L	0.5	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-
Styrene (Vinyl benzene)	µg/L	0.5	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-

VOCs in Water [AN433] Tested: 21/8/2018 (continued)

PARAMETER	UOM	LOR	GWTB1 WATER - 20/8/2018 SE182834.006	GWTS1 WATER - 20/8/2018 SE182834.007
Isopropylbenzene (Cumene)	µg/L	0.5	-	-
Bromobenzene	µg/L	0.5	-	-
n-propylbenzene	µg/L	0.5	-	-
2-chlorotoluene	µg/L	0.5	-	-
4-chlorotoluene	µg/L	0.5	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-
tert-butylbenzene	µg/L	0.5	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-
sec-butylbenzene	µg/L	0.5	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-
p-isopropyltoluene	µg/L	0.5	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-
n-butylbenzene	µg/L	0.5	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-
Hexachlorobutadiene	µg/L	0.5	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-
Total VOC	µg/L	10	-	-

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 21/8/2018

PARAMETER	UOM	LOR	BH1M WATER - 20/8/2018 SE182834.001	BH5M WATER - 20/8/2018 SE182834.002	BH6M WATER - 20/8/2018 SE182834.003	GWQD1 WATER - 20/8/2018 SE182834.004	GWQR1 WATER - 20/8/2018 SE182834.005
TRH C6-C9	µg/L	40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 21/8/2018

PARAMETER	UOM	LOR	BH1M WATER - 20/8/2018 SE182834.001	BH5M WATER - 20/8/2018 SE182834.002	BH6M WATER - 20/8/2018 SE182834.003	GWQD1 WATER - 20/8/2018 SE182834.004	GWQR1 WATER - 20/8/2018 SE182834.005
TRH C10-C14	µg/L	50	<50	<50	<50	<50	<50
TRH C15-C28	µg/L	200	<200	<200	<200	<200	<200
TRH C29-C36	µg/L	200	<200	<200	<200	<200	<200
TRH C37-C40	µg/L	200	<200	<200	<200	<200	<200
TRH >C10-C16	µg/L	60	<60	<60	<60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500	<500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500	<500	<500
TRH C10-C36	µg/L	450	<450	<450	<450	<450	<450
TRH C10-C40	µg/L	650	<650	<650	<650	<650	<650
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	<60	<60	<60

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 21/8/2018

PARAMETER	UOM	LOR	BH1M WATER - 20/8/2018 SE182834.001	BH5M WATER - 20/8/2018 SE182834.002	BH6M WATER - 20/8/2018 SE182834.003
Naphthalene	µg/L	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1	<1

Total Phenolics in Water [AN289] Tested: 22/8/2018

PARAMETER	UOM	LOR	BH1M WATER - 20/8/2018 SE182834.001	BH5M WATER - 20/8/2018 SE182834.002	BH6M WATER - 20/8/2018 SE182834.003
Total Phenols	mg/L	0.05	<0.05	<0.05	<0.05

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 22/8/2018

PARAMETER	UOM	LOR	BH1M WATER - 20/8/2018 SE182834.001	BH5M WATER - 20/8/2018 SE182834.002	BH6M WATER - 20/8/2018 SE182834.003	GWQD1 WATER - 20/8/2018 SE182834.004	GWQR1 WATER - 20/8/2018 SE182834.005
Arsenic, As	µg/L	1	<1	1	2	<1	<1
Cadmium, Cd	µg/L	0.1	<0.1	0.3	1.6	<0.1	<0.1
Chromium, Cr	µg/L	1	1	<1	1	<1	<1
Copper, Cu	µg/L	1	56	21	81	4	<1
Lead, Pb	µg/L	1	3	1	6	<1	<1
Nickel, Ni	µg/L	1	43	78	110	36	<1
Zinc, Zn	µg/L	5	130	95	370	47	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 22/8/2018

PARAMETER	UOM	LOR	BH1M WATER - 20/8/2018 SE182834.001	BH5M WATER - 20/8/2018 SE182834.002	BH6M WATER - 20/8/2018 SE182834.003	GWQD1 WATER - 20/8/2018 SE182834.004	GWQR1 WATER - 20/8/2018 SE182834.005
Mercury	mg/L	0.0001	0.0003	0.0003	0.0003	0.0002	0.0002

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN289	Analysis of Total Phenols in Soil Sediment and Water: Steam distillable phenols react with 4-aminoantipyrine at pH 7.9±0.1 in the presence of potassium ferricyanide to form a coloured antipyrine dye analysed by Discrete Analyser. Reference APHA 5530 B/D.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.
AN403	Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoveerable Hydrocarbons - Silica (TRH-Silica) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here : http://www.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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Appendix G– Laboratory QA/QC Policies and DQOs

Appendix H- QA/QC Assessment

H1QUALITY CONTROL PROGRAM

H1.1PROJECT QA/QC PROTOCOLS

The overall quality assurance comprises an assessment of the reliability of the field procedures and the laboratory results against standard industry practices, documented sampling and analysis plans or remediation action plans. A summary of the project QA/QC protocols to be followed during the investigation works is presented in **Table H-1.**

Table H-1QA/QC Protocols

Task	Description	Project
Field QA/QC		
General	Work was be undertaken following standard field procedures which are based on industry accepted standard practice.	Soil samples were generally collected directly off the drilling rods or hand auger. Soil samples were placed in 250 gram glass jars, which were filled to minimise headspace, and sealed using Teflon-coated lids.
	All fieldwork was supervised by a suitably qualified and experienced scientist or engineer.	Yes
Soil screening with PID	The PID was serviced and calibrated as per the manufacturer requirements. PID calibrated at the beginning and end of each day of fieldwork.	Yes
Equipment decontamination / Rinsate Samples	Sampling equipment to be decontaminated after the collection of each sample by washing with phosphate-free detergent (such as Decon 90) and potable water, followed by a final distilled water rinse. One rinsate blank would be collected per sampling event and analysed for the primary contaminants. All results should be non-detect.	Yes
Transport	Samples were stored in ice-brick cooled cooler box and transported to the primary and secondary laboratories. To ensure the integrity of the samples from collection to receipt by the analytical laboratory, samples were sent by courier to the laboratories under ‘chain of custody’ describing sample preservation, and transport duration.	Yes
Trip Blanks	Trip blank samples were prepared and analysed by the primary laboratory for BTEX and naphthalene. Analytical results for trip blank samples below the laboratory PQLs, indicate that ideal sample transport and handling conditions are achieved.	Yes

Task	Description	Project
Trip Spikes	Trip spike samples were prepared and analysed by the primary laboratory for BTEX. Acceptance criteria of BTEX spike recoveries are between 70% - 130%.	Yes Volatile contamination was not identified in any of soil samples or detected through field soil vapour screening with PID or unusual odour. Samples were stored under chilled / refrigerated conditions on site and in the laboratory and thus potential volatile losses were minimised. The absence of trip spike result does not affect the overall reliability of the data. Recoveries of the trip spike for Solis and GMEs was within the acceptance criteria.
QA samples	Field and laboratory QA samples will be analysed as follows: intra-laboratory and inter-laboratory duplicate samples will be collected at a rate of 1 pair per 20 primary samples	Part See **Table H-2** Calculated RPD (**table B.3)** values between most primary and field duplicate samples are within the acceptance criteria (**Section H1.2**), with the exception of: • Between soil sample BH1M_0.3-0.4 and QD1: o Chromium (53.57%) o Copper (65.73%) o Zinc (66.67%) • Between soil sample BH1M_0.3-0.4 and QT1: o Chromium (160.53%) o Copper (104.00%) o Lead (168.42%) o Nickel (52.63%) o Zinc (64.79%) • Between water sample BH1M and GWQD1: o Copper (173.33%) o Lead (114.29%) o Zinc (93.79%) The exceedances were considered a result of sample heterogeneity. RPD exceedances in question do not affect the overall conclusion drawn in regards to soil and groundwater conditions at the site.
Laboratory QA/QC		
Laboratory analysis	The laboratories selected are NATA accredited for the analytes selected and perform their own internal QA/QC programs	Yes SGS - primary laboratory Envirolab - secondary laboratory The laboratory QA/QC reports are included in **Appendix G.**

Task	Description	Project
	Appropriate detection limits were used for the analyses to be undertaken.	Practical Quantitation Limits for all tested parameters during the assessment of soils and groundwater are presented in summary tables **Table B.1 – B.2**
	Methods followed are generally in accordance with the requirements of NEPM (2013).	Yes
Holding Times	Holding times are the maximum permissible elapsed time in days from the collection of the sample to its extraction and/or analysis. All extraction and analyses should be completed within standard guidelines.	Yes
Laboratory Duplicates	Laboratory duplicates are field samples that are split in the laboratory and subsequently analysed a number of times in the same batch. These sub-samples are selected by the laboratory to assess the accuracy and precision of the analytical method. The selected laboratories should undertake QA/QC procedures such as calibration standards, laboratory control samples, surrogates, reference materials, sample duplicates and matrix spikes. Intra-laboratory duplicates should be performed at a frequency of 1 per 10 samples.	The Laboratory duplicate samples for the analysis batches showed most calculated RPDs that were within acceptable ranges and conformed to the DAC. Exceptions are noted to be: • SE182633.010: o Arsenic (58%) o Nickel (113%) o Zinc (39%) • SE182637.005: o Lead (35%) o Zinc (41%) Exceedances of the acceptable ranges were attributed to sample heterogeneity.
Laboratory Control Standard	A laboratory control standard is a standard reference material used in preparing primary standards. The concentration should be equivalent to a mid-range standard to confirm the primary calibration. Laboratory control samples should be performed on a frequency of 1 per 20 samples or at least one per analytical run.	The Laboratory Control Samples for the analysis batches were within acceptable ranges.

Task	Description	Project
Matrix Spikes / Matrix Spike Duplicates (MS/MSD)	MS/MSDs are field samples to which a predetermined stock solution of known concentration has been added. The samples are then analysed for recovery of the known addition. Recoveries should be within the stated laboratory control limits of 70 to 130% and duplicates should have RPDs of less than 50%.	Most MS / MSD for the analysis batches were within acceptable ranges with the exception of: • SE182608.002: o TRH C15-C28 (207%) o TRH C29-C36 (142% o TRH F3 (205%) o TRH F4 (146%) • SE182834.001: o Lead (66%) o Zinc (60%) Recovery failure was attributed to sample matrix interference.
Surrogate Spikes	Surrogate spikes provide a means of checking, for every analysis that no gross errors have occurred at any stage of the procedure leading to significant analyte loss. Recoveries should be within the stated laboratory control limits of 70 to 130%.	Surrogate spikes for the analysis batches were within acceptable ranges.
QA/QC Conclusion	The QA/QC indicators should either all comply with the required standards or showed no variations that would have no significant effect on the quality of the data.	EI considers that although a small number of discrepancies were identified, which in most cases could be attributed to the heterogeneous nature of the submitted samples, the data generally confirms that the analytical results for the various phases of laboratory testing were valid and useable for interpretation purposes.

H1.2CALCULATION OF RELATIVE PERCENTAGE DIFFERENCE (RPD)

The RPD values were calculated using the following equation:

$$RPD = \frac{|C_O - C_R|}{[(C_O + C_R)/2]} \times 100$$

Where:

C_O = Concentration obtained for the primary sample; and

C_R = Concentration obtained for the blind replicate or split duplicate sample.

Data precision would be deemed acceptable if RPDs are found to be less than 30%. RPDs that exceed this range may be considered acceptable where:

- Results are less than 10 times the limits of reporting (LOR);
- Results are less than 20 times the LOR and the RPD is less than 50%; or
- Heterogeneous materials or volatile compounds are encountered.

In cases where RPD value was considered unacceptable, the analytical results of primary and duplicate samples were both reviewed against the adopted assessment criteria. If the review

indicates the variations in data between the primary and duplicate samples would result in a different conclusion (e.g. the higher concentration is failing the assessment criteria), the need for re-sampling / validation would be considered.

H2FIELD QA/QC DATA PROGRAM

H2.1FIELD QA SAMPLING PROGRAM

The field quality assurance/quality control (QA/QC) samples collected during the investigation works are summarised on **Table H-2.** Inter-lab duplicates were analysed by the secondary laboratory, Envirolab. Analytical results of the Field QA samples are tabulated in **Table H-3**, alongside calculated RPDs between the primary and field duplicate samples.

Table H-2Field QA Sampling Program

Activity	Matrix	No. Primary Samples	Primary Sample ID	Intra-Lab Duplicate ID	Inter-Lab Duplicate ID	No. of Duplicates	Duplicate Ratio
Field QA Samples - Duplicates							
Soil Investigation	Soil	9	BH1M_0.3-0.4	QD1	QT1	1	1:12
GME	Water	3	BH1M	GWQD1	-	1	1:3
Other Field QA Samples							
Soil Investigation	Soil	TB1 – trip blank TS1 – trip spike					
	Water	QR1 – rinsate					
GME	Water	GWQR - Rinsate GWTB – Trip blank GWTS – Trip spike					

H2.2Field Data Quality Indicators

A discussion of the field data quality indicators is presented below.

Table H-4Field Data Quality Indicators

QA/QC Measures	Field Data Quality Indicators	Conformance / Comments
Precision – A quantitative measure of the variability (or reproducibility) of data	Standard operation procedures appropriate and complied with	Yes
Completeness – A measure of the amount of useable	Each critical location sampled	Yes
	Samples collected at targeted locations and depth	Yes

QA/QC Measures	Field Data Quality Indicators	Conformance / Comments
data from a data collection activity	SAQP appropriate and complied with	Yes
	Experienced sampler	Yes
	Field documentation correct	Yes
Comparability – The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Same sampling method used on each occasion/location	Yes
	Experienced sampler	Yes
	Climatic conditions (temperature, rainfall, wind)	Climate conditions were recorded to be fine. These climatic conditions unlikely had significant influence on the results of the investigation.
	Same type of samples collected (filtered, size, fractions)	Yes
Representativeness – The confidence (expressed qualitatively) that data are representative of each medium present onsite	Appropriate media sampled according to SAQP	Yes
	Each media identified in SAQP sampled	Yes
	Appropriate sample collection methodologies, handling, storage and preservation techniques used	Yes
	Consistency between field observations and laboratory results.	Yes
Accuracy – A quantitative measure of the closeness of reported data to the "true" value	Standard operation procedures appropriate and complied with	Yes
	Calibration of instruments against known standards	Yes

H2.3CONCLUSION FOR THE FIELD QA/QC

Based on the above review of the field QA/QC data EI considered the field QA/QC programme carried out during the investigations to be appropriate and the results to be acceptable.

