FOUNDATION EARTH SCIENCES

DETAILED SITE INVESTIGATION (DSI)

Property Address

29-31 and 41-45 Victoria Street, 27 Adelaide Street, 16 & 20 Brougham Street, East Gosford NSW

Prepared for

Bonython Elanora Pty Ltd

Date

May 2023

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ABBREVIATIONS

AIP	*Australian Institute of Petroleum Ltd*	**QA/QC**	*Quality Assurance, Quality Control*
ANZECC	*Australian and New Zealand Environment and Conservation Council*	**RAC**	*Remediation Acceptance Criteria*
AST	*Aboveground Storage Tank*	**RAP**	*Remediation Action Plan*
BGL	*Below Ground Level*	**RPD**	*Relative Percentage Difference*
BTEX	*Benzene, Toluene, Ethyl benzene and Xylene*	**SAC**	*Site Assessment Criteria*
COC	*Chain of Custody*	**SVC**	*Site Validation Criteria*
DA	*Development Approval*	**TCLP**	*Toxicity Characteristics Leaching Procedure*
DP	*Deposited Plan*	**TPH**	*Total Petroleum Hydrocarbons*
DQOs	*Data Quality Objectives*	**UCL**	*Upper Confidence Limit*
EPA	*Environment Protection Authority*	**UST**	*Underground Storage Tank*
ESA	*Environmental Site Assessment*	**VHC**	*Volatile Halogenated Compounds*
HIL	*Health-Based Soil Investigation Level*	**VOC**	*Volatile Organic Compounds*
LGA	*Local Government Area*	**DPI**	Department of Primary Industries
NEHF	*National Environmental Health Forum*		
NEPC	*National Environmental Protection Council*		
NHMRC	*National Health and Medical Research Council*		
OCP	*Organochlorine Pesticides*		
OPP	*Organophosphate Pesticides*		
PAH	*Polycyclic Aromatic Hydrocarbon*		
PCB	*Polychlorinated Biphenyl*		
PID	*Photo Ionisation Detector*		
PQL	*Practical Quantitation Limit*		

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EXECUTIVE SUMMARY

Foundation Earth Sciences was appointed by Bonython Elanora Pty Ltd to undertake a Detailed Site Investigation for the property situated 29-31 and 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham St, East Gosford NSW ("the site").

The site is currently occupied by several commercial entities. Lot 15 in DP1061216 is occupied by the Elanora Hotel, which is a licenced pub, restaurant, drive through bottle shop and large sealed driveway/carparking area. Lots 2, 3 & 4 in DP1016073 are occupied by a Motel, with several guest rooms and a grassed area. Lot 7 in DP658304 is occupied by a commercial dwelling, with several storefronts along Victoria Street and an external hand carwash to the rear of the Lot. Lot 7A in DP365458 is a sealed carparking area.

Soils sampled across the Site were assessed against the Site Acceptance Criteria (SAC) provided by the National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013) Table 1A – Commercial and Industrial D.

The soil data revealed the following:

- Asbestos was detected in the surface sample fragments denoted as F1 & F2. Further remediation works are required at this location.

The following lines of evidence support the low-risk groundwater conclusions in relation to site suitability:

- The elevated heavy metals of nickel and zinc are related to offsite regional contaminant concentrations and/or background levels & therefore of limited concern in relation to the GILs;

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- Surface soil materials did not indicate a significant presence of the elevated groundwater analytes and therefore unlikely to be a source of the metal exceedances.
- The site is not located in a catchment with contains the water quality objectives of drinking water (i.e. beneficial use) and therefore drinking water guidelines were not applied; and
- The groundwater analysis indicated PFAS and ammonia were below the adopted guidelines.

Hazardous ground gas spot monitoring was undertaken in April to May 2023 and the data collected from the seven rounds indicates the following;

- The maximum concentration of methane recorded was 2.3% v/v from BH1 /GW1 during round six on 10th May, 2023 & round seven on the 12th May, 2023;
- The maximum concentration of carbon dioxide was recorded at 11.3% v/v from BH1 /GW1 during round five on 3RD May, 2023;
- The minimum concentration of oxygen recorded was 0% from BH1 /GW1 during round six on 10th May, 2023 & round seven on the 12th May, 2023;
- Carbon monoxide was detected at maximum concentration of 431ppm in BH3/GW3 during round one on the 19th April 2023;
- The maximum PID reading was recorded at 10.8ppm in BH3/GW3 in round one dated 19th April 2023;
- The maximum (LEL%) reading was recorded at 28% during round seven in BH1 / GW1 dated 12th May 2023;

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Based on the historical review, environmental information, proposed development and laboratory results of the investigation, the site can be made ***suitable*** for the proposed development, subject to the following:

- It is considered that the site would be deemed suitable for the proposed development subject to the implementation of a Remediation Action Plan (RAP) to manage the abovementioned environmental concerns and data gaps.
- Completion of a longer-term ground gas monitoring program including continuous landfill gas monitoring and additional landfill gas monitoring wells to provide a more detailed assessment of the risk posed to the proposed development.
- Any soil requiring removal from the site, as part of future site works, should be classified in accordance with the "Waste Classification Guidelines, Part 1: Classifying Waste" NSW EPA (2014).

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1.0 INTRODUCTION

Foundation Earth Sciences was appointed by Bonython Elanora Pty Ltd to undertake a Detailed Site Investigation for the property situated at 29-31 and 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham St, East Gosford NSW ("the site").

Soils sampled across the Site were assessed against the Site Acceptance Criteria (SAC) provided by the National Environment Protection (Assessment of Site Contamination) Measure (NEPM 2013) Table 1A – HIL D – Commercial / Industrial.

2.0 OBJECTIVE

The format of this report closely follows that recommended in the NSW EPA "*Consultants Reporting on Contaminated Land* "dated 2020. The NSW Office of Environment and Heritage (OEH) indicates that an Environmental Investigation should provide comprehensive information on:

- Any issues raised in preliminary investigations;
- The type, extent and level of contamination;
- Contaminant dispersal in the air, surface water, soil and dust;
- The potential effects of contaminants on public health and the environment;
- Where applicable, off-site impacts on soil, sediment and biota; and
- The adequacy and completeness of all information available to be used in making decisions on remediation.

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The project objectives of this Detailed Site Investigation (DSI) are to satisfy the stated NSW EPA Detailed Site Investigation requirements in accordance with *NSW EPA, Consultants Reporting on Contaminated Land, 2020.* Specifically, this investigation will consider the potential for suspected historical activities to have caused contamination at the Site and determine land use suitability for the proposed land use.

The proposed investigation program is designed to assess the presence of any unacceptable on site or off-site risk to human health or the environment. The report will draw conclusions regarding the land use suitability of the Site for the proposed land use or provide recommendations to enable such conclusions and determine the need for a further assessment.

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3.0 SCOPE OF WORKS

The scope of works for this Detailed Site Investigation (DSI) included:

- Collecting site information, review of historical information and past site practices, (site surveys, site records on waste management practices, NSW Land Titles Office records of ownership, aerial photographs obtained from the NSW Department of Lands, WorkCover NSW records and site interviews);
- A site inspection to identify areas of environmental concern, on-site waste disposal practices and location of sewers, drains, holding tanks, Underground Storage Tanks, Aboveground Storage Tanks and pits, spills and ground discolouration etc.;
- A targeted soil boring/sampling investigative study – formulating and conducting a sampling plan and borehole investigation; the soil samples are taken and submitted for analysis on contaminants;
- Groundwater monitoring, well installation and sampling program based on site access;
- Hazardous Ground Gas Assessment including seven rounds of spot monitoring;
- Laboratory analysis and results from sample analysis – findings and comparison to regulatory guidelines;
- Quality Assurance/Quality Control (QA/QC) – all QA/QC procedures were undertaken in accordance with the Foundation Earth Sciences Quality Assurance/Quality Control manual;
- Interpretation of results and findings; and
- Recommendations and final conclusions drawn from interpretation of the results.

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4.0 SITE IDENTIFICATION AND SITE HISTORY REVIEW

4.1 Site identification

The site is identified as follows:

Table 1: Site Identification Review

Site Identifier	Site Details	
Site Location	29-31 and 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham St, East Gosford NSW	
Lot/DP	Lot 7 in DP658304 Lot 15 in DP1061216 Lot 2, 3 & 4 in DP1016073 Lot 7A in DP365458	
Site Coordinates #	N Corner: Latitude -33.438046, Longitude: 151.355208	
Parish	Gosford	
County	Northumberland	
Site Area	Approximately 7686m^2	
Local Government Area (LGA)	Central Coast	
Zoning##	B2 – Local Centre	
Surrounding Land Uses	*North*	Adelaide St, Commercial then Residential
	South	Residential then Victoria St
	East	Brougham St then Residential
	West	Adelaide St then Commercial and Residential

Notes:

Six Maps

refer to NSW Planning Portal

https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address

//www.planningportal.nsw.gov.au/find-a-property

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4.2 Underground Services

Dial Before You Dig' plans were requested and reviewed for the Site. Plans were provided by Ausgrid, Central Coast Council, Jemena Gas North, NBN Co Nsw/Act, Optus and/or Uecomm Nsw, Telstra NSW Central & Transport NSW. The plans provided by Ausgrid, Central Coast Council, Jemena Gas North, NBN Co and Telstra indicated the presence of major underground services or utility easements within the site.

The plans provided by Ausgrid showed cables running along the northern boundary of the site, as well as a substation on Adelaide Street. Cables were also seen to be entering the site from Victoria Street. Plans provided by the Central Coast Council demonstrated a sewage line running through the centre of the site, as well as a drainage pit along the southern boundary and a water line along the norther boundary. The Jemena Gas plans for the site demonstrated multiple points where gas lines entered the site along Victoria Street. NBN Co plans further indicated multiple points around the site boundary where mains entered the site, mainly from the surrounding streets. Plans provided by Telstra demonstrated along Victoria, Adelaide and Brougham Street, multiple points where mains entered the site.

It is noted that the associated underground services are considered as a potential preferential pathway

Refer to **Appendix A** – DBYD Plans.

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4.3 Review of aerial photographs

The following information regarding the aerial photographs has been obtained from the spatial collaboration portal (NSW Government) and the summary of this review is presented in the following table:

Table 2 Review of Aerial Photographs

Year	Site		Surrounding areas
**1954*	*Vacant/Residential*	*The image is unclear. The site appears largely cleared with some scattered trees with a stand of trees near the centre of the site. There appeared to be five residences, three facing Victoria Street and two facing Adelaide Street. There were also associated sheds and outbuildings.*	*The surrounding area is predominately developed as residential blocks.* *The land immediately south of the site appears cleared and unused with residences approximately 50m further south.* *A potential small orchard is located on the corner of Adelaide and Brougham Street.* *Commercial size buildings are opposite the site on Brougham Street.*
1965	Commercial	The site appeared to be occupied by a large commercial building (Elanora Hotel) at the corner of Victoria St and Adelaide St, as well as a motel on the corner of Adelaide St and Brougham St. The rest of the site appeared to be mainly undeveloped and covered in grass.	N: Adelaide St then a combination of Commercial and Residential properties, as well as some vacant park land to the north-east. Further north, there appeared to be a cleared area of land possibly used as a sporting field as well as vacant parcels of land. S: Vacant lands as well as Residential properties, then Victoria St. A service station also appeared to have been constructed.

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			E: Brougham St then Residential W: Victoria St and Adelaide St, then Residential properties. A service station, located at 44 Victoria Street, was also observed
1976	Commercial	The site appeared to have been developed, with a sealed driveway/carparking area being developed (running through the centre of the site), as well as two structures at the southern corner of the site. These are used as commercial spaces, and a hand car wash. An additional dwelling has been developed near the motel on the site.	N: More Commercial dwellings have been established to the north-west of the site. Some vacant parcels of land, to the northeast of the site, have been cleared and a landfill has been established. S: No major changes E: Some Residential properties have been redeveloped W: No major changes
1984	Commercial	No major changes	N: More Commercial buildings have been developed. The landfill has expanded further to the east as to the south-west of the original site. S: No major changes E: More Residential properties have been developed, as well as a Community Centre W: No major changes
1990	Commercial	Driveway and Carparking area appears to have been updated. Otherwise, no major changes	N: Some areas under construction. The landfill area appeared to still be present, but covered by grass. Some redevelopments have occurred, including the establishment of an asphalt carpark and sporting fields.

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			S: Some Residential properties appear to have been redeveloped E: Vacant lot has been developed into a Residential structure W: No major changes
**1994*	*Commercial*	*No major changes*	*No major changes, other than a Fire Station being constructed on Brougham Street (to the east of the site)*
**2003*	*Commercial*	*No major changes*	*The service station to the south-east of the site was replace with townhouses. The residence adjacent to the motel was removed*
2005	Commercial	Elanora Hotel appeared to have been redeveloped.	N: No major changes, other than the continued development of the landfill site into a recreational space/park land. S: No major changes E: Construction has been completed as Residential dwellings W: Commercial building has been constructed on the opposite corner to the Elanora Hotel
**2013*	*Commercial*	*No major changes*	*No major changes, similar to current configuration*
Current	As per inspection	The site is as inspected (section 7.1)	As per inspection. The service

**from JM Environments Preliminary Contamination Assessment, July 2020*

The aerial photographs indicate that the site has been used as a Commercial entity since the mid-1960s. At this point in time, the Elanora Hotel (pub) and associated motel were developed on the site and remained unchanged until 2005, when the pub was

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redeveloped. A sealed driveway and carparking area was developed in the mid-1970, and appeared to have been redeveloped in the 90s. Sometime prior to 1976, two other commercial dwellings were developed on the site, once used as a hand carwash. The site has remained relatively unchanged to the present time.

The surrounding land appeared to be a combination of Commercial, Residential and Vacant land in the 1960s. At this time, two service stations, one to the north-west and the other immediately south of the site, were developed. By the 1970s, more Commercial dwellings to the north and Residential properties to the east had been developed. This trend continued through the 1980s, with a Community Hall also been developed to the east of the site. From the late 1960s to the 1990s, the vacant land to the north of the site was used as a landfill which expanded significantly over this time to the east and south. By the early 1990s, a number of Residential properties in the surrounding areas appeared to be redeveloped, and a Fire Station was established to the east of the site. In the 2000s, the area previously used for landfill was redeveloped into parklands and recreational spaces, with sporting fields and sealed carparks being added. By 2003, the service station next to the site had been redeveloped into townhouses. By 2005, some properties to the south and east of the site continued to be developed, and a large Commercial building was developed to the west of the site. Sometime between 2013 and the present time, the petrol station to the north-west of the site was also decommissioned and removed. The surrounding areas have remained relatively unchanged to the present time.

Refer to **Appendix J**– Aerial Photographs.

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4.4 Title search

A review of historical documents held by Direct Info (approved LPI NSW Information broker) was undertaken to characterise the previous land use and occupiers of the site.

Table 3 Historical land title data

Lot 7 in DP658304, Lot 7A in DP365458, Lots 2 & 4 in DP1016073 and Lot 15 in DP1061216		
Year	Proprietor	Company/ Personal occupation
2019-Present	# Bonython Elanora Pty Ltd	
1992-2019	Cusick Hotels Pty Limited	
1982-1992	Armiwill Pty Limited	
1968-1982	William James Lloyd Hollier Audrey Grace Hollier	Real Estate Agent Married Woman
1949-1968	Kathleen Amelia Foott	Married Woman
02.1949-08.1949	Norman Francis Gallard	Electrician
1925-1949	Ella Hope Chapman	Married Woman

The land title information indicates that

- From 1925 to 1982, the site was owned by as number of private individuals
- From 1982 to the present time, the site has been owned by a number of commercial entities

Refer to **Appendix M** – Land Title Information.

4.5 Anecdotal Evidence

No anecdotal evidence was available at the time of the investigation.

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4.6 NSW EPA Records

The NSW EPA publishes records of contaminated sites under Section 58 of the Contaminated Land Management (CLM) Act 1997. The notices relate to investigation and/or remediation of site contamination considered to pose a significant risk of harm under the definition in the CLM Act.

A search of the database revealed that the subject site was not listed. Two locations were listed within the suburb of East Gosford, both located within 500m of the site. The details are listed below:

Site Name	Site Address	Approximate distance to site	Contamination Type	Notices
Hylton Moore Park	Althorp Street	140m NE	Former Landfill	3 Current and 2 former
Mobil Service Station	44 Victoria Street	100m NW	Service Station	7 formers

It should be noted that the NSW EPA record of Notices for Contaminated Land does not provide a record of all contaminated land in NSW.

Hylton Moore Park - Current

The NSW EPA has described the following land known as Hylton Moore Park, Althorp Street, East Gosford as significantly contaminated. The land includes the following lots:

- Lot 1-33 in DP197405, Lots 14-29 in DP24248, Lot 40 in DP519355, Lot 2 in DP247233, Lots 8A & 8B in DP413380, Lot 1 in DP232403 & Lot 1 in DP56797

The NSW EPA believes the land is contaminated with the following:

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- Ammonia
- PFAS
- Hazardous Ground Gas

The EPA has reason to believe harm has been, or may be, caused by the Substances, including:

- ammonia has been found in groundwater under the landfill and surface water drains at concentrations significantly above the Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) 95% species protection criteria;
- per-and-poly-fluoroalkyl substances (PFAS) are present in groundwater under the landfill and surface water drains at concentrations above the interim guidelines for aquatic species;
- landfill gases (methane and carbon dioxide) are being generated at the site and have been measured in subsurface monitoring wells near the skate park and on the landfill boundary at concentrations above the trigger levels for further investigation in the NSW EPA Environmental Guidelines: Solid Waste Landfills (2016); and
- leachate is present in an onsite drainage channel, increasing the risk of dermal contact with leachate and for leachate to reach Erina Creek.

Mobil Service Station – Former

The EPA has found that the site is contaminated with the following:

- Petroleum Hydrocarbons (TPH);
- Benzene, Toluene, Ethylbenzene and Xylene (BTEX); and
- Naphthalene.

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The EPA has considered that the contamination is significant enough to warrant regulation under the Act:

- Groundwater is contaminated with petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylene and naphthalene at concentrations exceeding beneficial uses, human health and environmentally based criteria.
- Contaminated groundwater is present at shallow depth near the site boundaries and may migrate off site towards adjoining residential areas and ultimately Brisbane Water.

On the 3rd February 2016, NSW EPA issued a notice to end significantly contaminated land declaration due to results of management actions.

Refer to **Appendix B** – NSW EPA Records.

4.7 NSW EPA POEO Register

A search of the POEO Register revealed the subject site, and other locations in the suburb of East Gosford, were not listed.

Refer to **Appendix B** – NSW EPA Records.

4.8 NSW EPA Notified Contaminated Sites

The NSW EPA publishes a list of notified contaminated sites each month. The list of notified sites contain land that has been notified to the EPA as being potentially contaminated.

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A search of the list was completed on the 31st March 2023. The subject site was not listed, however there were three (3) sites listed within the suburb of East Gosford. Each of these are located within 500m of the site, and the contamination type has been classified as either former Landfill or a Service Station. These could be causes for potential concern.

Site Name	Site Address	Approximate distance to site	Contamination Type	Management
Presbyterian Aged Care Facility	8-18 Enid Street	150m E	Former Landfill	Regulation under CLM not required
Hylton Moore Park	Althorp Street	140m NE	Former Landfill	Contamination currently regulated under CLM
Mobil Service Station	44 Victoria Street	100m NW	Service Station	Contamination formerly regulated under CLM

Refer to **Appendix B** – NSW EPA Records.

4.9 PFAS Preliminary Screen

NSW EPA requires that PFAS is considered when investigating land contamination. The preliminary screen is based on guidelines from the PFAS National Environmental Management Plan (NEMP 2020). From this screen a decision can be made as to whether PFAS sampling of soil and groundwater is required.

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Table 4: PFAS Preliminary Screen

Preliminary Screen	Risk of Occurrence
Any past or present site activity listed in NEMP 2020 as being activity associated with PFAS contamination?	L
Any past or present off-site activity up-gradient / adjacent to the site listed in NEMP 2020 as being activity associated with PFAS contamination? i.e. Fire Station	H
Did fire training involving the use of suppressants occur from 1970 to 2010?	M
Have fuel fires ever occurred on site from 1970 to 2010?	L
Have PFAS been used in manufacturing or stored on site?	L
Could PFAS have been imported to the site in fill materials from a site activity listed in NEMP 2020?	L
Could PFAS contaminated groundwater or run-off migrated to the site	Yes
Is the site or adjacent site listed in the NSW EPA PFAS Investigation Program	No
If the risk is medium or high in any of the above, does the inclusion of preliminary sampling / testing of PFAS in soil (including ASLP) and water need to be included?	Yes

- Note 1
  - Risk: L – low (all necessary documentation has been reviewed and there is no recorded instance or compelling rationale),
  - M – medium/moderate (all necessary documentation has been reviewed and there is potential evidence of a recorded instance with compelling rationale);
  - H – high (all necessary documentation has been reviewed and there is evidence of a recorded instance with compelling rationale); r
  - Risk, N/A – not applicable (or "-")].
  - No /Yes

- Note 2 Activities listed in Appendix B of the NEMP (2020).
- Note 3 Runoff from up-gradient PFAS use may impact surface water, soil, sediment and groundwater.
- Note 4 PFAS is used wide range of industrial processes and consumer products, including in the manufacture of non-stick cookware, specialised garments and textiles, ScotchguardTM 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.

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- Note 5 https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program

The potential for PFAS to be present on-site was medium-high and subsequently PFAS sampling / analysis of soil and water was warranted in this investigation.

4.10 SafeWork NSW

Foundation Earth Sciences has undertaken a SafeWork NSW search for this site. The email received from SafeWork indicated records were held pertaining to the site, however information was provided on the site located 44 Victoria Street, East Gosford which was a former service station as discussed in Section 4.6 and not located on the current site.

Refer to **Appendix M –** SafeWork NSW Search.

4.11 Previous Investigations

One (1) previous report have been provided to FES at the time of writing this report:

- JM Environments (2020), Preliminary Contamination Assessment for JME2040-1 – 29-31 and 41-45 Victoria Street, 27 Adelaide Street and, 16 and 20 Brougham Street, East Gosford, dated 10 July 2020

4.11.1 JM Environments Preliminary Contamination Assessment, 2020

This report presents the findings of a Preliminary Contamination Assessment of 29-31 and 41-45 Victoria Street, 27 Adelaide Street and, 16 and 20 Brougham Street, East Gosford

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NSW undertaken by JM Environments. The report was commissioned by Michal Leavy Consulting on behalf of Bonython Elanora Pty Ltd.

Bonython Elanora Pty Ltd are planning to redevelop the site for commercial and residential land use. The purpose of this assessment is to provide a support for the development application for the redevelopment.

Based on information gained from the desktop study and field observations, JME considers that the site is potentially contaminated by its previous and current land use. It is important to note that the risk to health and the local environment is considered low but further assessment is required to suitable quantify the risk.

At this stage, the contamination status of the site is not known. JME recommends the preparation and implementation of a Sampling and Analysis Quality Plans as part of a Detailed Stie Contamination Assessment to assess the extent of soil, soil vapour and groundwater contamination present on the site.

4.12 Site History Summary

In summary:

- The land titles indicated from 1925 to 1982, the site was owned by as number of private individuals. From 1982 to the present time, the site has been owned by several commercial entities.
- The aerial photographs indicate that the site has been used as a Commercial entity since the mid-1960s. At this point in time, the Elanora Hotel (pub) and associated motel were developed on the site and remained unchanged until 2005, when the pub was redeveloped. A sealed driveway and carparking area were developed in the mid-1970, and appeared to have been redeveloped in the 90s. Sometime prior

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to 1976, two other commercial dwellings were developed on the site, once used as a hand carwash. The site has remained relatively unchanged to the present time.

- The aerial photographs indicate the surrounding land appeared to be a combination of Commercial, Residential and Vacant land in the 1960s. At this time, two service stations, one to the north-west and the other immediately south of the site, were developed. By the 1970s, more Commercial dwellings to the north and Residential properties to the east had been developed. This trend continued through the 1980s, with a Community Hall also been developed to the east of the site. From the late 1960s to the 1990s, the vacant land to the north of the site was used as a landfill which expanded significantly over this time to the east and south. By the early 1990s, several Residential properties in the surrounding areas appeared to be redeveloped, and a Fire Station was established to the east of the site. In the 2000s, the area previously used for landfill was redeveloped into parklands and recreational spaces, with sporting fields and sealed carparks being added. By 2003, the service station next to the site had been redeveloped into townhouses. By 2005, some properties to the south and east of the site continued to be developed, and a large Commercial building was developed to the west of the site. Sometime between 2013 and the present time, the petrol station to the north-west of the site was also decommissioned and removed. The surrounding areas have remained relatively unchanged to the present time.
- The NSW EPA contaminated land database, List of Notified Sites and PFAS Investigation program indicate the subject site is not listed.
    - The NSW EPA list of notified sites indicates there are three (3) sites within the suburb of East Gosford. Each of these are located within 500m of the subject site, and the contamination type has been classified as either former Landfill or a Service Station. The Hylton Moore Park Site (former landfill) is currently regulated under the CLM Act.

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- The NSW EPA contaminated land database indicates a Mobil Service Station was former regulated under CLM.

- A search of the POEO Register revealed the subject site, and other locations in the suburb of East Gosford, were not listed.
- Foundation Earth Sciences has undertaken a SafeWork NSW search for this site. The email received from SafeWork indicated records were held pertaining to the site, however information was provided on the site located 44 Victoria Street, East Gosford which was a former service station as discussed in Section 4.6 and not located on the current site.

4.13 Integrity Assessment

The information found in the historical sources has been found to be in general concurrence. It is therefore considered that accuracy of this data is acceptable for this investigation.