H3LABORATORY QA/QC

H3.1LABORATORY ACCREDITATION

Primary and intra-laboratory duplicate samples were analysed by SGS Alexandria Environmental, NSW; inter-laboratory triplicate samples were analysed by Envirolab, Chatswood NSW; all laboratories are accredited by NATA for the analyses undertaken.

A discussion of the laboratory DQIs is presented below.

Table H-5Lab Data Quality Indicators

QA/QC Measures	Laboratory Data Quality Indicators	Conformance/Comments
Completeness – A measure of the amount of useable data from a data collection activity	All critical samples analysed according to SAQP and proposal	Yes
	All analytes analysed according to SAQP in proposal	Yes
	Appropriate methods and PQLs	Yes
	Sample documentation complete	Yes
	Sample holding times complied with	Yes
Comparability – The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Same sample analytical methods used (including clean-up)	Yes
	Same Sample PQLs	Yes
	Same laboratories (NATA-accredited)	Yes
	Same units	Yes
Representativeness – The confidence (expressed qualitatively) that data are representative of each medium present onsite	All key samples analysed according to SAQP in the proposal.	Yes
	Analysis of laboratory-prepared volatile trip spikes and trip blanks	Yes
Precision – A quantitative measure of the variability (or reproducibility) of data	Analysis of laboratory and inter-laboratory duplicates	Yes
	Analysis of field duplicates	Yes
Accuracy – A quantitative measure of the closeness of reported data to the	Analysis of rinsate blanks	Yes
	Analysis of reagent blanks	Not applicable
	Analysis of method blanks	Yes

QA/QC Measures	Laboratory Data Quality Indicators	Conformance/Comments
"true" value	Analysis of matrix spikes (MS)	Yes
	Analysis of matrix spike duplicates (MSD)	Yes
	Analysis of surrogate spikes	Yes
	Analysis of reference materials	Not applicable
	Analysis of laboratory control samples	Yes
	Analysis of laboratory-prepared spikes	Yes

Overall, it is considered that the laboratory data quality objectives for this project have been attained.

H3.2Conclusions on Lab QA/QC

Based on the laboratory QA/QC results EI considers that although a small number of discrepancies were identified, which in most cases could be attributed to the non-homogenous nature of the submitted samples, the data generally confirms that the analytical results for the various phases of laboratory testing were valid and useable for interpretation purposes.

H4Summary of Project QA/QC

The sampling methods (including sample preservation, transport and decontamination procedures) and laboratory methods followed during this investigation works were mostly consistent with EI protocols and meeting the DQOs for this project. Some discrepancies from the DQOs were reported however they were considered to not be detrimental to the validity of collected data. It is therefore considered that the data is sufficiently precise and accurate and that the results can be relied upon for interpretation.

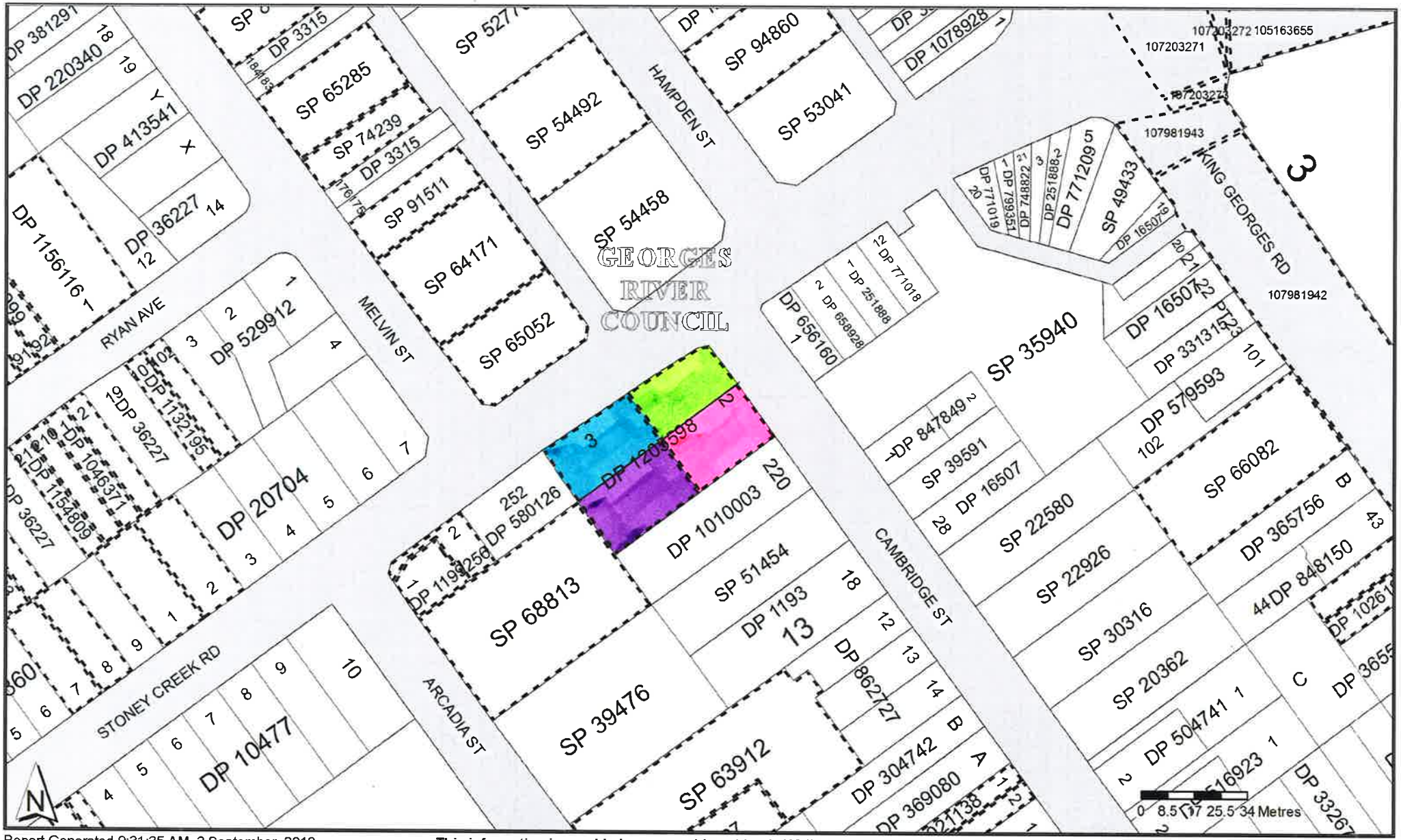
Appendix I– Land Titles

LAND REGISTRY SERVICES

Cadastral Records Enquiry Report : Lot 2 DP 1205598

Ref : NOUSER

Locality : BEVERLY HILLS
Parish : ST GEORGE
LGA : GEORGES RIVER
County : CUMBERLAND



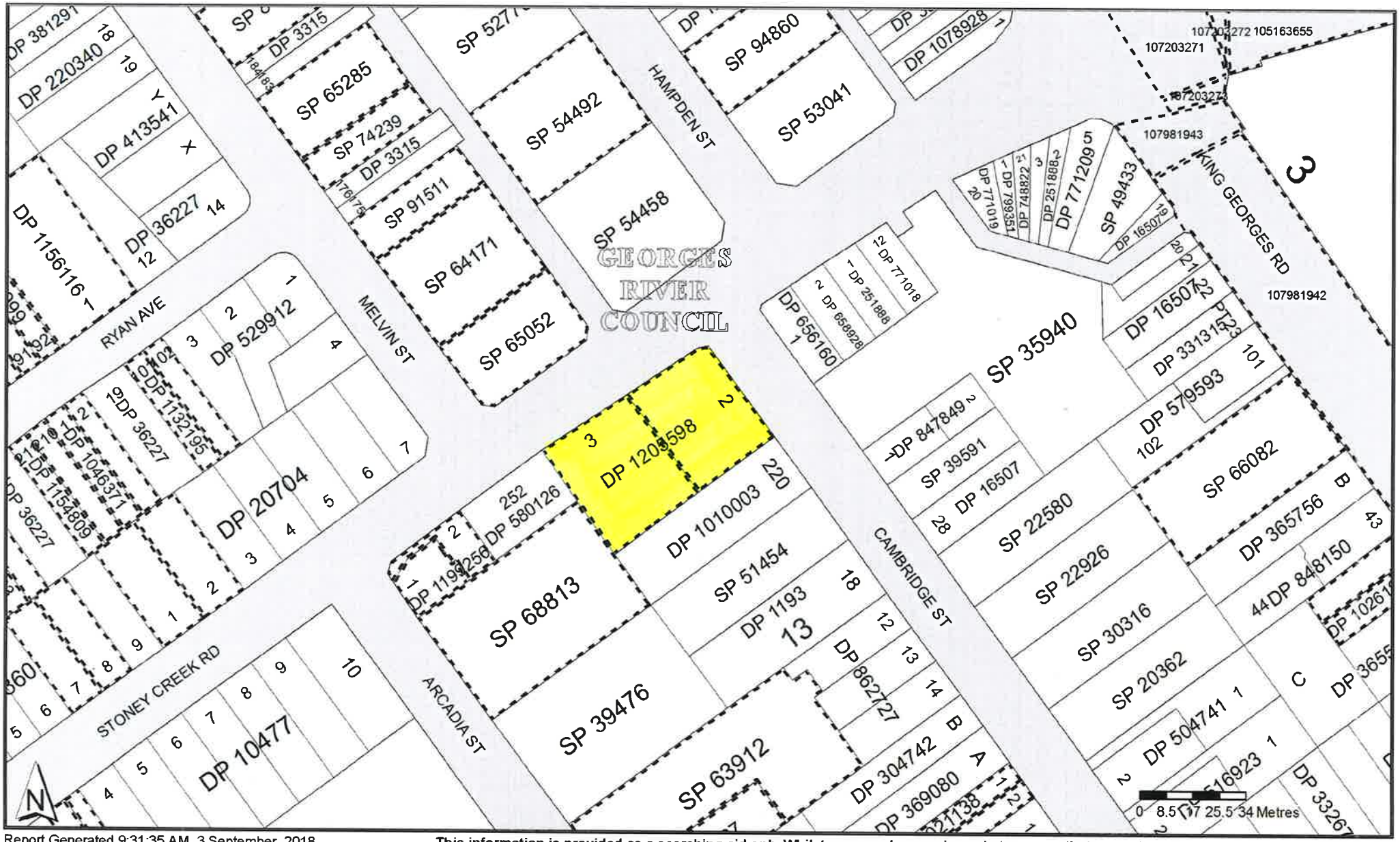
Report Generated 9:31:35 AM, 3 September, 2018

LAND REGISTRY SERVICES

Cadastral Records Enquiry Report : Lot 2 DP 1205598

Ref : NOUSER

Locality : BEVERLY HILLS
Parish : ST GEORGE
LGA : GEORGES RIVER
County : CUMBERLAND



Report Generated 9:31:35 AM, 3 September, 2018

e-departmental

DP 1205598

Registered : 05.02.2015

Title System : TORRENS

Purpose : DEPARTMENTAL

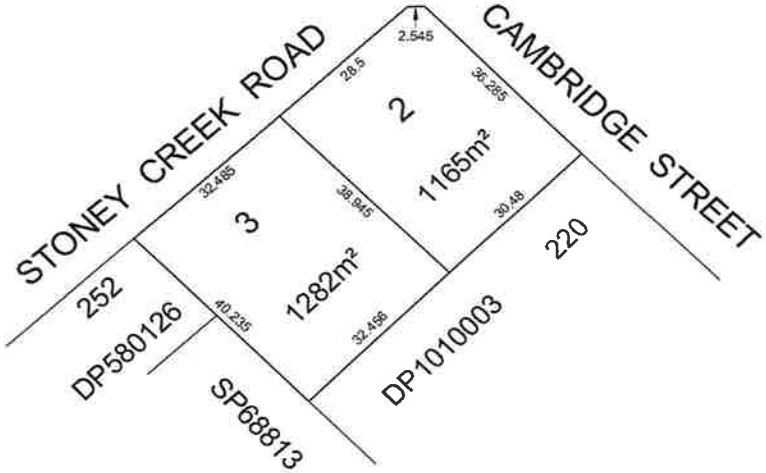
Ref. Map : U0037-61

Last Plan : DP210233

PLAN OF PART LOTS 1 AND 2 IN DP210233 AFTER ROAD ACTION VIDE W86409

Lengths are in metres. Reduction Ratio - NTS
LPI Ref. : SCP2

Sheet 1 of 1 sheets



L.G.A. : HURSTVILLE

LOCALITY: BEVERLY HILLS

PARISH: ST GEORGE

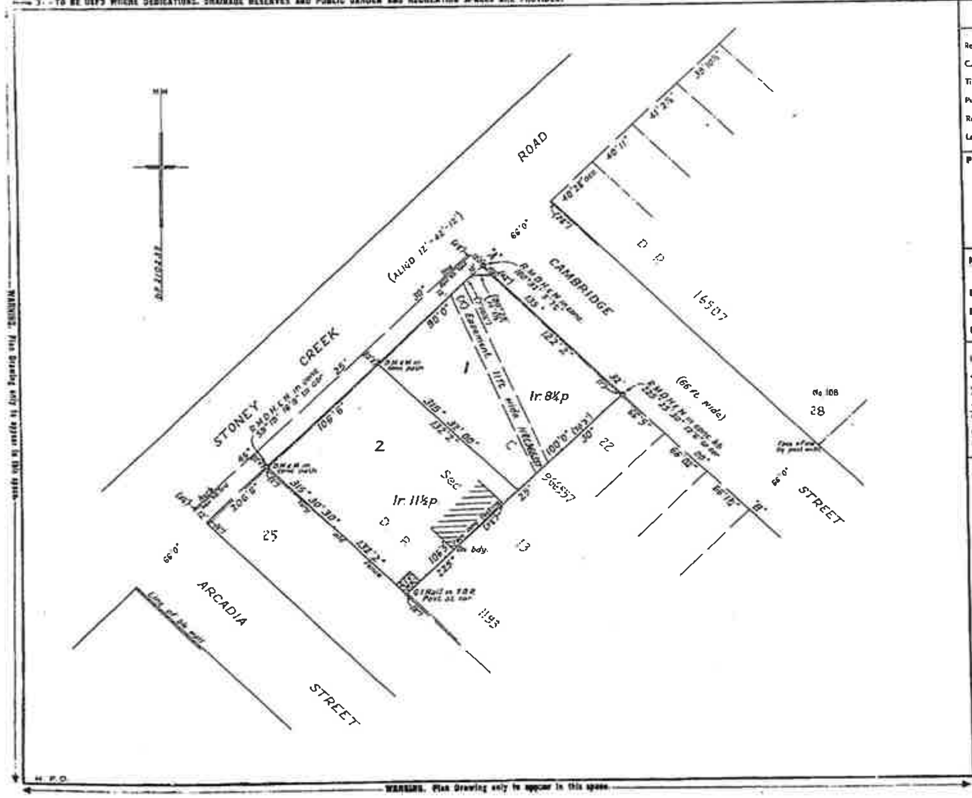
COUNTY: CUMBERLAND

LOT	PRIOR IDENTITY
2	PART LOT 1 IN DP 210233
3	PART LOT 2 IN DP 210233

THIS PLAN HAS BEEN PREPARED TO PROVIDE AN UNIQUE IDENTITY FOR THE LAND IN THE CERTIFICATE OF TITLE REFERRED TO ABOVE.

IT IS NOT A CURRENT PLAN IN THE TERMS OF 7A OF THE CONVEYANCING ACT, 1919.

3.- TO BE USED WHERE DEDICATIONS, DRAINAGE RESERVES AND PUBLIC GARDEN AND RECREATION SPACES ARE PROVIDED.



WARNING: Plan Drawing only to appear in this space.

DP210233

Registered: 2.4.62
C.A.: 3039 of 26.9.61
Title System: Torrens
Purpose: Subdivision
Ref. Map: Hurstville Sh.3
Last Plan: C966557 D.P. 1193

PLAN OF

Subdivision of Lots 24 & 26, Sec 13 D.P. 1193

Scale: 40 Feet to an Inch

Mun. City: Hurstville
Locality: Beverly Hills
Parish: St. George
County: Cumberland

I, Terrence Charles Meehan of P.W. Rygate & West, Sydney

Statements of Dedications, Easements. (Signatures and Seals to appear in panel provided.)

It is intended to dedicate the splayed corner of Lot 1 to the public.

OFFICE USE ONLY.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION.

SIGNATURES AND SEALS ONLY.

William Hare

Subdivision No. 3039/61 ... 26th September 1961

Approved by Council.

AMENDMENTS OR ADDITIONS NOTED ON PLAN IN REGISTRAR GENERAL'S OFFICE.

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 210233

FEET	INCHES	METRES
-	1	0.025
-	2	0.051
-	2 1/4	0.057
-	3 1/4	0.083
-	3 1/2	0.089
-	4 1/4	0.108
-	4 1/2	0.114
-	5	0.127
-	8	0.203
-	10	0.254
-	11	0.279
1	2 3/8	0.365
5	7 1/2	1.715
5	7 3/4	1.721
7	10 1/2	2.400
10	-	3.048
11	-	3.353
12	-	3.658
12	2	3.708
12	2 1/2	3.721
12	4	3.759
12	6	3.810
14	1 1/2	4.305
16	8	5.080
39	10 1/2	12.154
40	2 1/4	12.249
40	11	12.471
41	2 1/2	12.560
42	-	12.802
66	-	20.117
66	0 1/4	20.123
66	1 3/4	20.161
66	5	20.244
70	5	21.463
90	-	27.432
100	-	30.480
106	5	32.436
106	6	32.461
122	2	37.236
132	2	40.234
206	6	62.941

AC	RD	P	SQ M
-	1	8 1/4	1220
-	1	11 1/2	1303

1

D.P. 1193

Pens...
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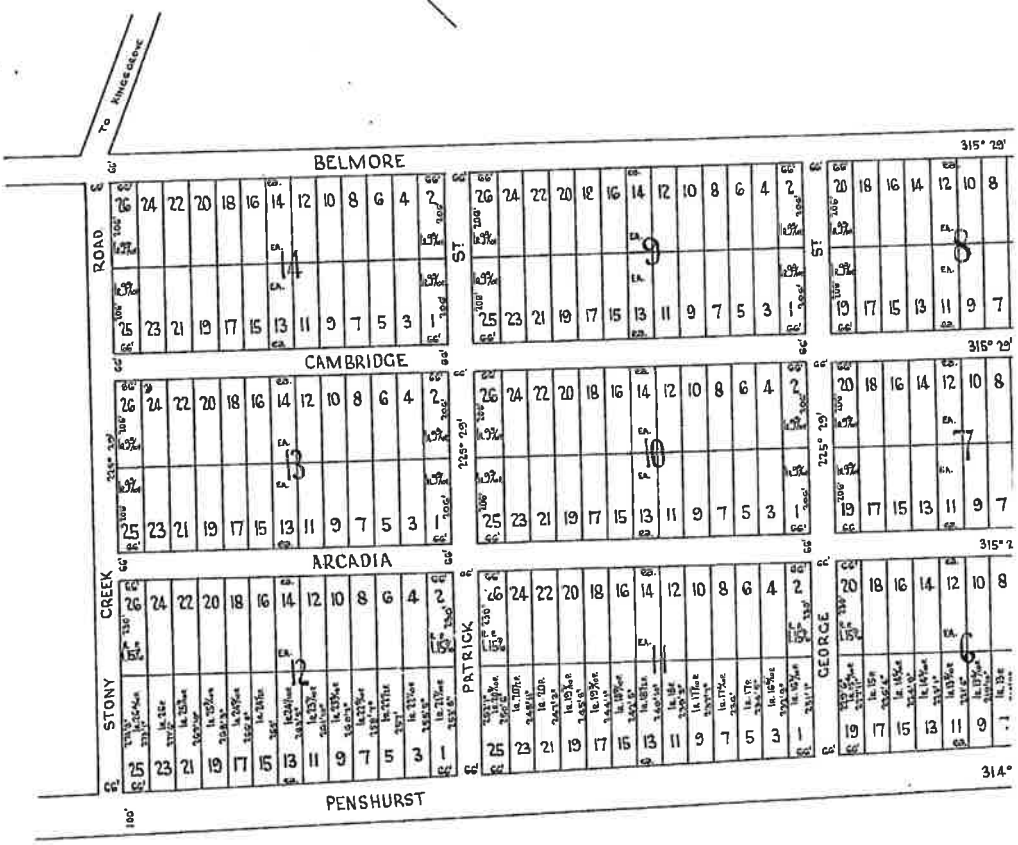
Parish of St George ...
Scale:- 200 ft...



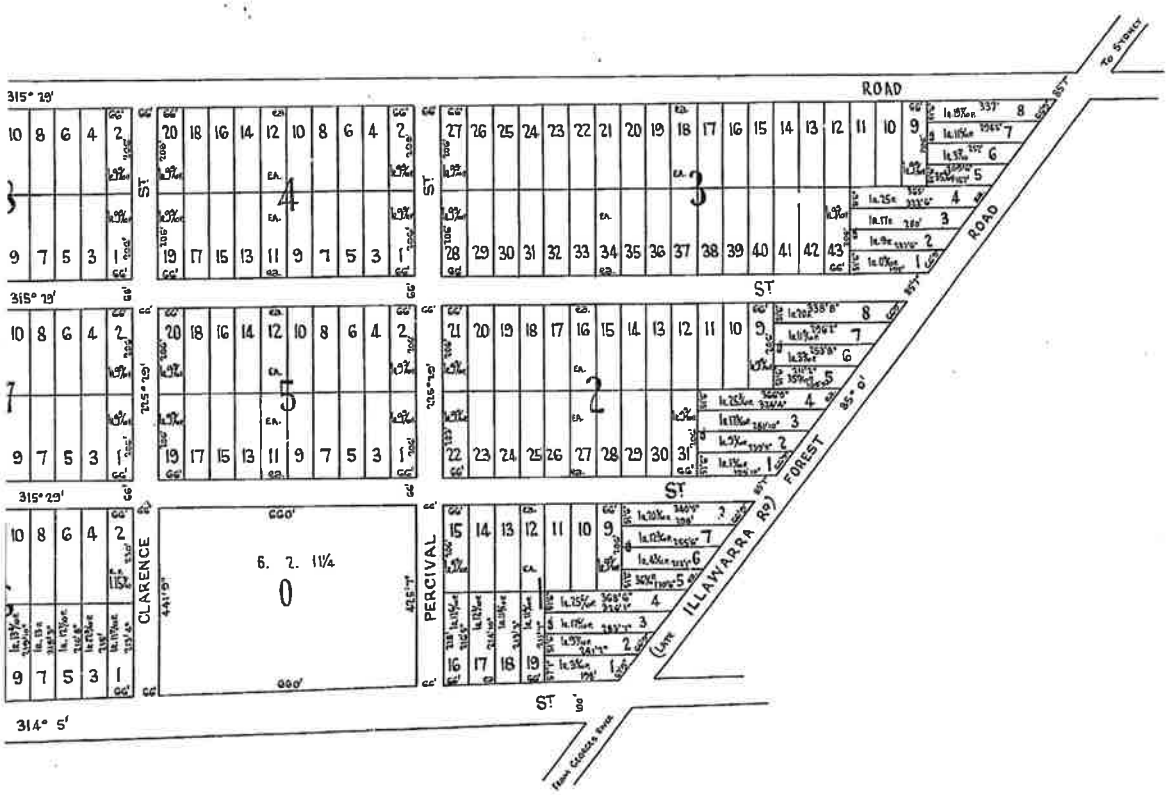
D.A.R. 19.C.'54

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 21st day of June, 1979

Req:R193692 /Doc:DP 0001193 P /Rev:22-Jul-1992 /Sts:OK.OK /Pgs:ALL /Prt:03-Sep-2018 10:01 /Seq:1 of 5
Ref:Beverley Hills /Src:M

Copy of D.P. 1193

shurst Park
t of Deposited Plan 53
HURSTVILLE
ɔrge – County of Cumberland
:- 200 ft. to one inch.



(Sgd.) C. B. DAWSON.
LICENSED SURVEYOR.

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 21st day of June, 1979

PENSHURST PAR

— PART OF CONNELL'S BL

PARISH OF ST. GEO

Scale 200 feet to 1 inch.

Part of 1605 ac Grant to Robert Townson 1st Ja

to Kingsgrove

Dep. Plan 2684 Dep. Plan 3111 Dep.

BELMORE STREET

CAMBRIDGE STREET

ARCADIA STREET

PENSHURST STREET

KINGSGROVE ROAD

PATRICK STREET

GEORGE STREET

CLARENCE STR

315·29

225·29

319·5

for subdivision here see Depd Plan 1910

D.P. 1193

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 21st day of June, 1979

DP 1193

RST PARK ESTATE

RTOFCONNELL'S BUSH —

ISH OF ST GEORGE

1193

Scale 200 feet to 1 inch.

1605 ac Grant to Robert Townson 1st Jany 1810

COPY MADE M.J.M. 24.11.95
EXAMINED [illegible] 10.5.95

3111 Dep. Plan 1769 Dep. Plan 1426

ROAD

STREET

CLARENCE STREET

PERCIVAL STREET

ILLAWARRA ROAD

New Forest Road

to Sydney

from Georges River

Dep^d Plan 1910

L.B. Dawson
Licensed Surveyor

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 21st day of June, 1979

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 1193X

FEET	INCHES	METRES
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66	9	20.345
67	9	20.65
85	7	26.085
100	-	30.48
167	-	50.9
168	9	51.44
170	6	51.97
195	-	59.44
196	10	59.99
198	-	60.35
206	-	62.79
209	6	63.86
211	2	64.36
211	7	64.49
213	1	64.95
213	3	65
213	4	65.02
214	10	65.48
215	-	65.53
216	5	65.96
216	6	65.99
216	8	66.04
218	-	66.45
218	3	66.52
219	10	67.01
221	6	67.51
223	1	68
224	8	68.48
226	4	68.99
227	11	69.47
229	6	69.95
230	-	70.1
231	1	70.43
232	9	70.94
234	5	71.45
236	-	71.93
237	6	72.39
237	7	72.42
239	3	72.92
239	5	72.97
240	10	73.41
241	2	73.51
242	5	73.89
244	1	74.4
245	8	74.88
247	3	75.36
248	11	75.87
250	6	76.35
252	-	76.81
252	1	76.84
253	8	77.32
255	5	77.85
255	6	77.88
257	-	78.33
258	7	78.82
260	2	79.3
261	10	79.81
263	5	80.29
265	-	80.77
265	5	80.9
266	8	81.28
268	3	81.76
269	10	82.25
271	6	82.75
273	1	83.24
274	8	83.72
280	-	85.34
281	10	85.9
283	7	86.44
294	6	89.76
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298	-	90.83
322	6	98.3

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 1193 CONTINUED

FEET	INCHES	METRES
324	4	98.86
326	1	99.39
337	-	102.72
338	8	103.23
340	5	103.76
365	-	111.25
366	9	111.79
368	6	112.32
425	7	129.72
441	9	134.65
660	-	201.17
725	7	221.16

AC	RD	P	SQ M
-	-	15.7	397.1
-	-	35.6	900.4
-	-	35.9	908
-	-	36.2	915.6
-	-	36.3	918.1
-	1	.9	1034
-	1	1.2	1042
-	1	3.7	1105
-	1	3.8	1108
-	1	3.9	1110
-	1	4.3	1120
-	1	9	1239
-	1	9.2	1244
-	1	9.7	1257
-	1	9.9	1262
-	1	11.4	1300
-	1	11.6	1305
-	1	11.8	1310
-	1	11.9	1313
-	1	12.2	1320
-	1	12.3	1323
-	1	12.6	1330
-	1	12.7	1333
-	1	13	1341
-	1	13.4	1351
-	1	13.8	1361
-	1	14.2	1371
-	1	14.6	1381
-	1	15	1391
-	1	15.4	1401
-	1	15.7	1409
-	1	16.2	1421
-	1	16.6	1432
-	1	17	1442
-	1	17.3	1449
-	1	17.4	1452
-	1	17.6	1457
-	1	17.7	1459
-	1	18	1467
-	1	18 1/2	1480
-	1	18.9	1493
-	1	19.3	1500
-	1	19.7	1510
-	1	20	1518
-	1	20.3	1525
-	1	20 1/2	1530
-	1	20.9	1540
-	1	21.7	1561
-	1	22.1	1571
-	1	22 1/2	1581
-	1	22.9	1591
-	1	23.3	1601
-	1	23.7	1611
-	1	24.1	1621
-	1	24 1/2	1631
-	1	24.9	1642
-	1	25	1644
-	1	25.3	1652
-	1	25.6	1659
-	1	25.7	1662
-	1	26	1669
-	1	26.4	1679

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 1193 CONTINUED

AC	RD	P	HA
6	2	11 1/4	2.659

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 21st day of June, 1979

M

NEW SOUTH WALES
(For Grant and title reference prior to first edition see Deposited Plan.)