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5.0 REVIEW OF ENVIRONMENTAL INFORMATION

Table 5: Site Condition and Surrounding Environment Review

Site Information	Descriptions
Sensitive Receivers	The nearest sensitive human receptors are the current and future users of the site, construction workers during the site redevelopment and the general public. The nearest downgradient watercourse is Erina Creek located approximate 380m to the east of the site.
Soil Landscape *Review of NSW Soil and Land Information website ESPADE.*	The Soil Landscape Map viewed on NSW ESPADE indicates that the site is Erina area. The soil is undulating to rolling rises and low hills on the Terrigal Formation. Local relief <60m; slope gradients <25%. Rounded narrow crests with moderately inclined slopes. Extensively cleared tall open-forest with open-heathland in exposed coastal areas.
Topography	Undulating to rolling rises and low hills with local relief <60m and slopes <25%. Ridges and crests are moderately broad (100-300m) and valleys moderately narrow (300-800m). Slopes are gently to moderately inclined. Rock outcrop is rarely present. This landscape also occurs as footsteps and gently inclined crests and ridges closely associated with the steep hills of the Watagan (wn) soil landscape. Based on the site inspection, it was determined that the site was slightly sloping to the North East at approximately 2-4°
Geological Profile	The 1:100,000 Geological Map of Gosford – Lake Macquarie, published by NSW Government in 1998, indicates that the site is underlain by Lithic-quartz to quartz sandstone, siltstone, minor sedimentary breccia, claystone and conglomerate
Presence of Acid Sulphate Soils *Review of NSW Department of Land & Water Conservation (DLWC) Acid Sulphate Soil Risk Maps (Edition Two, December 1997, Scale 1:250,000)*.	A review of the "Gosford" map indicated that the site is located in "No Known Occurrence" area of acid sulphate soil material within the soil profile. However, the site is located close to a "High Probability" area. The Central Coast Council Online Mapping website ("Environmental Layers", Online Mapping (nsw.gov.au)) indicated the site was located in an area with low to no known occurrences of Acid Sulphate Soils. However, the map demonstrated

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	the site is in close proximity to an area of "Disturbed Terrain" and "High probability of occurrence".					
Localised Hydrogeology Review of DPI (Office of Water) Database. **Appendix D** – DPI (Office of Water) Database Records.	**Number**	**Location from Site**	**Depth (m BGL)**	**SWL (m BGL)**	**Use**	**Water Bearing Zones**
	GW201096	161m NW	9.00	2.75	Monitoring Bore	Unknown
	GW201094	160m NW	7.50	1.80	Monitoring Bore	Unknown
	GW202606	170m NW	8.20	3.50	Monitoring Bore	-
	GW201095	170m NW	9.00	2.70	Monitoring Bore	Unknown
	GW202607	170m NW	8.20	3.50	Monitoring Bore	-
	GW202605	180m NW	7.00	3.50	Monitoring Bore	-
	GW201093	180m NW	6.00	2.40	Monitoring Bore	Unknown
	GW201099	180m NW	7.50	2.20	Monitoring Bore	Unknown
	GW201098	217m NW	6.00	2.30	Monitoring Bore	-
	GW201097	240m NW	6.00	2.20	Monitoring Bore	Unknown
	GW202600	249m NW	4.00	-	Monitoring Bore	Unknown
	GW202601	238m NW	4.00	-	Monitoring Bore	Unknown

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	GW202602	255m NW	4.00	-	Monitoring Bore	Unknown
	GW202603	295m NW	4.00	-	Monitoring Bore	Unknown
	GW202604	327m NW	4.00	-	Monitoring Bore	Unknown
Local Meteorology (Bureau of Meteorology BOM website) **Appendix E** – BOM Data.	The monthly rainfall of the local surrounding area is represented by the data collected from the BOM rainfall gauge located in Gosford (AWS NSW), which is located approximately 1.2km from Site. The records indicate that the monthly rainfall for the month of April (date of fieldwork) was 225.2mm in 2022.					
Nearest Active Service Station	1.9km to the east of the site					
Nearest Dry Cleaner Shop	220m to the north-west of the site					

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6.0 REVIEW OF CONSTRUCTION AND SERVICE INFORMATION

6.1 Current Uses

The site is currently occupied by several commercial entities. Lot 15 in DP1061216 is occupied by the Elanora Hotel, which is a licenced pub, restaurant, drive through bottle shop and large sealed driveway/carparking area. Lots 2, 3 & 4 in DP1016073 are occupied by a Motel, with several guest rooms and a grassed area. Lot 7 in DP658304 is occupied by a commercial dwelling, with several storefronts along Victoria Street and an external hand carwash to the rear of the Lot. Lot 7A in DP365458 is a sealed carparking area.

6.2 Proposed Development

It is proposed that the motel currently on the site will be cleared and expanded along Brougham Street. The proposed development plans indicate that the new Elanora Hotel will run through Lots 3 & 4 in DP 1016073, Lot 15 in DP1061216 and Lot 7A in DP365458. The Hotel will be 3 storeys high, with each level having 15 rooms. The carparking area will be extended between the hotel and the Elanora Hotel pub, and a carparking area will be located underneath and extended outdoor eating eat. The current hand carwash dwelling will be removed to allow for more carparking spaces, which will be landscaped. The commercial dwelling along Victoria Street in Lot 7 in DP658304 will be refurbished into a bottle shop.

Refer to **Appendix F** - Proposed Development Plans.

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7.0 SITE VISIT

7.1 General

The site was visited on the 13th April 2023 by Foundation Earth Sciences Environmental Scientists to inspect the site for any potential sources of contamination.

The following items were considered as part of the site visit:

- Description of the building structures;
- Site surroundings;
- Present and past industrial processes and operations at the site;
- Surface water, groundwater, stormwater and sewer;
- Present and past storage of chemicals and wastes associated with site use and their on-site location;
- Waste management practices and management of hazardous materials;
- Presence of Underground Storage Tanks or Above Ground Storage Tanks;
- Odour; and
- Occupational health and safety.

7.2 Site observations

At the time of the site visit the following observations were made as per the following table:

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Table 6: Site Inspection Review

Factors Considered	Description of Sites
Buildings & Structures on Site	The site is currently occupied by several commercial entities. Lot 15 in DP1061216 is occupied by the Elanora Hotel, which is a licenced pub, restaurant, drive through bottle shop and large sealed driveway/carparking area. Lots 2, 3 & 4 in DP1016073 are occupied by a Motel, with several guest rooms and a grassed area. Lot 7 in DP658304 is occupied by a commercial dwelling, with several storefronts along Victoria Street and an external hand carwash to the rear of the Lot. Lot 7A in DP365458 is a sealed carparking area.
Percentage Hard-standing surface	Approximately 75 %
Concrete Condition	Average
Chemical Storage	Chemical storage was not noted at the time of the site inspection in accessible areas. However no access was obtained within the carwash area.
Above and Underground Storage Tanks	No USTs or ASTs were noted at the time of the site inspection in accessible areas.
Trade Waste Pits	No trade waste pits were identified at the site.
Nearby Electrical Transformers	No electricity sub-station was observed within the property.
Asbestos	Fibro cement fragments was identified on the site surfaces. Fibro was observed in accessible areas during the inspection.
Site Vegetation	Appeared healthy.
Soil Staining and Odours	No odours were identified within the property. No significant soil staining was noted during the inspection.
Stormwater and Sewer	Stormwater was connected to the local utilities.

Refer to **Figure 2** - Site Features, Borehole Locations and Exceedance Plan and **Appendix C** – Site Photographs.

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8.0 PRELIMINARY CONCEPTUAL SITE MODEL (CSM)

8.1 Preliminary Conceptual Site Model (CSM)

Based on the above information, site history and site walkover, the areas of potential concern and associated contaminants for the site CSM were identified. These are summarised in the following table.

Table 7: Areas and Contaminants of Concern

Known and potential contamination source	Associated Contaminants
Historical Site Uses & Current Site (Hotel, Carwash, Car-Park)	Heavy Metals, TRH, BTEX, PAH, OCP, PCB, Asbestos, VOC
Surrounding land Uses (Commercial & Industrial, service station, former landfill, fire stations)	Heavy Metals, TRH, BTEX, PAH, OCP, PCB, Asbestos, PFAS, Ammonia, VOC, Bulk Ground Gas
Imported Fill	Heavy Metals, TRH, BTEX, PAH, OCP, PCB and Asbestos
Car parking Areas	TRH, BTEX, PAH
Building degradation/ Demolition	Heavy Metals, Lead and Asbestos

Table 8: Potentially Contaminated Media

Known and potential contamination source	Associated Contaminants
Fill Material	There is the potential for contamination to be present in the upper fill material.

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Groundwater	There is the potential for the leaching of contaminants into groundwater onsite and also migration of the contaminants.
Soil Vapour / Bulk Ground Gas	Given the site history and surrounding land uses soil vapour / ground gas is considered a potential contaminated media.

8.2 Chemicals of Concern

Soils

Asbestos fragments were detected on the surface in two locations denoted as F1 & F2.

Hazardous Ground Gas / Landfill Gas

- The maximum concentration of methane recorded was 2.3% v/v from BH1 /GW1 during round six on 10th May, 2023;
- The maximum concentration of carbon dioxide was recorded at 11.3% v/v from BH1 /GW1 during round five on 3RD May, 2023;
- Carbon monoxide was detected at maximum concentration of 431ppm in BH3/GW3 during round one on the 19th April 2023;
- The maximum PID reading was recorded at 10.8ppm in BH3/GW3 in round one dated 19th April 2023;
- The maximum (LEL%) reading was recorded at 24% during round six in BH1 /GW1 dated 10th May 2023;

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8.3 Sources

Soil

The most likely source of the contaminants of concern is the quality of the soil materials impacted from historical and current industrial land use (resource recovery) across the site.

Hazardous Ground Gas

Former Landfill at Hylton Moore Park – Althorp Street East Gosford

The NSW EPA has described the following land known as Hylton Moore Park, Althorp Street, East Gosford as significantly contaminated. The land includes the following lots:

- Lot 1-33 in DP197405, Lots 14-29 in DP24248, Lot 40 in DP519355, Lot 2 in DP247233, Lots 8A & 8B in DP413380, Lot 1 in DP232403 & Lot 1 in DP56797

The NSW EPA believes the land is contaminated with the following:

- Ammonia
- PFAS
- Hazardous Ground Gas

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8.4 Potential for Migration

Contaminants generally migrate from site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The potential contaminants identified as part of the site history review & site inspection are present in solid (e.g. impacted fill, asbestos) liquid (e.g. dissolved in water) & gaseous forms.

Aerial photography has indicated that there were unsealed ground surfaces and therefore, there is limited potential for migration of contaminants via wind-blown dust.

Rainfall infiltration at the site is expected to occur in unsealed areas. There is therefore the potential that soil contamination could result in impacts to groundwater.

8.5 Receptors

Potential receptors of environmental impact present within the site which will be required to be addressed with respect to the suitability of the site for the proposed use include:

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- Excavation/construction/maintenance workers conducting activities at the site, who may potentially be exposed to COPCs through direct contact with impacted soils, Vapour Intrusion and/or groundwater present within excavations and/or inhalation of dusts/fibres associated with impacted soils;
- Future occupants/users of the site may potentially be exposed to COPCs through direct contact with impacted soils and/or ingestion of impacted soils and/or inhalation of dusts/fibres associated with impacted soils and/or exposure to vapour; and/or
- Offsite sensitive receptors of groundwater; and/or
- Flora species to be established on vegetated areas of the site.
- Erina Creek

Human

The site groundwater is not currently used for or planned to be used for drinking water as town water is provided by Central Coast Council.

Ecological

The ecological receptors would be surface water and benthic organisms in Erina Creek.

8.6 Potential Exposure Pathways

Potential exposure pathways include:

- Dermal;
- Ingestion; and
- Inhalation.

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Due to the presence of exposed potentially impacted soil/fill on ground surfaces, dermal and inhalation exposure is considered a potential exposure pathway.

The potential for ingestion of soil is considered as a potential exposure pathway. Although groundwater is not used at the site, there is the potential, for ingestion of contaminants via groundwater removed from monitoring wells.

8.7 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPCs as either liquids or gases.

Man-made preferential pathways are present throughout the site, generally associated with fill materials and services present beneath existing ground surface. Fill materials and service lines are anticipated to have a higher permeability than the underlying natural soil and/or bedrock.

The plans provided by Ausgrid showed cables running along the northern boundary of the site, as well as a substation on Adelaide Street. Cables were also seen to be entering the site from Victoria Street. Plans provided by the Central Coast Council demonstrated a sewage line running through the centre of the site, as well as a drainage pit along the southern boundary and a water line along the norther boundary. The Jemena Gas plans for the site demonstrated multiple points where gas lines entered the site along Victoria Street. NBN Co plans further indicated multiple points around the site boundary where mains entered the site, mainly from the surrounding streets. Plans provided by Telstra demonstrated along Victoria, Adelaide and Brougham Street, multiple points where mains entered the site.

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8.8 Frequency of Exposure

As the potential for ingestion of soil is considered a potential exposure pathway during site development works as construction workers would be exposed to soil. The frequency of exposure will be occurring from removal of the existing hard standing surfaces until construction of the new surfaces across the proposed development area.

8.9 Offsite Contamination

Impacted soil contamination could migrate off site during site development works with surface water run-off.

Former service stations are located north and south of the site and a fire station is also located on the southern boundary of the site. These are known offsite contamination risks. However, soil and groundwater sampling completed during the DSI has indicated limited concerns.

A former landfill site is located approximately 140m north east of the site. This site is currently regulated by NSW EPA.

8.10 Data Gaps

The following data gaps remain:

- Waste classification to facilitate disposal (noting TCLP required for PFAS).
- Long term hazardous ground gas assessment – based on results obtained during the seven rounds of spot monitoring.

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9.0 REVIEW OF DATA QUALITY OBJECTIVES

The DQOs were also prepared using Appendix IV of the Site Auditor Guidelines. These require 7 steps. The steps being

a. State the problem
b. Identify the decisions
c. Identify inputs to decision
d. Define the study boundaries
e. Develop a decision rule
f. Specify limits on decision errors
g. Optimise the design for obtaining data

9.1 State the Problem

The site requires to be confirmed suitable for the proposed development. The site is proposed to be redeveloped and has had some areas of potential concern, those being historical & current land uses, surrounding land use (fire station, service stations and former landfill), possible areas of imported fill of unknown origin, degradation of the building materials and leakages from vehicles on site.

Technically defensible evidence needs to be provided so that the identified Site does not present an unacceptable risk to human health or the environment and is suitable for the intended land use.