TIFICATE OF TITLE
PERTY ACT, 1900, as amended.

Vol. 9163 Fol. 12

1st Edition issued 16-4-1962

CANCELLED

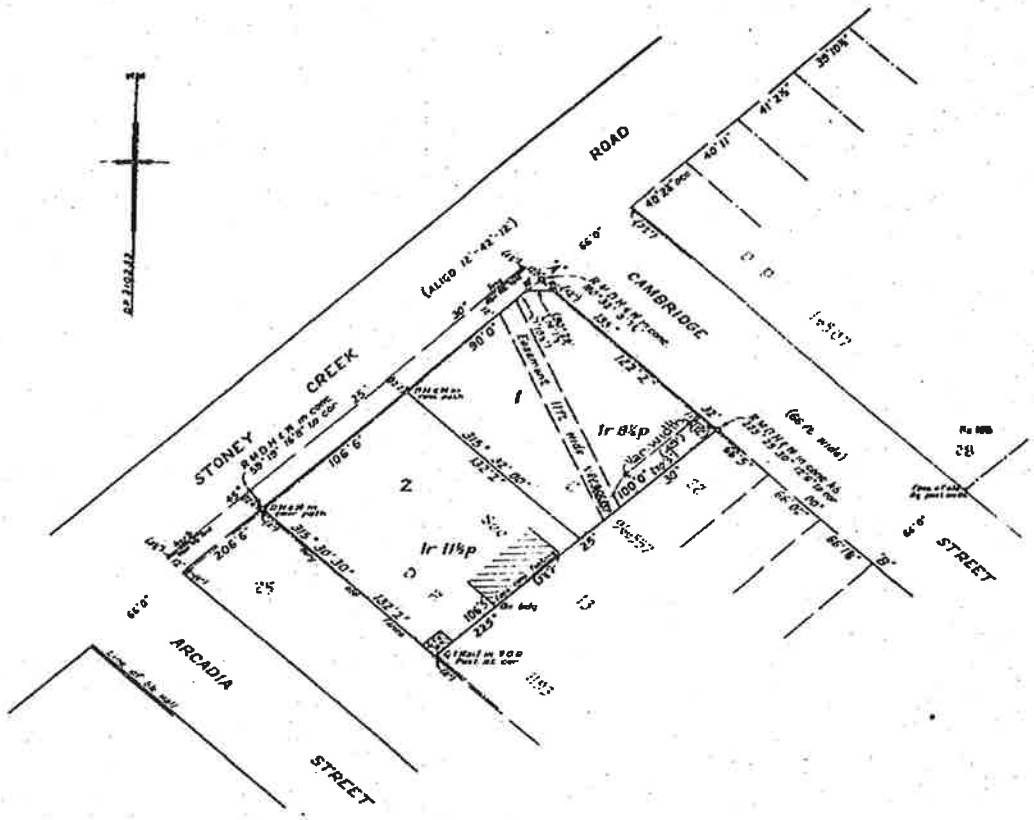
Fol. 12 Vol. 9163 (Page 1)

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.

Witness

Registrar-General. SEE AUTO. FOL.

PLAN SHOWING LOCATION OF LAND



S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 210233 at Beverly Hills in the Municipality of Hurstville Parish of St. George and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

~~WILLIAM HARE, of Penshurst, Telegraph Linesman and EDITH MARY MATILDA HARE, his wife, as Joint Tenants~~

Registrar General

SECOND SCHEDULE (Continued overleaf)

GRY

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General

EA

2. Easement created by Resumption No. C966557 affecting the part of the land above described shown as Easement 11 feet wide in the plan hereon.

Registrar General

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

25031 11.60 St 1609 V. C. N. Blight, Government Printer

Vol. 9163 Fol. 12

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
The Commissioner for Motor Transport	Transfer	J20243	9-3-1962	7-5-1962	

J20243
DP251888
J982243
DP251888
W864094
Resumed & Declared Public Road. Gaz 1611 84 Fol. 60

SECOND SCHEDULE (continued)

	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
EK	Transfer	J982243P	31-3-1965	Easement for Stormwater Drainage (as more fully set out in the said instrument) affecting the piece of land shown as var. width in the plan hereon	7-6-1965		CANCELLED
AA	W86409 Resumption - The part of the land within described being Lot 4 in DP251888 is now Public Road. Registered 29-1-1986						SEE AUTO FOLIO

(Page 2 of 2 pages)

FORM No. 184 NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/8/2018 1:03PM

FOLIO: 1/210233

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 9163 FOL 12

Recorded	Number	Type of Instrument	C.T. Issue
4/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
6/6/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
24/9/2012	AH257603	DEPARTMENTAL DEALING	
5/2/2015	DP1205598	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Beverley Hills PRINTED ON 15/8/2018

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/8/2018 1:02PM

FOLIO: 2/1205598

First Title(s): OLD SYSTEM
Prior Title(s): 1/210233

Recorded	Number	Type of Instrument	C.T. Issue
5/2/2015	DP1205598	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
7/2/2015	AJ145896	APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR	EDITION 1

*** END OF SEARCH ***

Beverley Hills PRINTED ON 15/8/2018

LAND REGISTRY SERVICES Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/1205598

SEARCH DATE	TIME	EDITION NO	DATE
3/9/2018	10:01 AM	1	7/2/2015

LAND

LOT 2 IN DEPOSITED PLAN 1205598
AT BEVERLY HILLS
LOCAL GOVERNMENT AREA GEORGES RIVER
PARISH OF ST GEORGE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1205598

FIRST SCHEDULE

GOVERNMENT PROPERTY NSW (RP AJ145896)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 C966557 EASEMENT AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN AS EASEMENT 11 FEET WIDE IN DP210233
3 J982243 EASEMENT FOR STORMWATER DRAINAGE AFFECTING THE PIECE OF LAND SHOWN AS VAR WIDTH IN DP210233

NOTATIONS

CERTIFICATE OF TITLE NOT ISSUED. LODGED DEALINGS MUST BE ACCOMPANIED BY PRIOR CERTIFICATE OF TITLE VOL.9163 FOL.12

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

[redacted]

M
NEW SOUTH WALES
(For Grant and title reference prior to first edition see Deposited Plan.)

TIFICATE OF TITLE
PERTY ACT, 1900, as amended.

09163013

Vol. 9163 Fol. 13

1st Edition issued 16-4-1962

(Page 1) Vol. 9163 Fol. 13

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.

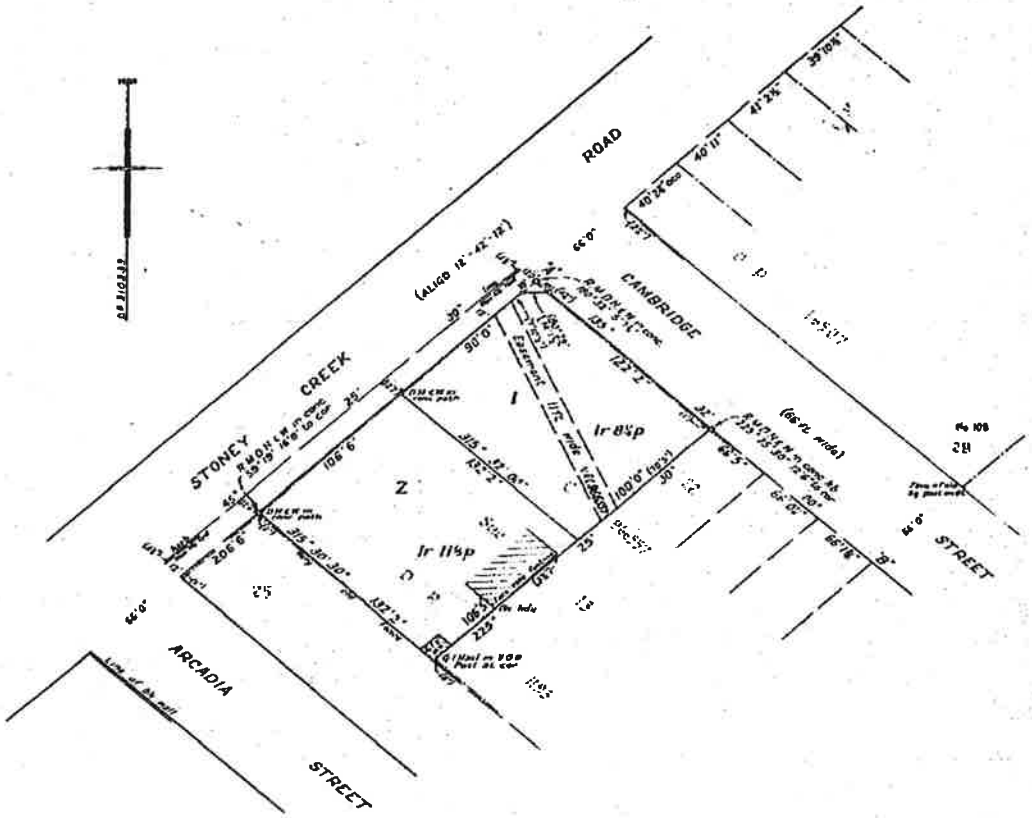
CANCELLED

Witness A Tenney

Registrar-General

FOLIO

PLAN SHOWING LOCATION OF LAND



S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 210233 at Beverly Hills in the Municipality of Hurstville Parish of St. George and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

~~WILLIAM HARE, of Penshurst, Telegraph Lineman and EDITH MARY MATILDA HARE, his wife, as Joint Tenants.~~

Registrar General

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General

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Vol. 9163 Fol. 13

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
~~William Hare of Beverly Hills, Widower Telegraph Linesman.~~	~~Notice of Death~~	~~P166756~~	~~10-2-1975~~	~~25-2-1975~~	
The Commissioner for Motor Transport	Transfer	Q258345	------	13-7-1977	

P166756, DP 25188, Lot 22 DP 251888, W86409

Resumed & Reclaimed Public Road Gaz. 15-1-86 Fol. 6

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
AA	W86409		Resumption - The part of the land within described being Lot 22 in DP251888 is now Public Road. Registered 29-1-1986			

CANCELLED

SEE AUTO FOLIO

(Page 2 of 2 pages)

FORM No. 184

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

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/8/2018 1:03PM

FOLIO: 2/210233

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 9163 FOL 13

Recorded	Number	Type of Instrument	C.T. Issue
4/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
6/6/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
24/9/2012	AH257681	DEPARTMENTAL DEALING	
5/2/2015	DP1205598	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Beverley Hills PRINTED ON 15/8/2018

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/8/2018 1:02PM

FOLIO: 3/1205598

First Title(s): OLD SYSTEM
Prior Title(s): 2/210233

Recorded	Number	Type of Instrument	C.T. Issue
5/2/2015	DP1205598	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
7/2/2015	AJ145896	APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR	EDITION 1

*** END OF SEARCH ***

Beverley Hills PRINTED ON 15/8/2018

LAND REGISTRY SERVICES **Title Search** InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 3/1205598

SEARCH DATE	TIME	EDITION NO	DATE
3/9/2018	10:01 AM	1	7/2/2015

LAND

LOT 3 IN DEPOSITED PLAN 1205598
AT BEVERLY HILLS
LOCAL GOVERNMENT AREA GEORGES RIVER
PARISH OF ST GEORGE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1205598

FIRST SCHEDULE

GOVERNMENT PROPERTY NSW (RP AJ145896)

SECOND SCHEDULE (1 NOTIFICATION)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

NOTATIONS

CERTIFICATE OF TITLE NOT ISSUED. LODGED DEALINGS MUST BE ACCOMPANIED BY PRIOR CERTIFICATE OF TITLE VOL.9163 FOL.13

UNREGISTERED DEALINGS: NIL

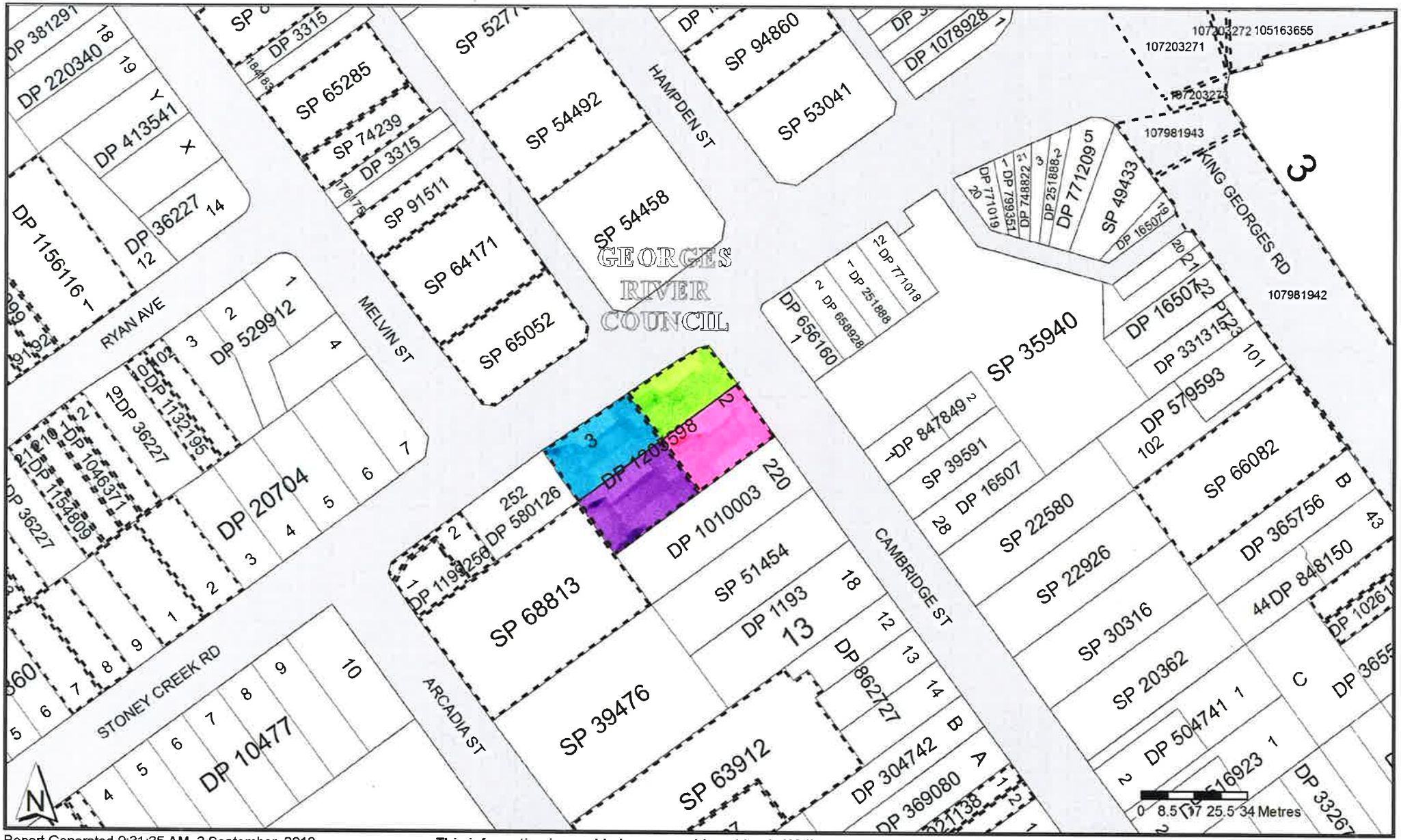
*** END OF SEARCH ***

LAND REGISTRY SERVICES

Cadastral Records Enquiry Report : Lot 2 DP 1205598

Ref : NOUSER

Locality : BEVERLY HILLS
Parish : ST GEORGE
LGA : GEORGES RIVER
County : CUMBERLAND



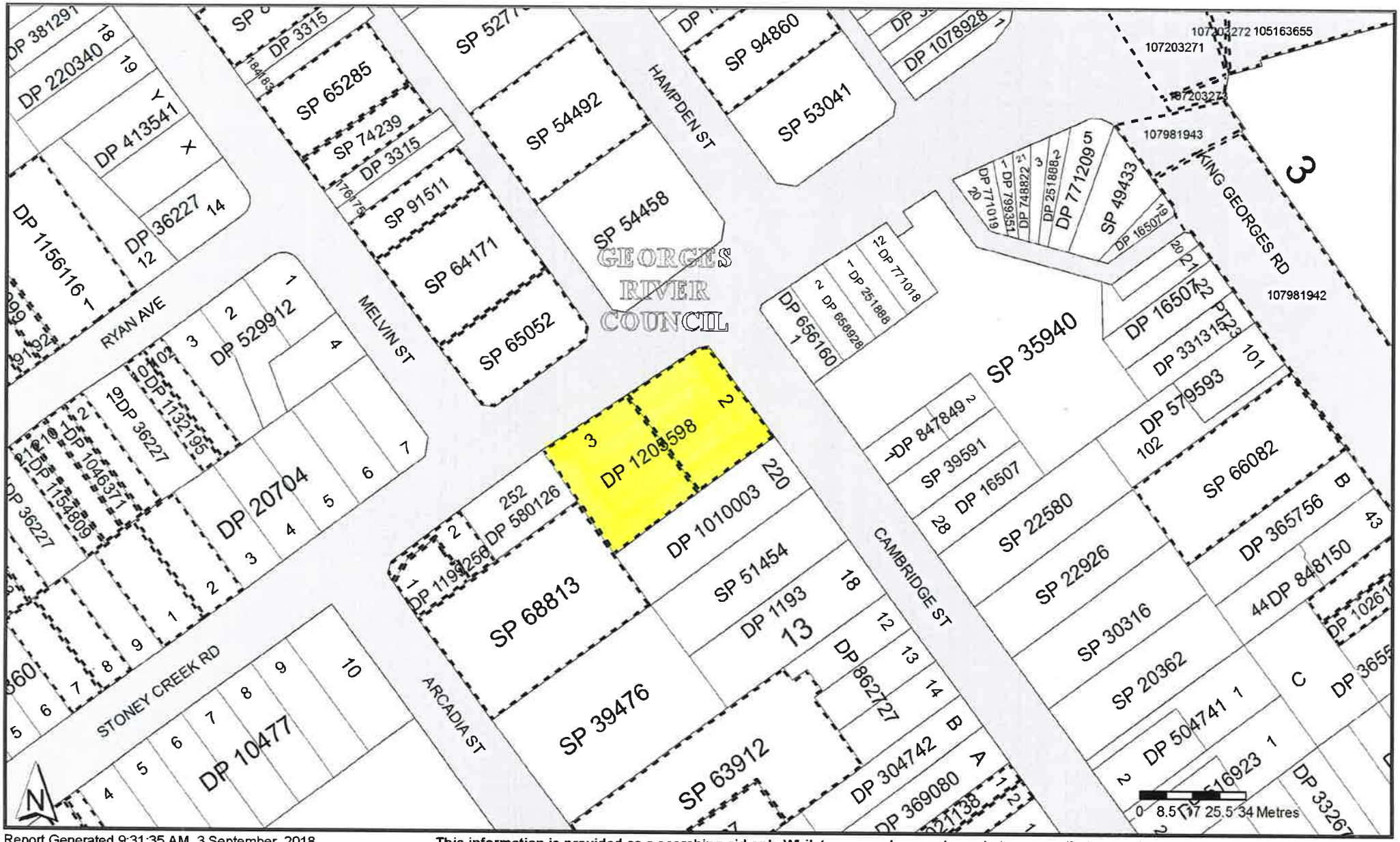
Report Generated 9:31:35 AM, 3 September, 2018

LAND REGISTRY SERVICES

Cadastral Records Enquiry Report : Lot 2 DP 1205598

Ref : NOUSER

Locality : BEVERLY HILLS
Parish : ST GEORGE
LGA : GEORGES RIVER
County : CUMBERLAND



Report Generated 9:31:35 AM, 3 September, 2018

e-departmental

DP 1205598

Registered : 05.02.2015

Title System : TORRENS

Purpose : DEPARTMENTAL

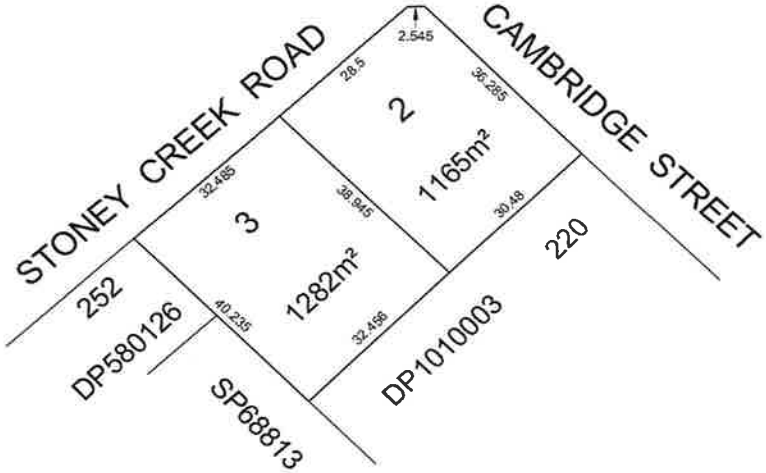
Ref. Map : U0037-61

Last Plan : DP210233

PLAN OF PART LOTS 1 AND 2 IN DP210233 AFTER ROAD ACTION VIDE W86409

Lengths are in metres. Reduction Ratio - NTS
LPI Ref. : SCP2

Sheet 1 of 1 sheets



L.G.A. : HURSTVILLE

LOCALITY: BEVERLY HILLS

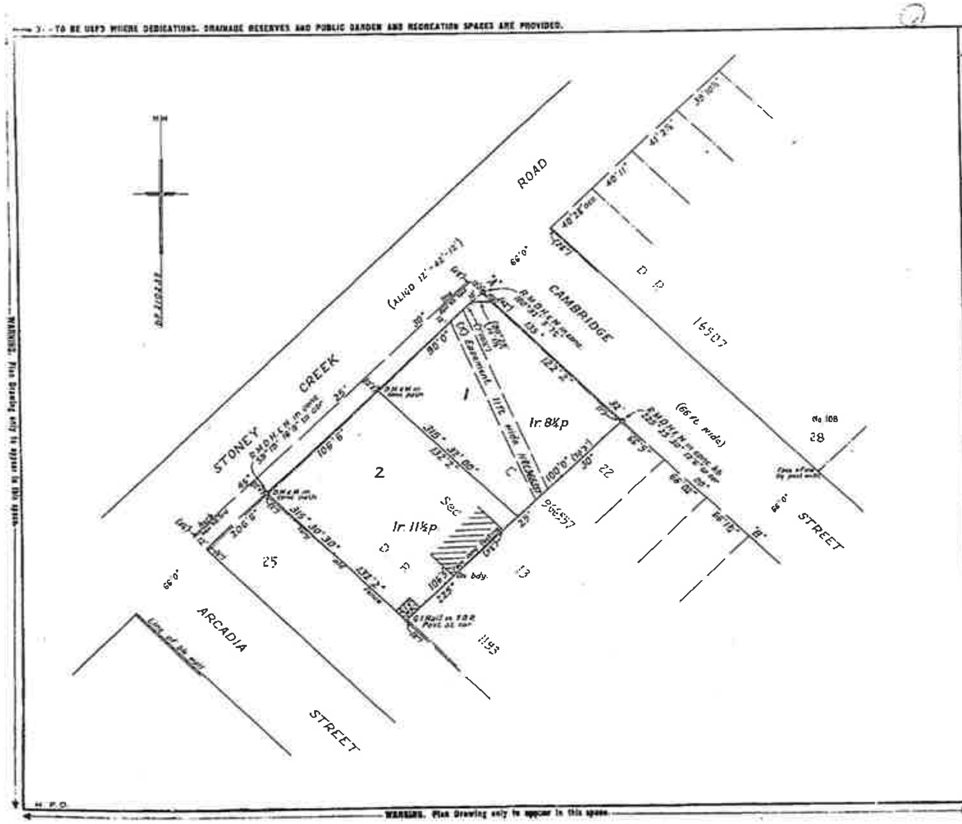
PARISH: ST GEORGE

COUNTY: CUMBERLAND

LOT	PRIOR IDENTITY
2	PART LOT 1 IN DP 210233
3	PART LOT 2 IN DP 210233

THIS PLAN HAS BEEN PREPARED TO PROVIDE AN UNIQUE IDENTITY FOR THE LAND IN THE CERTIFICATE OF TITLE REFERRED TO ABOVE.

IT IS NOT A CURRENT PLAN IN THE TERMS OF 7A OF THE CONVEYANCING ACT, 1919.



DP210233

Registered: 2.4.62
C.A.: 3039 of 26:9:61
Title System: Torrens
Purpose: Subdivision
Ref. Map: Hurstville Sh.3
Last Plan: C966557 D.P. 1193

OFFICE USE ONLY.

PLAN OF
Subdivision of Lots 24 & 26, Sec 13 D.P. 1193

Scale: 40 Feet to an Inch

Mun. City: Hurstville
Locality: Beverly Hills
Parish: St. George
County: Cumberland

I, Terrence Charles Meehan of P.W. Rygate & West, Sydney

Statements of Dedication, Easements.
(Signatures and Seals to appear in panel provided.)

It is intended to dedicate the splayed corner of Lot 1 to the public.

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION.

WARNING. Plan Drawing only to appear in this space.

SIGNATURES AND SEALS ONLY.

AMENDMENTS OR ADDITIONS NOTED ON PLAN IN REGISTRAR GENERAL'S OFFICE.