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9.2 Identify the Decisions

The decisions to be made on the contamination and the new environmental data required includes considering relevant site contamination criteria for each medium (fill, soil and sediment). A proposed use of the 95% UCL on the mean concentrations for all soil chemicals of potential concern must be less than the site criteria identified for the relevant land use suitability.

The decisions made in completing this assessment are as follows:

- Does the site or is the site likely to present a risk of harm to humans or the environment
- Is the site currently suitable for the proposed land use including commercial and industrial?
- Is there a potential for soil and groundwater contamination?
- Is there a potential for offsite migration issues?
- Do the sampling results meet the site criteria proposed?
- If not, does the site require remediation works

9.3 Identify Inputs to Decision

This step requires the identification of the environmental variables/characteristics that need measuring, identification of which media (fill, soil etc.) need to be collected, identification of the site criteria for each medium of concern and appropriate analytical testing. Inputs include:

- Existing site information

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- Site history
- Regional geology, topography and hydrogeology
- Potential contaminants
- Proposed Land Use
- Site assessment criteria
- Results as measured against criteria

9.4 Define the Study Boundaries

Specific spatial and temporal aspects must be provided to identify the boundaries of the investigation and to identify any restrictions that may hinder the assessment process. The site is located at 29-31 and 41-45 Victoria Street, 27 Adelaide Street, 16 & 20 Brougham Street, East Gosford NSW. The site is currently approximately 7686m² in area.

9.5 Develop a Decision Rule

The information obtained through this assessment will be used to characterise the soils and the groundwater on the site in terms of contamination issues and risks to human health and the environment. The decision rule in characterising the site will be as follows:

- Laboratory test results will be measured against the criteria provided within this report
- The site will be deemed suitable for the proposed use if the following criteria are fulfilled:
    - Soil and groundwater concentrations are within background levels
    - QA/QC shows data can be relied upon
    - Results generally meet regulatory criteria

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- Results are from NATA accredited laboratories
- Detection limits are below assessment criteria
- Results can be shown to be of minimal concern

9.6 Specify Limits on Decision Errors

The limits on decision errors for this assessment are as follows:

- The assessment criteria adopted from the guidelines within this report have risk probabilities already incorporated.
- The acceptable limits for inter/intra laboratory duplicate sample comparisons are laid out within our protocols.
- The acceptable limits for laboratory QA/QC parameters are based upon the laboratory reported acceptable limits and those stated within the NEPM 2013 Guidelines.

9.7 Optimise the Design for Obtaining Data

A resource-effective sampling and analysis design was undertaken for data collection that satisfies the DQO's. The sampling and analytical plan is designed to avoid Type 1 and Type 2 errors and includes defining minimum sample numbers required to detect contamination as determined with procedures provided in the NSW EPA 1995 Sampling Design Guidelines and AS 4482.1 - 2005 and appropriate quality control procedures.

Furthermore, only laboratories accredited by NATA for the analysis undertaken were used. The laboratory data was assessed from quality data calculated during this assessment. Field QA/QC protocols adopted and incorporate traceable documentation

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of procedures used in the sampling and analytical program and in data verification procedures.

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10.0 INTRUSIVE SOIL INVESTIGATION

The intrusive soil investigation took place on the 13th April 2023 and was designed to meet the Data Quality Objectives.

10.1 Soil Assessment

FES collected thirty-three (33) primary soil samples from nineteen (19) borehole locations spread across the site and were labelled BH1 to BH19. These locations were selected to detect any contamination that may have originated from past and present activities, and due to potential excavation and future development in these areas.

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Table 9: Sampling Information - Soil

Analyte / Analyte Group / Sample	Depth (m)	SAMPLING DATE	HEAVY METALS (8)	TRH /BTEX/ PAH	PFAS	OPP	Phenol	OC & PCB	PH / CEC / %CLAY	TRH C6-C10 & BTEXN	Asbestos NEPM	Asbestos ID
BH1	0.3-0.4	13.04.2023	x	x	x	x	x	x				x
BH1	0.9-1.0	13.04.2023	x	x				x				
BH1	1.9-2.0	13.04.2023	x	x	x							
BH2	0.2-0.3	13.04.2023	x	x	x	x	x	x				x
BH2	0.9-1.0	13.04.2023	x	x				x				
BH3	0.2-0.3	13.04.2023	x	x	x	x	x	x	x			x
BH3	0.9-1.0	13.04.2023	x	x				x	x			
BH4	0.1-0.2	13.04.2023	x	x				x				x
BH5	0.1-0.2	13.04.2023	x	x		x	x	x				x
BH5	0.6-0.7	13.04.2023	x	x	x			x				
BH5	0.1-0.2	13.04.2023	x	x				x				
BH6	0.1-0.2	13.04.2023	x	x				x				x
BH7	0.2-0.3	13.04.2023	x	x				x				x
BH7	0.4-0.5	13.04.2023	x	x				x				
BH8	0.3-0.4	13.04.2023	x	x				x				x
BH8	0.6-0.7	13.04.2023	x	x				x				
BH9	0.2-0.3	13.04.2023	x	x				x				x
BH9	0.9-1.0	13.04.2023	x	x				x				
BH10	0.2-0.3	13.04.2023	x	x		x		x				x
BH10	0.9-1.0	13.04.2023	x	x				x				
BH11	0.3-0.4	13.04.2023	x	x				x				x
BH11	0.8-0.9	13.04.2023	x	x				x				
BH12	0.3-0.4	13.04.2023	x	x				x			x	x
BH12	0.8-0.9	13.04.2023	x	x				x				
BH13	0.3-0.4	13.04.2023	x	x		x		x			x	x
BH13	0.8-0.9	13.04.2023	x	x				x				
BH14	0.1-0.2	13.04.2023	x	x				x				x
BH15	0.1-0.2	13.04.2023	x	x				x				x
BH16	0.3-0.4	13.04.2023	x	x				x				x
BH16	1.0-1.1	13.04.2023	x	x				x				
BH17	0.0-0.1	13.04.2023	x	x				x				x
BH18	0.2-0.3	13.04.2023	x	x				x			x	x
BH19	1.1-1.2	13.04.2023	x	x	x	x	x	x				x
F1	fragment	13.04.2023										
F2	fragment	13.04.2023										
D1	-	13.04.2023	x	x		x	x	x				
D2	-	13.04.2023	x	x		x	x	x				
SS1	-	13.04.2023	x	x				x				
SS2	-	13.04.2023	x	x				x				
TS1	-	13.04.2023								x		
TB1	-	13.04.2023		x						x		

The locations of the boreholes and samples are shown in **Figure 2** and details of the boreholes are presented in **Appendix G** – Borehole Logs.

Based on information from all boreholes, the surface and sub-surface profile across the site is generalised as follows:

- Fill: Silty Clay, Silty Sandy Clay, Sandy Clay, Clayey Silt
- Natural: CLAY, Silty CLAY, Sandy CLAY

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- Rock: SHALE and SANDSTONE

10.2 Sampling Density and Rationale

The NSW EPA "Sampling Design Guidelines" (August 2022) requires a minimum sampling density of nineteen (19) sampling points for a site area of approximately 7686m².

FES collected thirty-three (33) soil samples from nineteen (19) borehole locations spread across the site and were labelled BH1 to BH19. The locations were drilled by adopting a systematic grid-based sampling pattern across the site and to provide general site coverage with consideration given to accessibility and limitations in relation to underground services & access.

10.3 Sampling Methodology

In summary:

- Soil samples were collected directly from the push tube / split spoon sampler and/or directly from the excavator bucket.
- Soil samples were collected using a hand auger, DCP and U50 to collect undisturbed samples.
- Samples were transferred directly into appropriately labelled clean laboratory supplied containers;
- Samples were transferred into chilled eskies for sample preservation;
- A Chain of Custody was completed and forwarded to the laboratory. Sampling analysis was based on field observations and were in accordance to the schedule outlined in Section 12.

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- Soil samples were submitted to their respective laboratories as specified in Section 12.4.

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11.0 GROUNDWATER INVESTIGATION

11.1 Groundwater Assessment

Foundation Earth Sciences installed and sampled three groundwater wells labelled as BH1/GW1 to BH3/GW3. The schedule of analysis is provided below:

Table 10: Sampling Information – Groundwater

SAMPLE ID	SAMPLING DATE	HEAVY METALS	TRH	BTEX	PAH	AMMONIA	PFAS	VOC	TRH C6-C10 & BTEXN
FES DSI Sampling									
GW1	17/04/2023	X	X	X	X	X		X	
GW2	17/04/2023	X	X	X	X	X		X	
GW3	17/04/2023	X	X	X	X	X		X	
D1	17/04/2023	X	X	X	X	X		X	
SS1	17/04/2023	X	X	X	X			X	
TS1	17/04/2023							X	X
TB1	17/04/2023							X	X
GW1	19/04/2023						X		
GW2	19/04/2023						X		
GW3	19/04/2023						X		
D1	19/04/2023						X		
GWSS1	19/04/2023						X		

The location of the groundwater well is shown in **Figure 2** – Site Features, Borehole Locations and Exceedance Plan and details of the boreholes are presented in **Appendix G** – Borehole Logs.

Refer to **Appendix I** – Field Record Forms & **Appendix L** – Calibration Certificate.

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11.2 Groundwater Methodology

Groundwater monitoring wells were constructed on the 13th April, 2023 by adopting the following methodology:

- 50mm diameter, Class 18PVC threaded and flush joined casing and 0.45 machine-slotted screens were used;
- Coarse, washed sand and gravel was placed in the annulus surrounding the piping to a height of the screen;
- Bentonite pellets were placed in the annulus to form an impermeable plug near the top of the well to prevent surface runoff from entering directly into the well;
- Bentonite pellets were placed in the annulus to form an impermeable plug near the top encountered bedrock;
- A PVC cap was placed on the casing;
- 100mm diameter stainless steel flushed covers were used for all well finishes and concreted onto the ground surface.

Table 11: Summary of Well Construction Details

Well ID	Total Depth (m)	Screening (m)	Surface Level (RL)	Water Bearing	Comment
BH1/GW1	4.1	4.1-0.6	7.75	Clay	Current
BH2/GW2	4.0	4.0-0.6	10.64	Shale/Clay	Current
BH3/GW3	4.1	4.1-0.6	7.35	Clay	Current

Notes:

- RLs was taken from the closest point on the survey plan.

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The following works were carried out upon completion of the well installations:

- The wells were developed by removing at least three well volumes until groundwater parameters reached equilibrium and no further turbidity improvements were observed.

Drilling and installation of the monitoring wells was carried out on the 13th April 2023 using combination of solid flight, hollow flight and NMLC coring.

11.3 Groundwater Sample Collection

Groundwater sampling was undertaken on the 17th & 19TH April 2023. Prior to sampling, the resting water level was recorded within the well while checking for the presence of phase separated hydrocarbon. Sampling was completed using a low flow peristaltic pump – a low flow/minimum drawdown sampling technique used to minimise any disturbance to the aquifer.

Field measured parameters were collected using a certified and calibrated In-situ YSI water quality meter. Samples were collected when field measured parameters (pH, electrical conductivity, redox potential, dissolved oxygen and temperature) had stabilised. The samples were placed into appropriate laboratory supplied bottles and preserved on ice. The peri pump and other sampling equipment were decontaminated before and after use to avoid possible cross contamination. All samples collected were preserved on ice and couriered directly to the laboratory under COC documentation.

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11.4 Groundwater Observations

Table 12: Groundwater Elevations & Observations

Well ID	Well Depth	Surface Level RL	Groundwater Depth Measured (m BGL)	Groundwater Level (RL)	PSH Depth
BH1/GW1	4.1	7.75	1.3	6.45	None
BH2/GW2	4.0	10.64	1.05	9.59	None
BH3/GW3	4.1	7.35	1.7	5.65	None

The field measured parameters (pH), electrical conductivity (EC), redox potential, dissolved oxygen (DO) and temperature recorded during purging, were allowed to stabilise prior sampling. Final stabilised groundwater field parameters are summarised in below.

Table 13: Groundwater Field Results

Well ID	Date	pH	Electrical Conductivity (EC us/cm)	Redox Potential (ORP mV)	Dissolved Oxygen (mg/L)	Temperature (*C)
BH1/GW1	17.04.2023	5.22	322.4	90.1	0.57	26.1
BH2/GW2	17.04.2023	5.71	654	121.7	2.50	25.5
BH3/GW3	17.04.2023	5.10	511	25.6	0.86	23.4

The results of the field parameters measured are summarised as follows:

- pH reading indicated the groundwater is generally acid;
- The EC reading indicated generally fresh water; and
- Redox reading indicated increasing conditions.

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11.5 Catchment Location

It is noted that the groundwater at the site is likely to flow into the Gosford Lagoons & Sydney North Beaches catchment area. This catchment is highly affected by urban development. The water quality objectives for the catchment includes, but not limited, are as follows:

- Maintaining healthy aquatic ecosystems and their riparian zones over the long term;
    - Some indicators include total phosphorus, total nitrogen, chlorophyll-a, turbidity, dissolved oxygen, ph., temperature, chemical toxicants, biological assessment
- Visual amenity and aesthetics.
    - Improved by protecting aquatic ecosystems and improving stormwater management;
    - Some indicators include visual clarity and colour, surface films / debris, nuisance organisms;
- Secondary contact recreation (boating / fishing);
    - Objectives is based on maintaining / improving water quality for activities such as boating and wading, where there is a low probability of water being swallowed.
    - Some indicators include faecal coliforms, algae, chemical contaminants, surface film, visual clarity / odour & nuisance organisms
- Primary contact recreation (swimming which is a longer-term objective)
    - Objectives is based on maintaining / improving water quality for activities where there is a high probability of water being swallowed.
    - Some indicators include faecal coliforms, algae, chemical contaminants, surface film, visual clarity / odour & nuisance organisms.