1

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

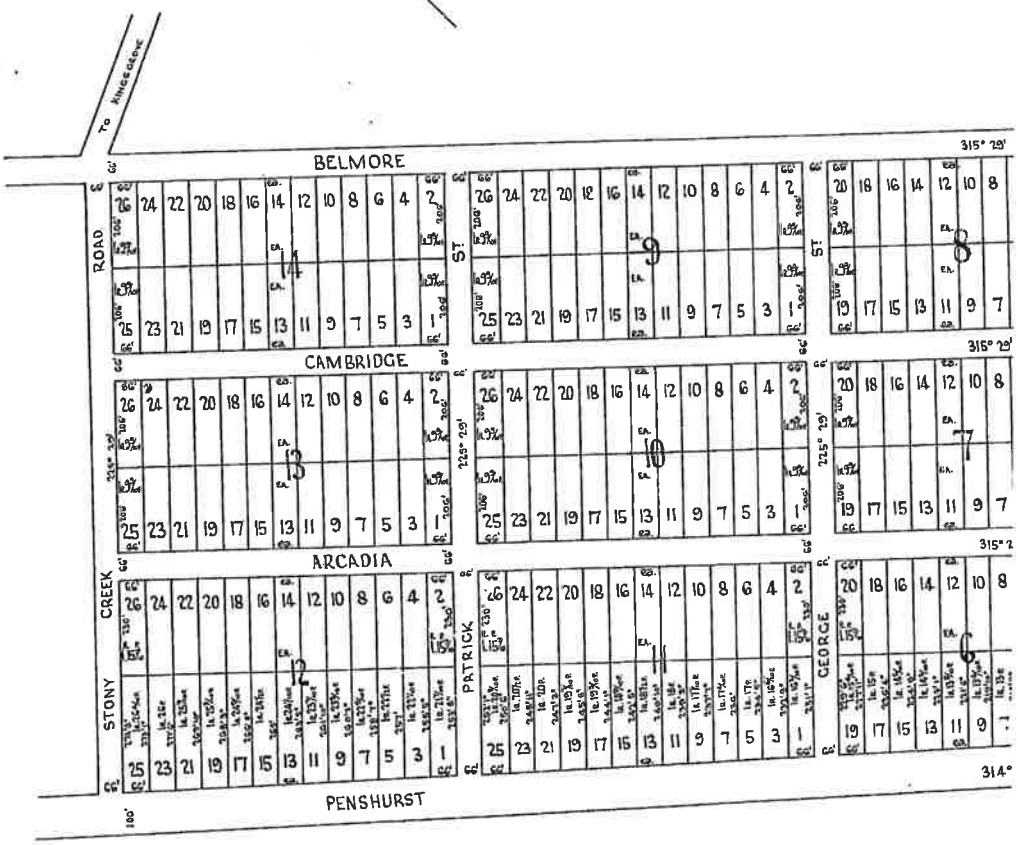
DP 210233

FEET	INCHES	METRES
-	1	0.025
-	2	0.051
-	2 1/4	0.057
-	3 1/4	0.083
-	3 1/2	0.089
-	4 1/4	0.108
-	4 1/2	0.114
-	5	0.127
-	8	0.203
-	10	0.254
-	11	0.279
1	2 3/8	0.365
5	7 1/2	1.715
5	7 3/4	1.721
7	10 1/2	2.400
10	-	3.048
11	-	3.353
12	-	3.658
12	2	3.708
12	2 1/2	3.721
12	4	3.759
12	6	3.810
14	1 1/2	4.305
16	8	5.080
39	10 1/2	12.154
40	2 1/4	12.249
40	11	12.471
41	2 1/2	12.560
42	-	12.802
66	-	20.117
66	0 1/4	20.123
66	1 3/4	20.161
66	5	20.244
70	5	21.463
90	-	27.432
100	-	30.480
106	5	32.436
106	6	32.461
122	2	37.236
132	2	40.234
206	6	62.941

AC	RD	P	SQ M
-	1	8 1/4	1322
-	1	11 1/2	1303

D.P. 1193

Pens...
Resub... of part of D...
—— HURS...
Parish of St George ...
Scale:- 200 ft...



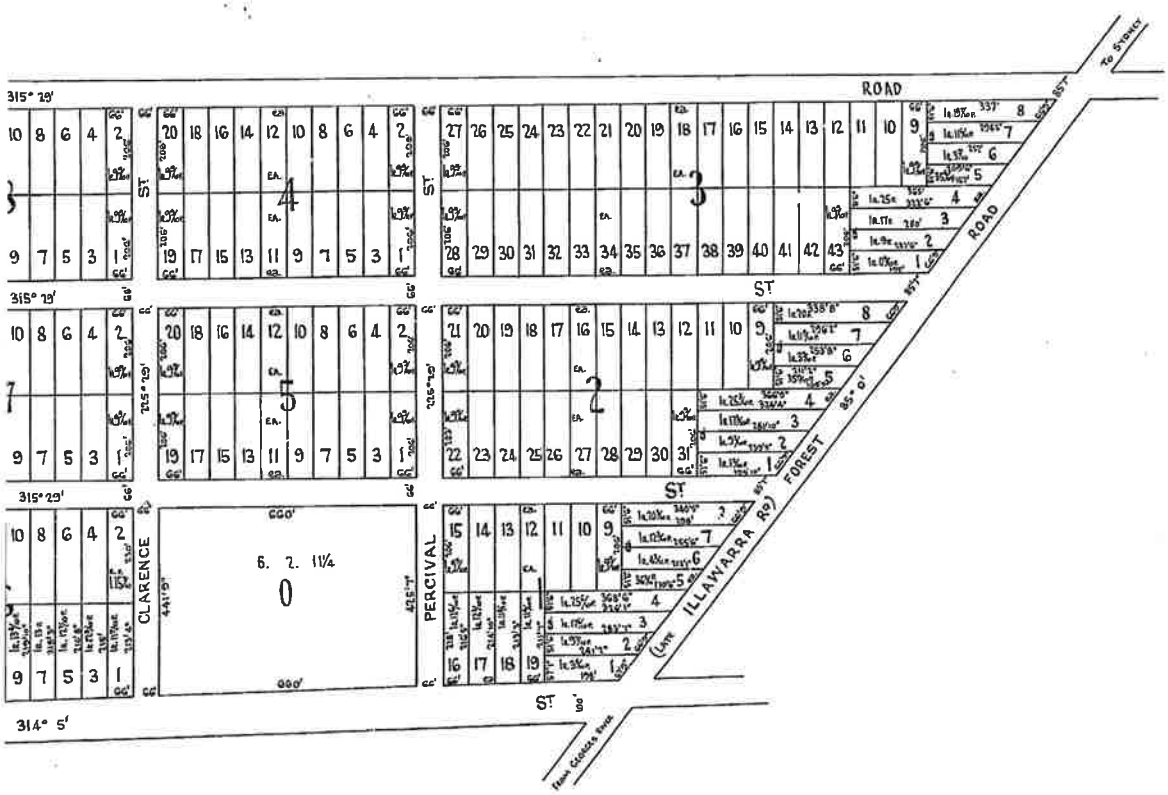
D.A.R. 19.C.'54

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 21st day of June, 1979

Req:R193692 /Doc:DP 0001193 P /Rev:22-Jul-1992 /Sts:OK.OK /Pgs:ALL /Prt:03-Sep-2018 10:01 /Seq:1 of 5
Ref:Beverley Hills /Src:M

Copy of D.P. 1193

shurst Park
t of Deposited Plan 53
HURSTVILLE
ɔrge – County of Cumberland
:- 200 ft. to one inch.



(Sgd.) C. B. DAWSON.
LICENSED SURVEYOR.

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 21st day of June, 1979

PENSHURST PAR

— PART OF CONNELL'S BL

PARISH OF ST. GEO

Scale 200 feet to 1 inch.

Part of 1605 ac Grant to Robert Townson 1st Ja

to Kingsgrove

Dep. Plan 2684 Dep. Plan 3111 Dep.

BELMORE STREET

CAMBRIDGE STREET

ARCADIA STREET

PENSHURST STREET

KINGSGROVE ROAD

PATRICK STREET

GEORGE STREET

CLARENCE STR

315·29

225·29

319·5

for subdivision here see Depd Plan 1910

D.P. 1193

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 21st day of June, 1979

DP 1193

RST PARK ESTATE

RTOFCONNELL'S BUSH —

ISH OF ST GEORGE

1193

Scale 200 feet to 1 inch.

1605 ac Grant to Robert Townson 1st Jany 1810

COPY MADE M.J.M. 24.11.95
EXAMINED [illegible] 10.5.95

3111 Dep. Plan 1769 Dep. Plan 1426

ROAD

STREET

CLARENCE STREET

PERCIVAL STREET

ILLAWARRA ROAD

New Forest Road

to Sydney

from Georges River

Dep^d Plan 1910

L.B. Dawson
Licensed Surveyor

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 21st day of June, 1979

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 1193X

FEET	INCHES	METRES
51	6	15.695
57	1	17.4
66	-	20.115
66	8	20.32
66	9	20.345
67	9	20.65
85	7	26.085
100	-	30.48
167	-	50.9
168	9	51.44
170	6	51.97
195	-	59.44
196	10	59.99
198	-	60.35
206	-	62.79
209	6	63.86
211	2	64.36
211	7	64.49
213	1	64.95
213	3	65
213	4	65.02
214	10	65.48
215	-	65.53
216	5	65.96
216	6	65.99
216	8	66.04
218	-	66.45
218	3	66.52
219	10	67.01
221	6	67.51
223	1	68
224	8	68.48
226	4	68.99
227	11	69.47
229	6	69.95
230	-	70.1
231	1	70.43
232	9	70.94
234	5	71.45
236	-	71.93
237	6	72.39
237	7	72.42
239	3	72.92
239	5	72.97
240	10	73.41
241	2	73.51
242	5	73.89
244	1	74.4
245	8	74.88
247	3	75.36
248	11	75.87
250	6	76.35
252	-	76.81
252	1	76.84
253	8	77.32
255	5	77.85
255	6	77.88
257	-	78.33
258	7	78.82
260	2	79.3
261	10	79.81
263	5	80.29
265	-	80.77
265	5	80.9
266	8	81.28
268	3	81.76
269	10	82.25
271	6	82.75
273	1	83.24
274	8	83.72
280	-	85.34
281	10	85.9
283	7	86.44
294	6	89.76
296	2	90.27
298	-	90.83
322	6	98.3

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 1193 CONTINUED

FEET	INCHES	METRES
324	4	98.86
326	1	99.39
337	-	102.72
338	8	103.23
340	5	103.76
365	-	111.25
366	9	111.79
368	6	112.32
425	7	129.72
441	9	134.65
660	-	201.17
725	7	221.16

AC	RD	P	SQ M
-	-	15.7	397.1
-	-	35.6	900.4
-	-	35.9	908
-	-	36.2	915.6
-	-	36.3	918.1
-	1	.9	1034
-	1	1.2	1042
-	1	3.7	1105
-	1	3.8	1108
-	1	3.9	1110
-	1	4.3	1120
-	1	9	1239
-	1	9.2	1244
-	1	9.7	1257
-	1	9.9	1262
-	1	11.4	1300
-	1	11.6	1305
-	1	11.8	1310
-	1	11.9	1313
-	1	12.2	1320
-	1	12.3	1323
-	1	12.6	1330
-	1	12.7	1333
-	1	13	1341
-	1	13.4	1351
-	1	13.8	1361
-	1	14.2	1371
-	1	14.6	1381
-	1	15	1391
-	1	15.4	1401
-	1	15.7	1409
-	1	16.2	1421
-	1	16.6	1432
-	1	17	1442
-	1	17.3	1449
-	1	17.4	1452
-	1	17.6	1457
-	1	17.7	1459
-	1	18	1467
-	1	18 1/2	1480
-	1	18.9	1493
-	1	19.3	1500
-	1	19.7	1510
-	1	20	1518
-	1	20.3	1525
-	1	20 1/2	1530
-	1	20.9	1540
-	1	21.7	1561
-	1	22.1	1571
-	1	22 1/2	1581
-	1	22.9	1591
-	1	23.3	1601
-	1	23.7	1611
-	1	24.1	1621
-	1	24 1/2	1631
-	1	24.9	1642
-	1	25	1644
-	1	25.3	1652
-	1	25.6	1659
-	1	25.7	1662
-	1	26	1669
-	1	26.4	1679

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 1193 CONTINUED

AC	RD	P	HA
6	2	11 1/4	2.659

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 21st day of June, 1979

M

NEW SOUTH WALES
(For Grant and title reference prior to first edition see Deposited Plan.)

TIFICATE OF TITLE
PERTY ACT, 1900, as amended.

Vol. 9163 Fol. 12

1st Edition issued 16-4-1962

CANCELLED

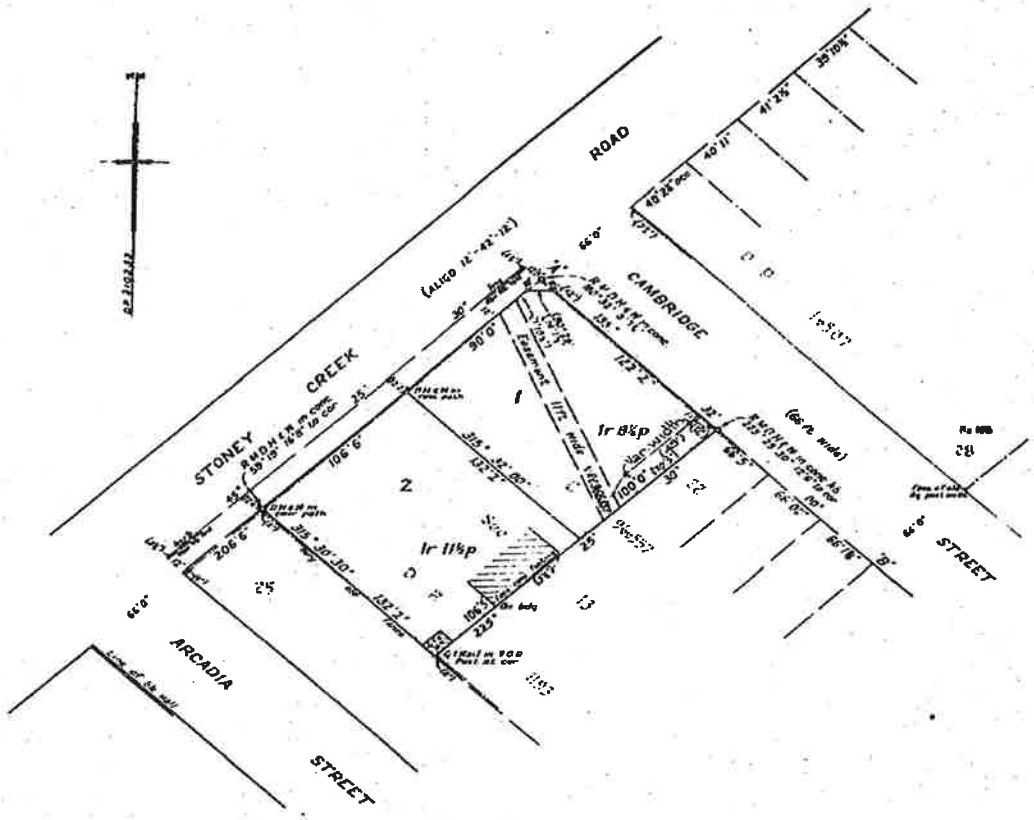
Fol. 12 Vol. 9163 (Page 1)

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.