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- Livestock Water Supply
    - This objective applies to all surface and groundwaters used to water stock. It does not apply to the Northern Beaches catchments.
    - Some indicators include Algae & blue-green algae, Salinity (electrical conductivity), Thermotolerant coliforms (faecal coliforms) & Chemical contaminants
- Irrigation Water Supply
    - This objective applies to all current and potential areas of irrigated crops, both small- and large-scale. In general, this objective does not apply in the Northern Beaches catchments. However, the objective may need to be considered where stormwater is harvested for irrigation of turf and recreation areas.
    - Some indicators include Algae & blue-green algae, Salinity (electrical conductivity), Thermotolerant coliforms (faecal coliforms) & Chemical contaminants

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12.0 QUALITY ASSURANCE / QUALITY CONTROL

12.1 General QA/QC

The frequency required for each field quality assurance / quality control (QA/QC) sample is presented in the table below.

Table 14: QA/QCs Frequencies

	Intra Lab	Inter Lab	Rinsate	Spikes	Blanks
Sampling Frequency	1 in 20	1 in 20	1/day	1/day	1/day

During the contamination assessment the integrity of data collected is considered vital. With the assessment of the site, a number of measures were taken to ensure the quality of the data. These are as follows:

12.2 Sample Containers

Soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lid inserts. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team and media collected.

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12.3 Decontamination

All equipment used in the sampling program was decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment in potable water to remove gross contamination;
- Cleaning in a solution of Decon 90;
- Rinsing in clean demineralised water then wiping with clean lint free cloths;

Foundation Earth Sciences also adopted a sampling gradient of lowest to highest potential contamination to minimise the impact of cross contamination. This gradient was determined from the historical review and the on-site inspection that was carried out prior to sampling.

Although Foundation Earth Sciences maintains consistent sampling procedures, a rinsate sample is obtained to ensure false positive samples are not generated and that decontamination procedures are effective in preventing cross contamination. The Rinsate water is collected after being in contact generally with the trowel used for sampling. Analytical results that target the contaminants of concern are compared to a blank sample, which is taken directly from the rinsate water container supplied by the laboratory.

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A rinsate sample was not collected as the samples were taken either directly from the excavator bucket, push tube / split spoon sampler or U50 tube and therefore the chance for cross-contamination was minimal.

12.4 Sample Tracking, Identification and Holding Times

All samples were forwarded to Envirolab and SGS under recognised chain of custodies with clear identification outlining the date, location, sampler and sample ID. All samples were recorded by the laboratory as meeting their respective holding times. The sample tracking system is considered adequate for the purposes of sample collection.

12.5 Sample Transport

All samples were packed into an esky with ice from the time of collection. A trip blank and trip spike are collected where appropriate. These were transported under chain of custody from the site to Envirolab Pty Ltd and SGS, both NATA registered laboratories. During the project, the laboratory reported that all the samples arrived intact and were analysed within holding times for the respective analytes.

Samples were always kept below 4□C, soil samples submitted for asbestos analysis are not required to be kept below 4°C.

12.6 Trip Spike

Trip Spike samples were obtained from the laboratory prior to conducting field sampling where volatile substances are suspected. Foundation Earth Sciences QA/QC procedures

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for the collection of environmental samples involves the collection of trip blanks, trip spikes and duplicate samples both intra and inter laboratory.

12.7 Trip Blank

A trip blank accompanied the sampling for the sampling process and is not separated from the sample collection and transportation process. The purpose of the trip blank is to identify whether cross-contamination is occurring during the sample collection and transport process.

12.8 Field Duplicate Samples

The tables below list the duplicate soil samples collected with their corresponding primary samples.

Table 15: Soil Field Duplicate Samples

Primary Sample	Sample Depth (m BGL)	Intra Duplicate	Inter Duplicate	Date Sampled
BH1	0.3-0.4	D1	SS1	13.04.2023
BH3	0.2-0.3	D2	SS2	13.04.2023

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Table 16: Groundwater Field Duplicate Samples

Primary Sample	Screen Zone (m bgl)	Intra Duplicate	Inter Duplicate	Date Sampled
GW1	4.1-0.6	D1	SS1	17.04.2023
GW2	4.0-0.6	D1	GWSS1	19.04.2023

Field duplicate samples for soil were prepared in the field through the following process:

- A larger than normal quantity of soil is recovered from the sample location selected for duplication.
- Two Portions of the sub-sample are immediately transferred, one for an intra-laboratory duplicate and another as a sample.
- Samples are placed into a labelled, laboratory supplied 250ml glass jar and sealed with an airtight, Teflon screw top lid. The fully filled jars are labelled as the sample and duplicate and immediately placed in a chilled esky.

Soil Intra-Laboratory duplicate samples were sent to Envirolab while Inter-Laboratory duplicate samples were sent to SGS.

A summary of the test results with the Relative Percentage Difference (RPD) is presented in the following tables.

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The comparisons between the duplicates and original samples indicate acceptable RPDs when they comply with criteria which are commonly set at:

- less than 30% for inorganics and 50% for organics
- greater than five (5) times the laboratory limit of recording (LOR)
- greater than 50% of the relevant health investigation level (HIL) concentration.

The tables, below, give details of intra laboratory and inter laboratory duplicates.

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Table 17a: Intra-lab Soil Sample D1 RPDs

ANALYTE	BH1 0.3-0.4 mg/kg	SGS D1 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	2	<1	-
Cadmium	<0.3	<0.3	-
Chromium	20	3.7	138
Copper	13	1.4	161
Lead	14	6	80
Mercury	<0.05	<0.05	-
Nickel	27	2.6	165
Zinc	24	7.4	106
TRH			
F1	<25	<25	-
F2	<25	<25	-
BTEX			
Benzene	<0.1	<0.1	-
Toulene	<0.1	<0.1	-
Ethylbenzene	<0.1	<0.1	-
Xylenes - Total	<0.3	<0.3	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.1	<0.1	-
Total PAH	<0.8	<0.8	-
ORGANOCHLORINE PESTICIDES			
Heptachlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.2	<0.2	-
DDD	<0.1	<0.1	-
DDE	<0.1	<0.1	-
DDT	<0.1	<0.1	-
Chlordane (trans & cis)	<0.1	<0.1	-
POLYCHLORINATED BIPHENYLS			
Total PCB	<1	<1	-

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Table 17b: Intra-lab Soil Sample D2 RPDs

ANALYTE	BH3 0.2-0.3 mg/kg	ENVIROLAB D2 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	1	1	-
Cadmium	<0.3	<0.3	-
Chromium	7.1	6.9	3
Copper	1.3	1	26
Lead	11	11	0
Mercury	<0.05	<0.05	-
Nickel	1.3	1.2	8
Zinc	11	12	9
TRH			
F1	<25	<25	-
F2	<25	<25	-
BTEX			
Benzene	<0.1	<0.1	-
Toulene	<0.1	<0.1	-
Ethylbenzene	<0.1	<0.1	-
Xylenes - Total	<0.3	<0.3	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.1	<0.1	-
Total PAH	<0.8	<0.8	-
ORGANOCHLORINE PESTICIDES			
Heptachlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.2	<0.2	-
DDD	<0.1	<0.1	-
DDE	<0.1	<0.1	-
DDT	<0.1	<0.1	-
Chlordane (trans & cis)	<0.1	<0.1	-
POLYCHLORINATED BIPHENYLS			
Total PCB	<1	<1	-

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Table 18: Intra-lab Groundwater Sample D1 RPDs

ANALYTE	Envirolab GW1 ug/l	Duplicate D1 ug/l	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	<1	1	-
Cadmium	0.2	0.2	0
Chromium	<1	<1	-
Copper	<1	<1	-
Lead	<1	<1	-
Mercury	<0.0001	<0.0001	-
Nickel	3	66	183
Zinc	<5	12	-
TRH			
C6-C10 (F1)	<50	<50	-
C10-C16 (F2)	<60	<60	-
BTEX			
Benzene	<1	<2	-
Toulene	<0.5	<0.5	-
Ethylbenzene	<0.5	<0.5	-
Xylenes - Total	<1.5	<1.5	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.1	<0.1	-
Naphthalene	<0.2	<0.2	-
VOC			
VINYL CHLORIDE	<0.3	<0.3	-
Chloroform	<0.5	<0.5	-

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Table 18A: Intra-lab Groundwater Sample D1 RPDs

ANALYTE	SGS GW1 ug/l	Duplicate D1 ug/l	RELATIVE PERCENTAGE DIFFERENCE %
PFAS			
PFOS	0.024	0.011	**74**
PFOA	0.004	0.003	29

The comparisons between the intra-laboratory duplicates and corresponding original samples for soil and groundwater indicated generally acceptable RPD, with the exception of; Copper, nickel and Zinc in D1 in the soil RPDs, as Nickel AND PFOS in D1 in the water RPDs, which exceeded the DQOs for this project. However, these exceedances are not considered significant because they are most likely due to the heterogeneity of the samples or low concentrations within the samples.

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Table 19a: Inter-lab Soil Sample SS1 RPDs

ANALYTE	BH1 0.3-0.4 mg/kg	Envirolab SS1 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	2	<4	-
Cadmium	<0.3	<0.4	-
Chromium	20	7	96
Copper	13	3	125
Lead	14	8	55
Mercury	<0.05	<0.1	-
Nickel	27	6	127
Zinc	24	13	59
TRH			
F1	<25	<25	-
F2	<25	<50	-
BTEX			
Benzene	<0.1	<0.2	-
Toulene	<0.1	<0.5	-
Ethylbenzene	<0.1	<1	-
Xylenes - Total	<0.3	<1	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.1	<0.05	-
Total PAH	<0.8	<0.05	-
ORGANOCHLORINE PESTICIDES			
Heptachlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.2	<0.1	-
DDD	<0.1	<0.1	-
DDE	<0.1	<0.1	-
DDT	<0.1	<0.1	-
Chlordane (trans & cis)	<0.1	<0.1	-
POLYCHLORINATED BIPHENYLS			
Total PCB	<1	<0.1	-

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Table 19b: Inter-lab Soil Sample SS2 RPDs

ANALYTE	BH3 0.2-0.3 mg/kg	SGS SS2 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	1	<4	-
Cadmium	<0.3	<0.4	-
Chromium	7.1	8	12
Copper	1.3	1	26
Lead	11	11	0
Mercury	<0.05	<0.1	-
Nickel	1.3	1	26
Zinc	11	15	31
TRH			
F1	<25	<25	-
F2	<25	<50	-
BTEX			
Benzene	<0.1	<0.2	-
Toulene	<0.1	<0.5	-
Ethylbenzene	<0.1	<1	-
Xylenes - Total	<0.3	<1	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.1	<0.05	-
Total PAH	<0.8	<0.05	-
ORGANOCHLORINE PESTICIDES			
Heptachlor	<0.1	<0.1	-
Aldrin	<0.1	<0.1	-
Dieldrin	<0.2	<0.1	-
DDD	<0.1	<0.1	-
DDE	<0.1	<0.1	-
DDT	<0.1	<0.1	-
Chlordane (trans & cis)	<0.1	<0.1	-
POLYCHLORINATED BIPHENYLS			
Total PCB	<1	<0.1	-

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Table 20: Inter-lab Groundwater Sample SS1 RPDs

ANALYTE	Envirolab GW1 ug/l	Split GWSS1 ug/l	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	<1	<1	-
Cadmium	0.2	<0.1	-
Chromium	<1	<1	-
Copper	<1	<1	-
Lead	<1	<1	-
Mercury	<0.0001	<0.05	-
Nickel	3	1	100
Zinc	<5	4	-
TRH			
C6-C10 (F1)	<50	<10	-
C10-C16 (F2)	<60	<50	-
BTEX			
Benzene	<1	<1	-
Toulene	<0.5	<1	-
Ethylbenzene	<0.5	<1	-
Xylenes - Total	<1.5	<2	-
POLYCYCLIC HYDROCARBONS (PAH)			
Benzo(a)pyrene	<0.1	<0.5	-
Naphthalene	<0.2	<0.2	-
VOC			
VINYL CHLORIDE	<0.3	<10	-
Chloroform	<0.5	<1	-

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Table 20A: Inter-lab Groundwater Sample SS1 RPDs

ANALYTE	SGS GW1 ug/l	Envirolab GWSS1 ug/l	RELATIVE PERCENTAGE DIFFERENCE %
PFAS			
PFOS	0.024	0.02	18
PFOA	0.004	0.01	**86**

The comparisons between the inter-laboratory duplicates and corresponding original samples for soil and groundwater indicated generally acceptable RPD, except for; Chromium, copper, nickel and zinc in SS1 soil RPDs, as well as Nickel in SS1 & PFOA in water RPDs, which exceeded the DOQs for this project. However, these exceedances are not considered significant because they most likely are due to the heterogeneity of the samples or low concentrations with the samples.

Field duplicates provide an indication of the whole investigation process, including the sampling process, sample preparation and analysis. The accuracy of the data is adequate due to the effect on confidence intervals with low concentrations in the samples and their duplicates.