Witness

Registrar-General. SEE AUTO. FOL.

PLAN SHOWING LOCATION OF LAND



S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 210233 at Beverly Hills in the Municipality of Hurstville Parish of St. George and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

~~WILLIAM HARE, of Penshurst, Telegraph Linesman and EDITH MARY MATILDA HARE, his wife, as Joint Tenants~~

Registrar General

SECOND SCHEDULE (Continued overleaf)

GRY

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General

EA

2. Easement created by Resumption No. C966557 affecting the part of the land above described shown as Easement 11 feet wide in the plan hereon.

Registrar General

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

25031 11.60 St 1609 V. C. N. Blight, Government Printer

Vol. 9163 Fol. 12

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
The Commissioner for Motor Transport	Transfer	J20243	9-3-1962	7-5-1962	

J20243
DP251888
J982243
DP251888
W864094
Resumed & Declared Public Road. Gaz 1611 84 Fol. 60

SECOND SCHEDULE (continued)

	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
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AA	W86409 Resumption - The part of the land within described being Lot 4 in DP251888 is now Public Road. Registered 29-1-1986						SEE AUTO FOLIO

(Page 2 of 2 pages)

FORM No. 184 NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/8/2018 1:03PM

FOLIO: 1/210233

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 9163 FOL 12

Recorded	Number	Type of Instrument	C.T. Issue
4/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
6/6/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
24/9/2012	AH257603	DEPARTMENTAL DEALING	
5/2/2015	DP1205598	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Beverley Hills PRINTED ON 15/8/2018

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/8/2018 1:02PM

FOLIO: 2/1205598

First Title(s): OLD SYSTEM
Prior Title(s): 1/210233

Recorded	Number	Type of Instrument	C.T. Issue
5/2/2015	DP1205598	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
7/2/2015	AJ145896	APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR	EDITION 1

*** END OF SEARCH ***

Beverley Hills PRINTED ON 15/8/2018

LAND REGISTRY SERVICES Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/1205598

SEARCH DATE	TIME	EDITION NO	DATE
3/9/2018	10:01 AM	1	7/2/2015

LAND

LOT 2 IN DEPOSITED PLAN 1205598
AT BEVERLY HILLS
LOCAL GOVERNMENT AREA GEORGES RIVER
PARISH OF ST GEORGE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1205598

FIRST SCHEDULE

GOVERNMENT PROPERTY NSW (RP AJ145896)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 C966557 EASEMENT AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN AS EASEMENT 11 FEET WIDE IN DP210233
3 J982243 EASEMENT FOR STORMWATER DRAINAGE AFFECTING THE PIECE OF LAND SHOWN AS VAR WIDTH IN DP210233

NOTATIONS

CERTIFICATE OF TITLE NOT ISSUED. LODGED DEALINGS MUST BE ACCOMPANIED BY PRIOR CERTIFICATE OF TITLE VOL.9163 FOL.12

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

[redacted]

M
NEW SOUTH WALES
(For Grant and title reference prior to first edition see Deposited Plan.)

TIFICATE OF TITLE
PERTY ACT, 1900, as amended.

09163013

Vol. 9163 Fol. 13

1st Edition issued 16-4-1962

(Page 1) Vol. 9163 Fol. 13

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.

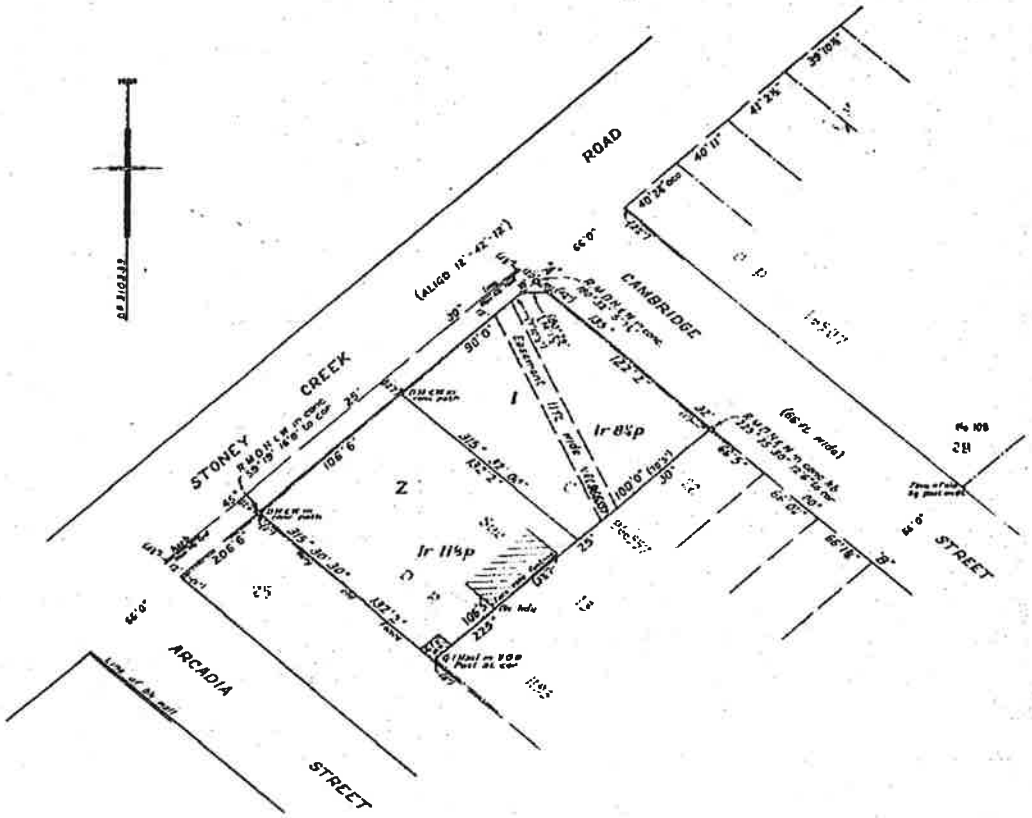
CANCELLED

Witness A Tenney

Registrar-General

FOLIO

PLAN SHOWING LOCATION OF LAND



S

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 210233 at Beverly Hills in the Municipality of Hurstville Parish of St. George and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

~~WILLIAM HARE, of Penshurst, Telegraph Lineman and EDITH MARY MATILDA HARE, his wife, as Joint Tenants.~~

Registrar General

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

Registrar General

25031 11.60 St 1609 V. C. N. Blight, Government Printer

Vol. 9163 Fol. 13

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
~~William Hare of Beverly Hills, Widower Telegraph Linesman.~~	~~Notice of Death~~	~~P166756~~	~~10-2-1975~~	~~25-2-1975~~	
The Commissioner for Motor Transport	Transfer	Q258345	------	13-7-1977	

P166756, DP 25188, Lot 22 DP 251888, W86409

Resumed & Reclaimed Public Road Gaz. 15-1-86 Fol. 6

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
AA	W86409		Resumption - The part of the land within described being Lot 22 in DP251888 is now Public Road. Registered 29-1-1986			

CANCELLED

SEE AUTO FOLIO

(Page 2 of 2 pages)

FORM No. 184

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

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/8/2018 1:03PM

FOLIO: 2/210233

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 9163 FOL 13

Recorded	Number	Type of Instrument	C.T. Issue
4/6/1987		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
6/6/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
24/9/2012	AH257681	DEPARTMENTAL DEALING	
5/2/2015	DP1205598	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Beverley Hills PRINTED ON 15/8/2018

LAND REGISTRY SERVICES

Historical Title

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
15/8/2018 1:02PM

FOLIO: 3/1205598

First Title(s): OLD SYSTEM
Prior Title(s): 2/210233

Recorded	Number	Type of Instrument	C.T. Issue
5/2/2015	DP1205598	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
7/2/2015	AJ145896	APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR	EDITION 1

*** END OF SEARCH ***

Beverley Hills PRINTED ON 15/8/2018

LAND REGISTRY SERVICES **Title Search** InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 3/1205598

SEARCH DATE	TIME	EDITION NO	DATE
3/9/2018	10:01 AM	1	7/2/2015

LAND

LOT 3 IN DEPOSITED PLAN 1205598
AT BEVERLY HILLS
LOCAL GOVERNMENT AREA GEORGES RIVER
PARISH OF ST GEORGE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1205598

FIRST SCHEDULE

GOVERNMENT PROPERTY NSW (RP AJ145896)

SECOND SCHEDULE (1 NOTIFICATION)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

NOTATIONS

CERTIFICATE OF TITLE NOT ISSUED. LODGED DEALINGS MUST BE ACCOMPANIED BY PRIOR CERTIFICATE OF TITLE VOL.9163 FOL.13

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

ACN 092 724 251
ABN 36 092 724 251

LEVEL 14, 135 KING STREET SYDNEY
GPO Box 4103 SYDNEY NSW 2001
Tel: 02 9099 7400
DX 967 SYDNEY
E-mail: propertysearching@infotrack.com.au

Offices Also in Melbourne, Brisbane, Gold Coast, Perth & Canberra

Your Ref: **Nicholas Grbich / Charles Zhao**

Our Ref: **James McDonnell**

Date 3 September 2018

Re: **143A Stoney Creek Road, Beverly Hills**

Service Charge	$120.00	
Disbursements	$100.00	
GST	$ 22.00	
Total	$242.00	**ID 03001861**

Enclosed

Environmental Search

EI Australia

Suite 6.01
55 Miller Street, Pyrmont
NSW 2009

Appendix J– SafeWork NSW Search

NSW GOVERNMENT | SafeWork NSW

Locked Bag 2906, Lisarow NSW 2252
Customer Experience 13 10 50
ABN 81 913 830 179 | www.safework.nsw.gov.au

Our Ref: D18/178918

28 August 2018

Charles Zhao
EI Australia
Suite 6.01, 55 Miller Street
Pyrmont NSW 2009

Dear Mr Zhao

RE SITE: 143A Stoney Creek Road Beverly Hills NSW 2209

I refer to your site search request received by SafeWork NSW on 17th August 2018 requesting information on Storage of Hazardous Chemicals for the above site.

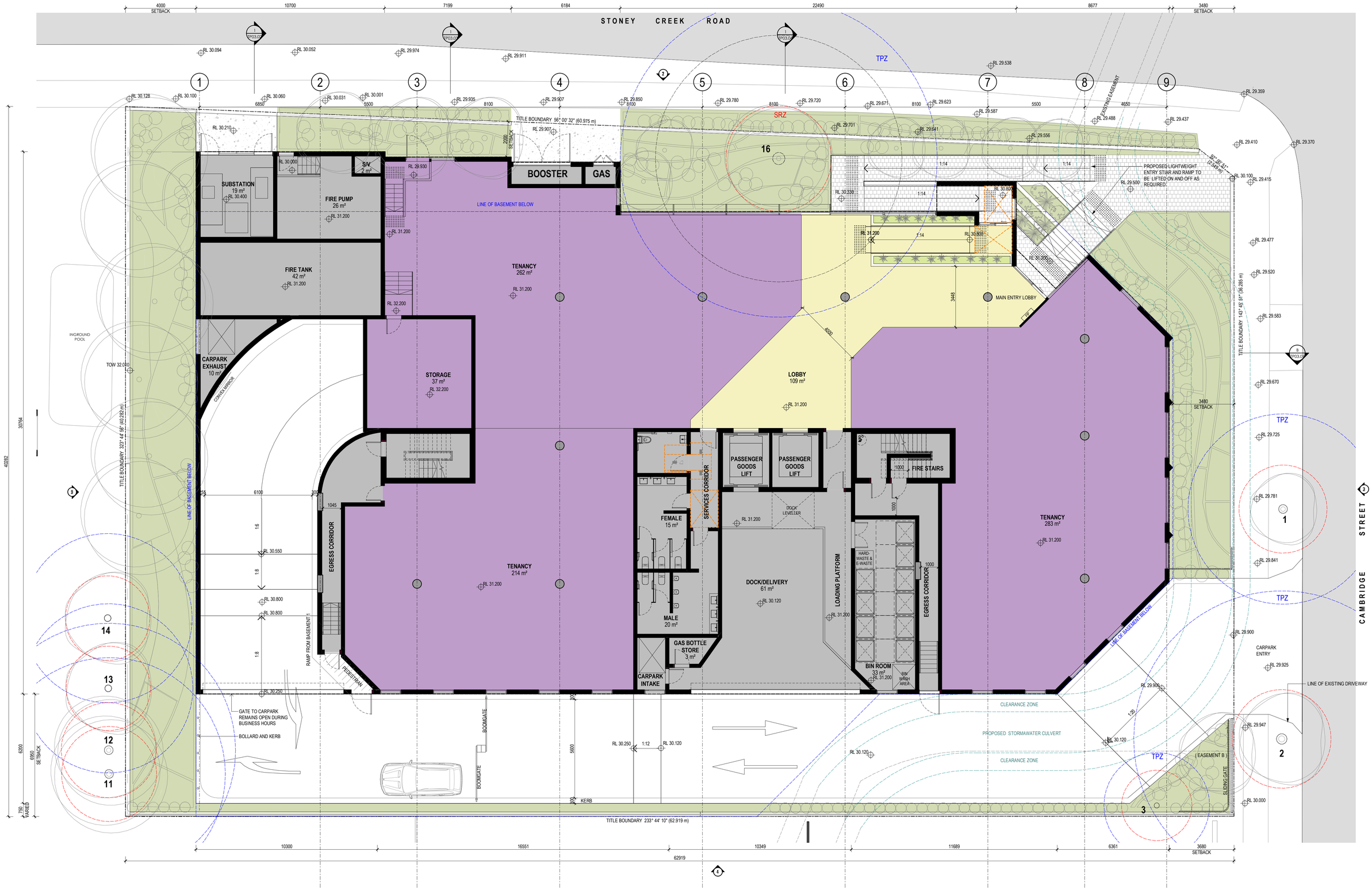
A search of the records held by SafeWork NSW has not located any records pertaining to the above-mentioned premises.