12.9 Trip Spike and Trip Blank Results

Trip Spike samples were obtained from the laboratory prior to conducting field sampling where volatile substances are suspected. Trip spike and trip blank samples were collected to assess the effect of sample handling on volatile concentrations in the samples collected and the results are listed in the tables below:

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Table 21: Trip Spike

ANALYTE	TS1 Trip Spike % Soil (mg/kg) 13.04.2023
BTEX	
Benzene	104%
Toluene	101%
Ethyl Benzene	102%
O-Xylenes	103%
M & P Xylenes	103%

ANALYTE	TS1 Trip Spike % water (ug/L) 18.04.2023
BTEX	
Benzene	89%
Toluene	76%
Ethyl Benzene	87%
O-Xylenes	73%
M & P Xylenes	74%

Results discussed in Section 12.11

Table 22: Trip Blank

ANALYTE	Trip Blank Soil (TB1) mg/kg 13.04.2023
TRH	
C6-C10	<25
BTEX	
Naphthalene	<0.1
Benzene	<0.1
Toluene	<0.1
Ethyl Benzene	<0.1
Total Xylenes	<0.3

ANALYTE	Trip Blank water (TB1) ug/L 18.04.2023	Practical Quantitation Limits (PQL)
TRH		
C6-C10	<10	10
BTEX		
Naphthalene	<0.5	1.0
Benzene	<0.5	1.0
Toluene	<0.5	1.0
Ethyl Benzene	<0.5	1.0
Total Xylenes	<1	<3
VOCs	<LOR	1.0

Results discussed in Section 12.11

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12.10 Laboratory QA/QC

The integrity of analytical data provides the second step in the QA/QC process for total data compliance. The data validation techniques adopted by Foundation Earth Sciences are based upon techniques published by the US EPA and in line with methods and guidelines adopted by the NSW EPA and outlined in the NEPM, 2013.

Descriptions are provided of the specific mechanisms used in the assessment of accuracy, precision and useability of analytical data within the project.

Refer to **Appendix H**- NATA Accredited Laboratory Certificates.

12.11 QA/QC Results

The QA/QC results for soil collected at the site are summarised in the table below:

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Table 23: QA/QC Results Summary

Data Quality Indicator	Results	DQI Met
Completeness		
Soil & Groundwater		
Data from critical samples is considered valid	Data is considered valid	Yes
Satisfactory frequency / result for QC samples	The QC results are considered adequate for the purpose of the investigation.	Yes
Field documentation completed	Field records are complete	Yes
Boreholes logs & COCs completed and holding times complied with	Logs, COCs and holding times have been completed and complied.	Yes
Comparability		
Soil & Groundwater		
Standard operating procedures used	Yes	Yes
Consistent field conditions, sampling staff and laboratory analysis	Sampling was conducted by Foundation Earth Sciences scientists operating under the SOPs. The laboratories remained consistent throughout the investigation	Yes
Same analytical methods used	All analytical methods used between laboratories were based on the USEPA/APHA methods	Yes
Limit of reporting appropriate and consistent	The LORs were the same within each laboratory but differed between the primary and secondary laboratories.	Yes
Representativeness		
Soil & Groundwater		
Sampling appropriate for media and analytes	All sampling was conducted in accordance with Foundation Earth Sciences SOPs.	Yes

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Samples adequately preserved	The majority of samples collected were received by laboratories at the correct temperature. Where relevant, samples were stored in acid-preserved containers supplied by laboratories.	Yes
Precision		
Soil & Groundwater		
SOPs appropriate and complied with in relation to field duplicates	The recovery of field duplicates was conducted in accordance with Foundation Earth Sciences SOPs s to allow for the assessment of field precision.	Yes
RPDs of the field duplicates within control limits	The comparisons between the intra and/or inter-laboratory duplicates and corresponding original samples for soil and groundwater indicated generally acceptable RPD with the exception of; • Copper, Nickel and zinc in D1 soil sample • Nickel in D1 water sample • Chromium, copper, nickel and zinc in SS1 soil sample • Nickel in SS1 water sample Each of these exceeded the DQOs for this project. However, these exceedances are not considered significant because they are most likely due to the heterogeneity of the sample or low concentrations within the sample.	Partial
RPDs of the laboratory duplicates within control limits	RPDs of the laboratory duplicates within control limits with the exception of • In SGS report SE246007, the laboratory RPD failed the	Partial

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	acceptance criteria due to sample heterogeneity for chromium, Copper, Nickel in sample SE246007.019/LB277156.024. along with chromium and lead in sample SE246007.029/LB277166.014. • In SGS report SE246007, the laboratory RPD failed the recovery acceptance criteria due to matrix interference in chromium, nickel and zinc in sample SE24007.001/LB277156.004	
Accuracy		
Soil & Groundwater		
SOPs appropriate and complied with in relation to field blanks	Yes	Yes
Rinsate Blanks, trip blanks & laboratory blanks free of contaminants	Laboratory blanks & trip blanks were free of contaminants.	Yes
Surrogate spikes within control limits	RPDs of the surrogate spikes were within control limits.	Yes
Laboratory control spikes within control limits	Laboratory Control Spike recoveries were within control limits	Yes
Matrix Spike recoveries within control limits	RPDs of the laboratory samples within control limits	Yes
Trip spike recoveries within control limits	Yes	Yes

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12.12 QA/QC Evaluation / Conclusion

In summary, the findings of the QA/QC evaluation considered that the data is sufficiently reliable and that the results can be used for the purpose of this project.

SE246007.006 BH3

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13.0 SITE ASSESSMENT CRITERIA

13.1 SOILS

13.1.1 Health Investigation Levels (HILs)

To assess the contamination status of soils at a site, the NSW EPA refers to the document entitled National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) (Amendment 2013).

During any future soil investigations, the site will be assessed against the NEPM exposure scenario 'Commercial and Industrial D' Health Investigation Levels of the above-mentioned guidelines and specifically refers to the following:

HIL 'D' Commercial / industrial, includes premises such as shops, offices, factories and industrial sites

The soil regulatory guidelines are presented in the table below.

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Table 24: Health Investigation Levels (HIL) Criteria for Soil Contaminants

FOUNDATION EARTH SCIENCES	Commerical/Industrial D	Reference
Heavy Metals		
Arsenic	3000	NEPM 2013 - Table 1(A)1 HILs
Beryllium	500	NEPM 2013 - Table 1(A)1 HILs
Boron	300000	NEPM 2013 - Table 1(A)1 HILs
Cadmium	900	NEPM 2013 - Table 1(A)1 HILs
Chromium (VI)	3600	NEPM 2013 - Table 1(A)1 HILs
Cobalt	4000	NEPM 2013 - Table 1(A)1 HILs
Copper	240000	NEPM 2013 - Table 1(A)1 HILs
Lead	1500	NEPM 2013 - Table 1(A)1 HILs
Manganese	60000	NEPM 2013 - Table 1(A)1 HILs
Mercury (Inorganic)	730	NEPM 2013 - Table 1(A)1 HILs
Methyl Mercury	180	NEPM 2013 - Table 1(A)1 HILs
Nickel	6000	NEPM 2013 - Table 1(A)1 HILs
Selenium	10000	NEPM 2013 - Table 1(A)1 HILs
Zinc	400000	NEPM 2013 - Table 1(A)1 HILs
Cyanide (Free)	1500	NEPM 2013 - Table 1(A)1 HILs
Polycyclic Aromatic Hydrocarbons (PAHs)		
Carcinogenic PAHs (as Bap TEQ)	40	NEPM 2013 - Table 1(A)1 HILs
Total PAHs	4000	NEPM 2013 - Table 1(A)1 HILs
Organochlorine Pesticides		
DDT + DDE + DDD	3600	NEPM 2013 - Table 1(A)1 HILs
Aldrin + Dieldrin	45	NEPM 2013 - Table 1(A)1 HILs
Chlordane	530	NEPM 2013 - Table 1(A)1 HILs
Endosulfan	2000	NEPM 2013 - Table 1(A)1 HILs
Heptachlor	50	NEPM 2013 - Table 1(A)1 HILs
HCB	80	NEPM 2013 - Table 1(A)1 HILs
Phenols		
Phenols	240000	NEPM 2013 - Table 1(A)1 HILs
Pentachlorophenol	660	NEPM 2013 - Table 1(A)1 HILs
Cresols	25000	NEPM 2013 - Table 1(A)1 HILs
Polychlorinated Biphenyls (PCBs)		
PCBs	7	NEPM 2013 - Table 1(A)1 HILs
Other Pesticides		
Atrazine	2500	NEPM 2013 - Table 1(A)1 HILs
Chlorpyrifos	2000	NEPM 2013 - Table 1(A)1 HILs
Bifenthrin	4500	NEPM 2013 - Table 1(A)1 HILs
Herbicides		
2,4,5-T	5000	NEPM 2013 - Table 1(A)1 HILs
2,4-D	9000	NEPM 2013 - Table 1(A)1 HILs
MCPA	5000	NEPM 2013 - Table 1(A)1 HILs
MCPB	5000	NEPM 2013 - Table 1(A)1 HILs
Mecoprop	5000	NEPM 2013 - Table 1(A)1 HILs
Picloram	35000	NEPM 2013 - Table 1(A)1 HILs
Other Organics		
PDBE (Br1-Br9)	10	NEPM 2013 - Table 1(A)1 HILs

Note - All values are in mg/kg

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13.1.2 Health Screening Levels (HSLs)

The HSLs are applicable to generic land uses such as residential, commercial/industrial or recreational/public open space and different soil types between the ground surface and soils >4 metres below ground level. The HILs have been applied to assess human health risks via the inhalation and direct contact pathways of exposure. For selection of the health screening criteria an assessment of the in-situ soil profile should be undertaken. The soil profile consisted of predominantly ***Clay***

Table 25: Health Screening Levels (HSL) Criteria

FOUNDATION EARTH SCIENCES	HSL D	HSL D	HSL D	HSL D	Soil Saturation Concentration (Csat)	Reference
	0m to <1m	1m to <2m	2m to <4m	4m+		
SAND						
Toluene	NL	NL	NL	NL	560	NEPM 2013 - Table 1(A) 3 HSLs
Ethylbenzene	NL	NL	NL	NL	64	NEPM 2013 - Table 1(A) 3 HSLs
Xylenes	NL	NL	NL	NL	300	NEPM 2013 - Table 1(A) 3 HSLs
Naphthalene	NL	NL	NL	NL	9	NEPM 2013 - Table 1(A) 3 HSLs
Benzene	3	3	3	3	360	NEPM 2013 - Table 1(A) 3 HSLs
F1	260	370	630	NL	950	NEPM 2013 - Table 1(A) 3 HSLs
F2	NL	NL	NL	NL	560	NEPM 2013 - Table 1(A) 3 HSLs
SILT						
Toluene	NL	NL	NL	NL	640	NEPM 2013 - Table 1(A) 3 HSLs
Ethylbenzene	NL	NL	NL	NL	69	NEPM 2013 - Table 1(A) 3 HSLs
Xylenes	NL	NL	NL	NL	330	NEPM 2013 - Table 1(A) 3 HSLs
Naphthalene	NL	NL	NL	NL	10	NEPM 2013 - Table 1(A) 3 HSLs
Benzene	4	4	6	10	440	NEPM 2013 - Table 1(A) 3 HSLs
F1	250	360	590	NL	910	NEPM 2013 - Table 1(A) 3 HSLs
F2	NL	NL	NL	NL	570	NEPM 2013 - Table 1(A) 3 HSLs
CLAY						
Toluene	NL	NL	NL	NL	630	NEPM 2013 - Table 1(A) 3 HSLs
Ethylbenzene	NL	NL	NL	NL	68	NEPM 2013 - Table 1(A) 3 HSLs
Xylenes	NL	NL	NL	NL	330	NEPM 2013 - Table 1(A) 3 HSLs
Naphthalene	NL	NL	NL	NL	10	NEPM 2013 - Table 1(A) 3 HSLs
Benzene	4	6	9	20	430	NEPM 2013 - Table 1(A) 3 HSLs
F1	310	480	NL	NL	850	NEPM 2013 - Table 1(A) 3 HSLs
F2	NL	NL	NL	NL	560	NEPM 2013 - Table 1(A) 3 HSLs

Note - All values are in mg/kg

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13.1.3 (EILs) and (ESLs)

Ecological Investigation Levels (EILs) -

The NEPM 2013 states that "Ecological investigation levels" (EILs) for the protection of terrestrial ecosystems have been derived for common contaminants in soil based on a species sensitivity distribution (SSD) model developed for Australian conditions. EILs have been derived for As, Cu, CrIII, DDT, naphthalene, Ni, Pb and Zn

Insufficient data was available to derive ACLs for arsenic (As), DDT, lead (Pb) and naphthalene. As a result, the derived EILs are generic to all soils and are presented as total soil contaminant concentrations in Tables 1B (4) and 1B (5) within the NEPM 2013.

For the purposes of EIL derivation, a contaminant incorporated in soil for at least two years is considered to be aged for the purpose of EIL derivation. The majority of contaminated sites are likely to be affected by aged contamination. Fresh contamination is usually associated with current industrial activity and chemical spills.

The following process describes the method for calculation of site specific EILs.

A. EILs for Ni, Cr III, Cu, Zn and Pb aged contamination (>2 years)

Steps 1–4 below describe the process for deriving site-specific EILs for the above elements using Tables 1B (1) – 1B (4), which can be found at the end of the NEPM 2013.

1. Measure or analyse the soil properties relevant to the potential contaminant of concern (pH, CEC, organic carbon, clay content). Sufficient samples need to be taken for these determinations to obtain representative values for each soil type in which the contaminant occurs.

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2. Establish the sample ACL for the appropriate land use and with consideration of the soil-specific pH, clay content or CEC. The ACL for Cu may be determined by pH or CEC and the lower of the determined values should be selected for EIL calculation. Note that the ACL for Pb is taken directly from Table 1(B) 4.

3. Calculate the contaminant ABC in soil for the particular contaminant and location from a suitable reference site measurement or other appropriate method.

4. Calculate the EIL by summing the ACL and ABC:

$$EIL = ABC + ACL$$

B. EILs for As, DDT and naphthalene

EILs for aged contamination for DDT and naphthalene are not available and the adopted EIL is based on fresh contamination taken directly from Table 1B (5). The EILs for As, DDT and naphthalene are generic i.e. they are not dependent on soil type and are taken directly from Table 1B (5). Only EILs for fresh contamination are available for As, DDT and naphthalene due to the absence of suitable data for aged contaminants.

Ecological Screening Levels (ESLs) -

Ecological screening levels (ESLs) are presented based on a review of Canadian guidance for petroleum hydrocarbons in soil and application of the Australian methodology (Schedule B5b) to derive Tier 1 ESLs for BTEX, benzo(a)pyrene and F1 and F2 (Warne 2010a, 2010b)

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The Canadian Council of the Ministers of the Environment (CCME) has adopted risk-based TPH standards for human health and ecological aspects for various land uses in the *Canada-wide standard for petroleum hydrocarbons (PHC) in soil* (CCME 2008) (CWS PHC). The standards established soil values including ecologically based criteria for sites affected by TPH contamination for coarse- and fine-grained soil types.

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Table 26: Ecological Investigation Levels (EIL) and Ecological Screening Levels (ESL) Criteria

FOUNDATION EARTH SCIENCES	Contaminant Age/Soil Texture	National parks and areas of high conservation value	Urban residential and open public spaces	Commercial and industrial	Reference
Ecological Investigation Levels (EILs)					
Heavy Metals					
Arsenic	**Fresh**	20	50	80	NEPM 2013 - Table 1(B) 1-5 EILs
	Aged	40	100	160	NEPM 2013 - Table 1(B) 1-5 EILs
Chromium (III)	**Fresh**	Site Specific Calculation Required			NEPM 2013 - Table 1(B) 1-5 EILs
	Aged				NEPM 2013 - Table 1(B) 1-5 EILs
Copper	**Fresh**	Site Specific Calculation Required			NEPM 2013 - Table 1(B) 1-5 EILs
	Aged				NEPM 2013 - Table 1(B) 1-5 EILs
Lead	**Fresh**	110	270	440	NEPM 2013 - Table 1(B) 1-5 EILs
	Aged	470	1100	1800	NEPM 2013 - Table 1(B) 1-5 EILs
Nickel	**Fresh**	Site Specific Calculation Required			NEPM 2013 - Table 1(B) 1-5 EILs
	Aged				NEPM 2013 - Table 1(B) 1-5 EILs
Zinc	**Fresh**	Site Specific Calculation Required			NEPM 2013 - Table 1(B) 1-5 EILs
	Aged				NEPM 2013 - Table 1(B) 1-5 EILs
Polycyclic Aromatic Hydrocarbons (PAHs)					
Naphthalene	**Fresh**	10	170	370	NEPM 2013 - Table 1(B) 1-5 EILs
	Aged	10	170	370	NEPM 2013 - Table 1(B) 1-5 EILs
Organochlorine Pesticides					
Ecological Screening Levels (ESLs) and Management Limits					
F1 (C_6-C_{10})	**Coarse**				NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	125*	180*	215*	NEPM 2013 - Table 1(B) 6-7 EILs
F1 (C_6-C_{10})	**Coarse**		700	700	NEPM 2013 - Table 1(B) 6-7 EILs
(Management Limits)	**Fine**	-	800	800	NEPM 2013 - Table 1(B) 6-7 EILs
F2 (>C_{10}-C_{16})	**Coarse**				NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	25*	120*	170*	NEPM 2013 - Table 1(B) 6-7 EILs
F2 (>C_{10}-C_{16})	**Coarse**		1000	1000	NEPM 2013 - Table 1(B) 6-7 EILs
(Management Limits)	**Fine**	-	1000	1000	NEPM 2013 - Table 1(B) 6-7 EILs
F3 (>C_{16}-C_{34})	**Coarse**	-	300	1700	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	-	1300	2500	NEPM 2013 - Table 1(B) 6-7 EILs
F3 (>C_{16}-C_{34})	**Coarse**		2500	3500	NEPM 2013 - Table 1(B) 6-7 EILs
(Management Limits)	**Fine**	-	3500	5000	NEPM 2013 - Table 1(B) 6-7 EILs
F4 (>C_{34}-C_{40})	**Coarse**	-	2800	3300	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	-	5600	6600	NEPM 2013 - Table 1(B) 6-7 EILs
F4 (>C_{34}-C_{40})	**Coarse**		10000	10000	NEPM 2013 - Table 1(B) 6-7 EILs
(Management Limits)	**Fine**	-	10000	10000	NEPM 2013 - Table 1(B) 6-7 EILs
Benzene	**Coarse**	10	50	75	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	10	65	95	NEPM 2013 - Table 1(B) 6-7 EILs
Toluene	**Coarse**	10	85	135	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	65	105	135	NEPM 2013 - Table 1(B) 6-7 EILs
Ethylbenzene	**Coarse**	1.5	70	165	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	40	125	185	NEPM 2013 - Table 1(B) 6-7 EILs
Xylenes	**Coarse**	10	105	180	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	1.6	45	95	NEPM 2013 - Table 1(B) 6-7 EILs
Benzo(a)pyrene	**Coarse**	0.7	0.7	1.4	NEPM 2013 - Table 1(B) 6-7 EILs
	Fine	0.7	0.7	1.4	NEPM 2013 - Table 1(B) 6-7 EILs

Notes

1 Urban residential/public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

2 Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.

3 Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used.

4 Insufficient data was available to calculate ACLs for As, DDT and naphthalene. The EIL should be taken directly from Table 1B(5).

5 ESLs are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability.

6 '-' indicates that insufficient data was available to derive a value.

7 To obtain F1, subtract the sum of BTEX concentrations from C6-C10 fraction and subtract naphthalene from >C10-C16 to obtain F2.

8 Management limits are applied after consideration of relevant ESLs and HSLs

9 Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.

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The adopted site criteria for ESLs include 'Commercial and Industrial' with soil predominantly considered to be 'fine' grained. Management limit applicable are for commercial and industrial land use and soil to be considered predominantly fine grained.

13.2 Asbestos

Health screening for asbestos in soil, which are based on scenario-specific likely exposure levels, are adopted from the WA DoH guidelines and are referred in Table 7 in Schedule B1. The following health screening levels for asbestos can be seen below:

Table 27: Health Screening Levels for Asbestos

	Health Screening Levels (w/w)			
Form of Asbestos	**Residential A**	**Residential B**	**Recreational C**	**Commercial/Industrial D**
Bonded ACM	0.01%	0.04%	0.02%	0.05%
FA and AF (Friable Asbestos)	0.001%			
All forms of asbestos	No visible asbestos for surface soil			

13.3 Aesthetic Considerations

Schedule B1 in NEPC (2013) requires the consideration of aesthetic issues arising from soils and groundwater within the site. The following assessment criteria were adopted when considering aesthetics:

- no persistently malodourous soils or extracted groundwater;

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- no persistent hydrocarbon sheen on surface water;
- no staining or discolouration in soils, taking into consideration the natural state of the soil; and
- no large or frequently occurring anthropogenic materials present (to the extent practicable).

13.4 Groundwater

The NSW DECC has endorsed the use of the Groundwater Investigation Levels (GILs) given in the 1999 NEPM '*Schedule B(1) Guideline on the Investigation Levels for Soil and Groundwater*' (Amendment 2013) and the water quality trigger levels given in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC & ARMCANZ, 2000) and recently updated to ANZG (2018). These Guidelines provide criteria for:

- Aquatic ecosystems – both marine and fresh waters

The NEPM advises that 'when assessing groundwater contamination, the GILs are to be applied at the point of extraction and as response levels at the point of use, or where there is a likelihood of an adverse environmental effect at the point of discharge'.

For assessing groundwater quality, it is first necessary to assess the potential uses of groundwater downgradient of the site being assessed.

Potential uses of groundwater downgradient of the site include:

- Discharge to water bodies sustaining aquatic ecosystems particularly Fresh Water.
- Extraction of groundwater by local users.

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The threshold concentrations presented in the ANZG (2018) Fresh and Marine Waters Quality Guidelines are considered applicable for the protection of aquatic ecosystems of the receiving waters. As these guidelines apply to receiving waters, it is generally conservative to apply these to groundwater discharging to receiving waters. It is important to note that these are not threshold values at which an environmental problem is likely to occur if exceeded, rather, if the trigger values are exceeded, then further action is required which may include either further site-specific investigations to assess whether or not there is an actual problem or management / remedial action should be undertaken.

It is considered that ***Marine Water trigger*** values are applicable for investigating chemical concentrations in groundwater at the site. The nearest downgradient watercourse is Erina Creek located approximate 380m to the east of the site. It is understood that the NSW EPA policy is that the trigger values for the protection of 95% of aquatic ecosystems should be used as groundwater assessment criteria when considering moderately or highly disturbed receiving environments. The receiving waters for groundwater at the site are moderately disturbed ecosystems and the ANZG (2018) 95% protection values are therefore considered appropriate groundwater assessment criteria for the site.

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14.0 SOIL RESULTS

The laboratory certificates are presented in **Appendix H** – NATA Accredited Laboratory Certificates.

A summary of the results together with the assessment criteria adopted are provided in **Appendix K** – Summary Tables.

14.1 HEAVY METALS

14.1.1 Heath Investigation Levels

As indicated in Table K1, all of the heavy metals were below the respective LOR and/or the Health Investigation Level (HIL) for a commercial and industrial development, that being the HIL 'D'.

14.1.2 Ecological Investigation Levels

The EILs for Copper, Zinc, Lead, Nickel and Chromium III were derived by adding the Ambient Background Concentration (ABC) to the Added Contaminant Limits (ACL), as per the following formula:

EIL = ABC + ACL

The ABC for the site has been determined by recovering a sample from an appropriate reference point, that being:

- BH3 (0.3-0.4m)

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- BH3 (0.7-0.8m)

The soil samples collected from BH3 were analysed for pH, CEC & %CLAY to provide the background parameters for the soil on the site.

As indicated in Table K1, the concentrations of metals were below the EILs for a commercial and industrial development except for the following:

- A zinc concentration of 410mg/kg exceeds the site derived EIL criteria of 290mg/kg in BH18 (0.2-0.3m).

The zinc data has been assessed statistically against the relevant assessment criteria. As shown in Table K1. The 95% UCL of the mean concentrations of zinc from the fill soil material, was below the EIL site derived criteria and the standard deviation was less than 50% of the criteria and no single concentration exceeded the criteria by more than 250%. As such, the data set satisfies the criteria for zinc contamination is not likely to be an issue within the site.

14.2 TRH, BTEX, NAPHTHALENE &/OR BENZO (A) PYRENE

14.2.1 Heath Screening Levels & Management Limits

As indicated in Table K1, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), benzene, toluene, ethyl benzene, xylenes and naphthalene concentrations were below the HSL 'D' for a Silt and/or Clay soil profile with a source depth of "0m to <1m" & "1m to <2m".

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As shown in Table K1, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), F3 (C_{16}-C_{34}), F4 (C_{34}-C_{40}), concentrations were below the Management Limits for fine-grained soil in a commercial and industrial development.

14.2.2 Ecological Screening Levels

As indicated in Table K1, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), F3 (C_{16}-C_{34}), F4 (C_{34}-C_{40}), benzene, toluene, ethyl benzene, xylenes and benzo(a)pyrene concentrations were below the ESLs for fine grained soil in a commercial/ industrial development.

14.3 PAH, OCP, OPP, PFAS, Total Phenol & PCB

14.3.1 Heath Investigation Levels

As indicated in Table K1, the concentrations of the benzo(a)pyrene (as TEQ), PAH, OCP, OPP, PFAS, Total Phenol & PCB were below the Health Investigation Level (HIL) for a commercial and industrial development, that being the HIL 'D' and/or the limit of reporting (LOR).

14.3.2 EILs & ESLs

As indicated in Table K1, the concentrations of arsenic, naphthalene and DDT were below the EILs & ESLs for a commercial and industrial development.

14.4 Asbestos

As shown in Table K1, *asbestos was detected in fragment samples F1 and F2* located on the site surfaces.

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15.0 GROUNDWATER RESULTS

The laboratory certificates are presented in **Appendix H** – NATA Accredited Laboratory Certificates.

A summary of the results together with the assessment criteria adopted are provided in **Appendix K** – Summary Tables.

15.1 HEAVY METALS

As indicated in Table K2, dissolved nickel and zinc were detected at concentrations above the GILs for Marine Water during the sampling completed by FES in 2023.

15.2 TRH & BTEXN

As shown In Table K2, the BTEXN concentrations were less than the laboratory limit of reporting (LOR) and/or below the assessment criteria.

As indicated in Table K2, the TRH F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), benzene, toluene, ethyl benzene, xylenes and naphthalene concentrations were below the HSL "D" for a Clay profile with a source depth of "2m to <4m".

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15.3 PAH

As indicated in Table K2, the PAH concentrations were either less than the laboratory limit of reporting (LOR) and/or below the assessment criteria.

15.4 VOCs in Groundwater

As indicated in Table K3, the VOC concentrations were either less than the laboratory limit of reporting (LOR) and/or below the adopted assessment.

15.5 Ammonia in Groundwater

As indicated in Table K2, ammonia (as ammonia nitrogen NHa as N) was detected at concentrations below the GILs for Marine Water during the sampling dated 17th April 2023.