For further information or if you have any questions, please call us on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely

Customer Service Officer
Customer Experience - Operations
SafeWork NSW

Appendix K– Proposed Development Plans



DEVELOPMENT SUMMARY

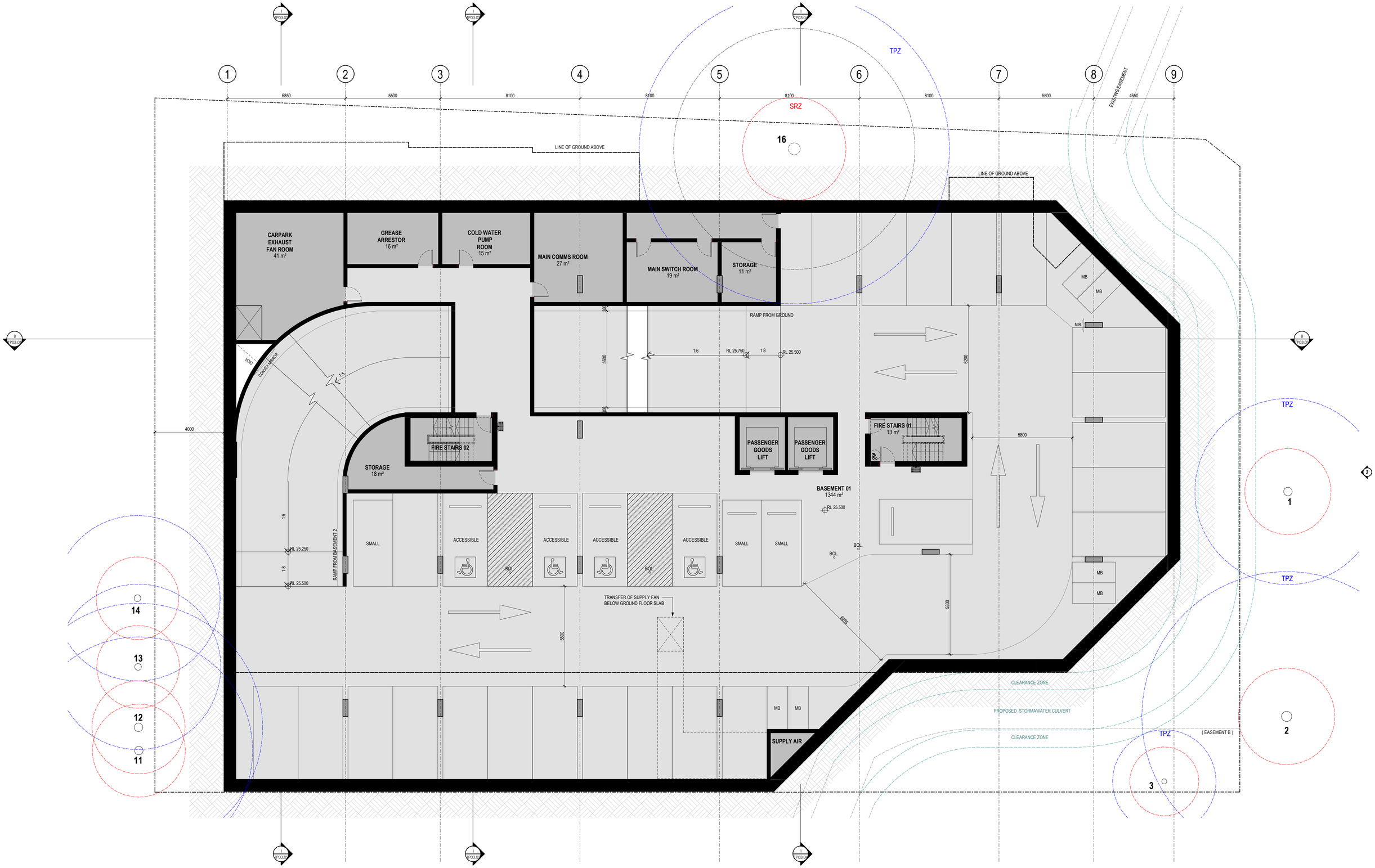
Revisions				
-	25.05.20	DEVELOPMENT APPLICATION	JLi	

28/05/2020 4:12:22 PM

Project: 143a Stoney Creek
Drawing: Ground Floor
Project No: 220015
Date: 25.05.20
Author: JLi
Scale: @ A1 1 : 100
Drawing No.: TP01.04 -

143a Stoney Creek, Beverly Hills
NSW 2222

rothelowman
Brisbane, Melbourne, Sydney
www.rothelowman.com.au



DEVELOPMENT SUMMARY

Revisions			
-	25.05.20	DEVELOPMENT APPLICATION	JLi

28/05/2020 4:12:12 PM

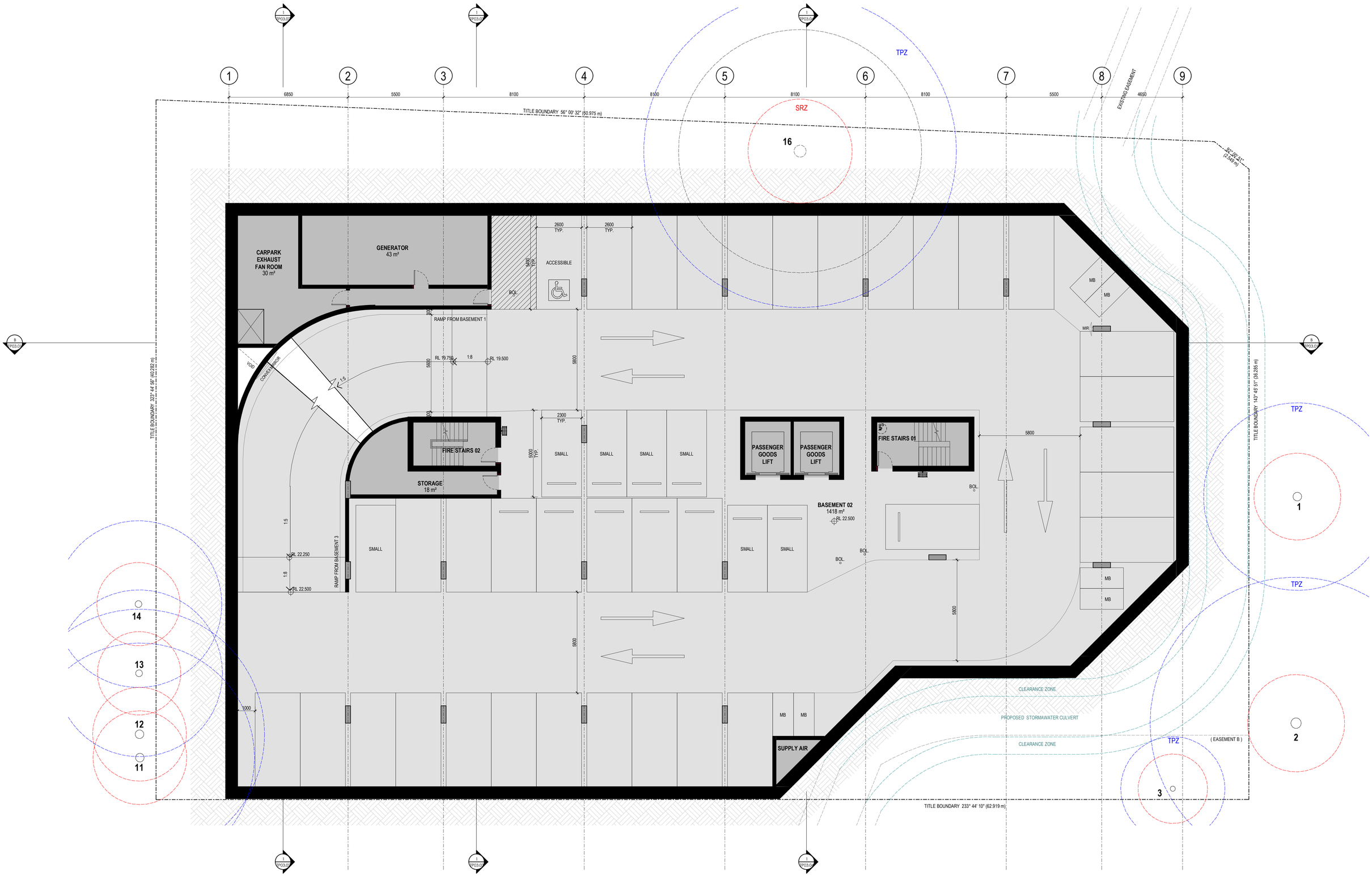
	CARPARKS		
LEVEL	VISITOR	TOTAL	MOTORBIKE
BASEMENT 01	30	30	6
BASEMENT 02	42	42	6
BASEMENT 03	42	42	6
	114	114	18

Project: 143a Stoney Creek
Drawing: Basement 1
Project No: 220015
Date: 25.05.20
Author: JLi
Scale: @ A1 1 : 100
Drawing No.: TP01.03 -

143a Stoney Creek, Beverly Hills
NSW 2222

rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au



DEVELOPMENT SUMMARY

Revisions			
-	25.05.20	DEVELOPMENT APPLICATION	JLi

28/05/2020 4:12:03 PM

	CARPARKS		
LEVEL	VISITOR	TOTAL	MOTORBIKE
BASEMENT 01	30	30	6
BASEMENT 02	42	42	6
BASEMENT 03	42	42	6
	114	114	18

Project: 143a Stoney Creek
Drawing: Basement 2
Project No: 220015
Date: 25.05.20
Author: JLi
Scale: @ A1 1 : 100
Drawing No.: TP01.02 -

143a Stoney Creek, Beverly Hills
NSW 2222

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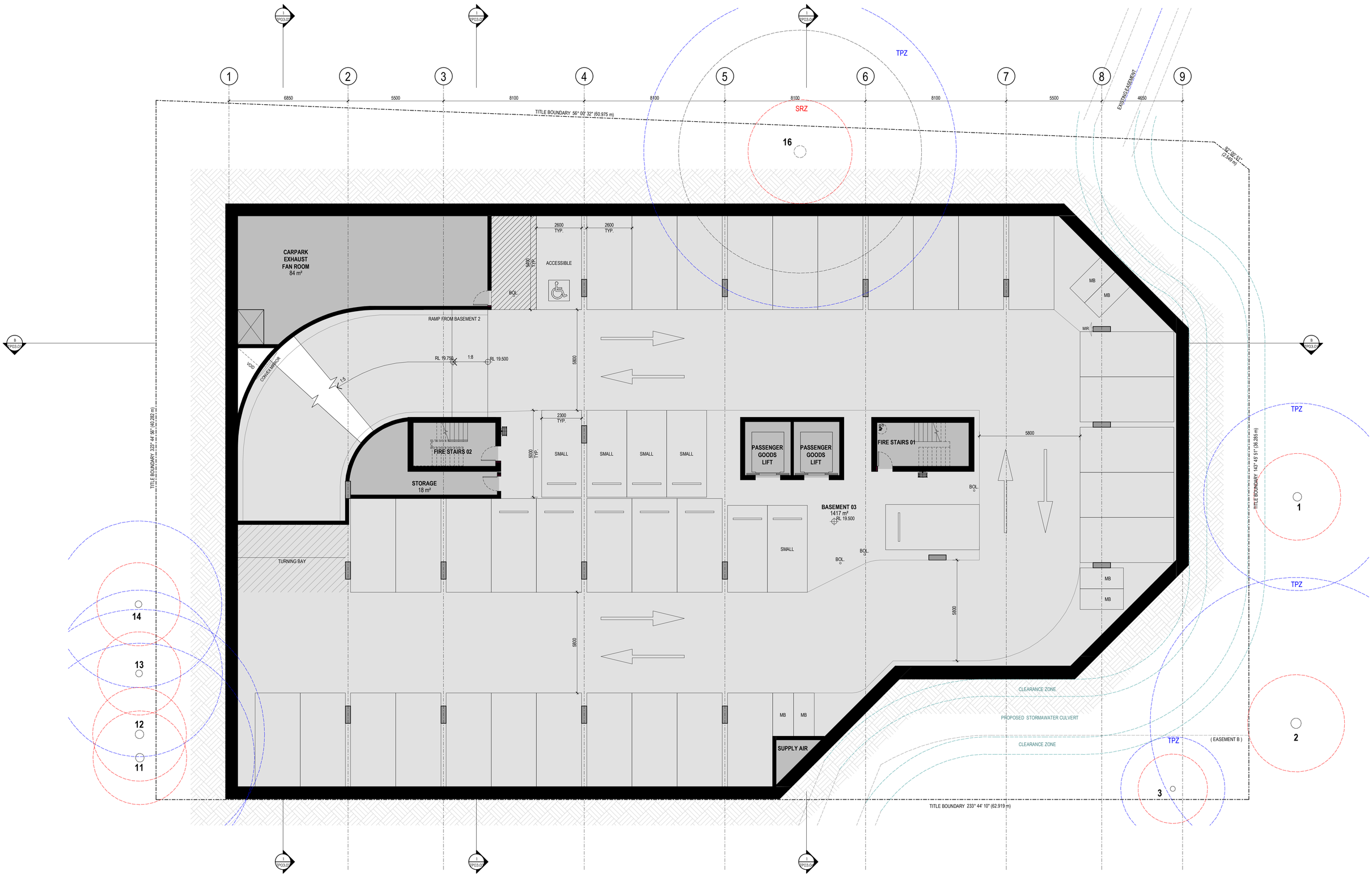
Brisbane, Melbourne, Sydney
www.rothelowman.com.au



DEVELOPMENT SUMMARY

Revisions			
-	25.05.20	DEVELOPMENT APPLICATION	JLi

28/05/2020 4:11:55 PM

	CARPARKS		
LEVEL	VISITOR	TOTAL	MOTORBIKE
BASEMENT 01	30	30	6
BASEMENT 02	42	42	6
BASEMENT 03	42	42	6
	114	114	18

Project: **143a Stoney Creek** Drawing: **Basement 3** Project No: **220015** Date: **25.05.20** Author: **JLi** Scale: @ A1 **1 : 100** Drawing No.: **TP01.01** -

143a Stoney Creek, Beverly Hills
NSW 2222

rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au