15.6 PFAS in Groundwater

As indicated in Table F2, the PFAS concentrations were either less than the laboratory limit of reporting (LOR) and/or below the assessment criteria (PFAS NEPM 2020) in the samples collected by FES on the 19th April 2023.

Refer to **Appendix H** – NATA Accredited Laboratory Certificates.

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16.0 HAZARDOUS GROUND GAS ASSESSMENT

Foundation Earth Sciences was appointed by Bonython Elanora Pty Ltd to undertake Hazardous Ground Gas Monitoring for the property situated at 29-31 and 41-45 Victoria Street, 27 Adelaide Street, 16 & 20 Brougham Street, East Gosford NSW. T

The monitoring was undertaken in April to May 2023 and the data collected from the seven rounds of spot monitoring indicates the following;

- The maximum concentration of methane recorded was 2.3% v/v from BH1 /GW1 during round six on 10th May, 2023 & round seven on the 12th May, 2023;
- The maximum concentration of carbon dioxide was recorded at 11.3% v/v from BH1 /GW1 during round five on 3RD May, 2023;
- The minimum concentration of oxygen recorded was 0% from BH1 /GW1 during round six on 10th May, 2023 & round seven on the 12th May, 2023;
- Carbon monoxide was detected at maximum concentration of 431ppm in BH3/GW3 during round one on the 19th April 2023;
- The maximum PID reading was recorded at 10.8ppm in BH3/GW3 in round one dated 19th April 2023;
- The maximum (LEL%) reading was recorded at 28% during round seven in BH1 / GW1 dated 12th May 2023;

Refer to **Appendix O** – Hazardous Ground Gas Assessment.

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17.0 PRELIMINARY WASTE CLASSIFICATION

This preliminary waste classification refers to the fill material from nineteen boreholes designated as BH1 to BH19. The samples were analysed for a selection of Heavy Metals, Total Petroleum Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, Xylene (BTEX), Polycyclic Aromatic Hydrocarbons (PAH), Organochlorine Pesticides (OCP), Polychlorinated Biphenyls (PCB), OPP, Phenol & Asbestos.

With reference to the site figures, laboratory analysis, table K4 and with reference to NSW EPA guidelines, the insitu fill soil materials found within the site have been classified as follows;

- *Soil fill material located within the vicinity of FES (DSI 2023) borehole locations BH1 to BH19 including D1/D2 & SS1 & SS2 are classified as* ***General Solid Waste (non-putrescible).***
- *Soil fill material located within the vicinity of FES (DSI 2023) surface locations denoted as F1 & F2 are classified as* ***Special Waste (Asbestos).***
- TCLP analysis is required to further assess the waste and will be required at the time of disposal for PFAS.
- This waste classification is preliminary in nature and further works are required to be undertaken during the excavation phase of the development to classify soils for offsite disposal.

Refer to **Appendix K** – Summary Tables – K4

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18.0 DISCUSSION

18.1 SOILS

The soil data revealed the following:

- Asbestos was detected in the surface sample fragments denoted as F1 & F2. Further remediation works are required at this location.

18.2 GROUNDWATER QUALITY

The following lines of evidence support the low-risk groundwater conclusions in relation to site suitability:

- The elevated heavy metals of nickel and zinc are related to offsite regional contaminant concentrations and/or background levels & therefore of limited concern in relation to the GILs;
- Surface soil materials did not indicate a significant presence of the elevated groundwater analytes and therefore unlikely to be a source of the metal exceedances.
- The site is not located in a catchment with contains the water quality objectives of drinking water (i.e. beneficial use) and therefore drinking water guidelines were not applied; and
- The groundwater analysis indicated PFAS and ammonia were below the adopted guidelines.

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18.3 HAZARDOUS GROUND GAS ASSESSMENT

Based on the Wilson and Card method the characteristic gas situation (CS) determined is 3 (moderate risk). As per NSW EPA 2012 "Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases", appropriate gas protection measures for the site are required.

Utilising the site derived CS, the gas protection guidance value of 3 has been adopted from the NSW EPA 2012 "Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases".

Based on the spot monitoring results to date, the site can be made ***suitable*** for the proposed development, subject to the following:

- Completion of a longer-term ground gas monitoring program including continuous landfill gas monitoring and additional landfill gas monitoring wells to provide a more detailed assessment of the risk posed to the proposed development.

18.4 DATA GAPS

The following data gaps remain:

- Waste classification to facilitate disposal (noting TCLP required for PFAS);
- Longer term hazardous ground gas assessment;

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18.5 DUTY TO REPORT

Under Section 60 of the Contaminated Land Management Act 1997, the owner of the land is required to notify contamination in circumstances as indicated in the NSW EPA (2015) *Guidelines on Duty to Report Contamination under the Contaminated Land Management Act 1997*.

Sites that are significantly impacted by soil, groundwater and ground gases are likely to require notification to the NSW EPA under section 60 of the CLM Act. A decision process for use by site owners or responsible persons considering reporting contamination under section 60 is provided in Appendix 1 (Figure 1) of the aforementioned guidelines. No notification to NSW EPA is recommended based on the sampling and investigation to date.

No notification to NSW EPA is recommended based on the sampling and investigation to date.

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19.0 CONCLUSION

Based on the historical review, environmental information, proposed development and laboratory results of the investigation, the site can be made ***suitable*** for the proposed development, subject to the following:

- It is considered that the site would be deemed suitable for the proposed development subject to the implementation of a Remediation Action Plan (RAP) to manage the abovementioned environmental concerns and data gaps.
- Completion of a longer-term ground gas monitoring program including continuous landfill gas monitoring and additional landfill gas monitoring wells to provide a more detailed assessment of the risk posed to the proposed development.
- Any soil requiring removal from the site, as part of future site works, should be classified in accordance with the "Waste Classification Guidelines, Part 1: Classifying Waste" NSW EPA (2014).

If during any potential site works, significant odours and / or evidence of gross contamination (including asbestos) not previously detected are encountered, or any other significant unexpected occurrence, site works should cease in that area, at least temporarily, and the environmental consultant should be notified immediately to set up a response to this unexpected occurrence.

Thank you for the opportunity of undertaking this work. We would be pleased to provide further information on any aspects of this report.

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20.0 LIMITATIONS

To the best of our knowledge information contained in this report is accurate at the date of issue, however, subsurface conditions, including groundwater levels and contaminant concentrations, can change in a limited time. This should be borne in mind if the report is used after a protracted delay.

There is always some disparity in subsurface conditions across a site that cannot be fully defined by investigation. Hence it is unlikely that measurements and values obtained from sampling and testing during environmental works carried out at a site will characterise the extremes of conditions that exist within the site.

There is no investigation that is thorough enough to preclude the presence of material that presently or in the future, may be considered hazardous at the site. Since regulatory criteria are constantly changing, concentrations of contaminants presently considered low may, in the future, fall under different regulatory standards that require remediation.

Opinions expressed herein are judgements and are based on our understanding and interpretation of current regulatory standards and should not be construed as legal opinions.

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REFERENCES

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- NSW EPA (2014) "*Technical Note: Investigation of Service Station Sites*".
- NSW EPA (2020), "Consultants Reporting on Contaminated Land". NSW Environment Protection Authority, Parramatta
- NSW DEC "Guidelines for the NSW Site Auditor Scheme" (2017, 3rd edition). NSW Environment Protection Authority, Sydney.
- NSW EPA (2014) – "Waste Classification Guidelines, Part 1: Classifying Waste";
- NSW EPA (2015) "Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997";
- NSW EPA "Sampling Design Part 1 Application" (August 2022). NSW Environment Protection Authority, Parramatta.
- US EPA "Regional Screening Level (RSL) Summary Tables" (2016). United States Environment Protection Authority.

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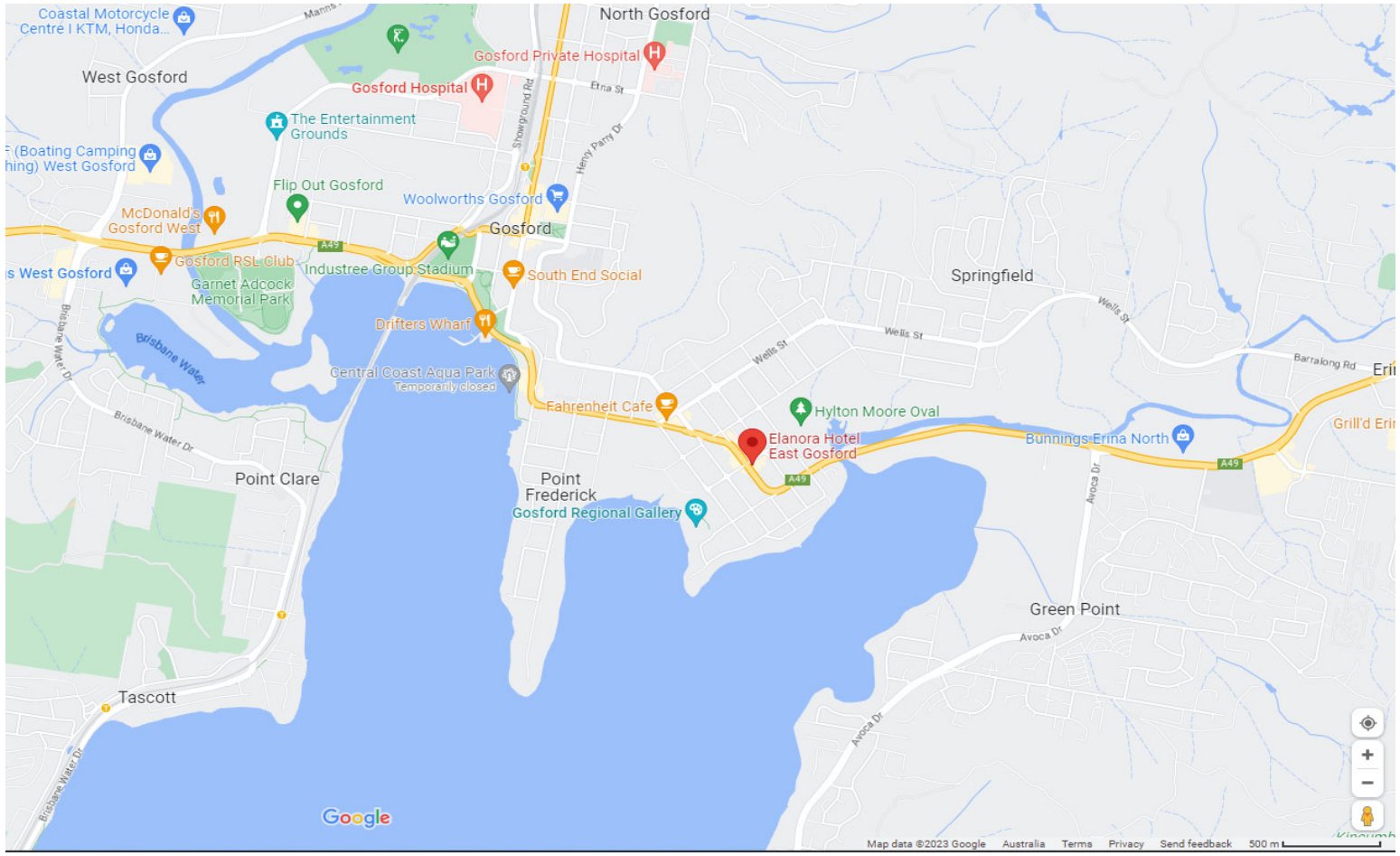
FIGURE 1: SITE LOCATION

© Foundation Earth Sciences 2023



Key Site Location	FOUNDATION EARTH SCIENCES	**DRAWN** KV	**SITE LOCATION**
		FIGURE 1	Bonython Elanora Pty Ltd
		Job # E3019	29-31 and 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, East Gosford NSW

FIGURE 2: SITE FEATURES, BOREHOLE LOCATIONS & EXCEEDANCE PLAN

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Feature No	Details
a	Elanora hotel
b	Commercial
c	Fire station
d	Carpark
e	Vacant building

Soil Exceedance (mg/Kg)

Groundwater Exceedance (ug/L)

Key

Site Location
FES 2023 Soil Sampling Locations
FES 2023 Water Sampling Locations

FOUNDATION EARTH SCIENCES

DRAWN DG	**Site Plan**
Figure 1	Bonython Elanora Pty Ltd
Job # E3019	29-31 and 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, East Gosford NSW

APPENDIX A: DBYD PLANS

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Job No 33916532

Phone: 1100
www.byda.com.au

Caller Details

Contact:	reece wallace	**Caller Id:**	3311766	**Phone:**	0402 180 632
Company:	foundation earth sciences				
Address:	119/14 loyalty road north rocks NSW 2151	**Email:**	reece@foundationes.com.au		

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

User Reference: 27a Adelaide Street
Working on Behalf of: Private

Enquiry Date:	Start Date:	End Date:
30/03/2023	06/04/2023	06/04/2023

Address:
27a Adelaide Street
East Gosford NSW 2250

Job Purpose:	Onsite Activities:
Design	Planning & Design

Location of Workplace: Private
Location in Road:

- Check that the location of the dig site is correct. If not you must submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:
Not supplied

Your Responsibilities and Duty of Care

- The lodgement of an enquiry does not authorise the project to commence. You must obtain all necessary information from any and all likely impacted asset owners prior to excavation.
- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at **www.byda.com.au**
- **For more information on safe excavation practices, visit www.byda.com.au**

Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days.
Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.
** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.
# Asset owners highlighted with a hash # require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
222927379	Ausgrid	(02) 4951 0899	NOTIFIED
222927380	Central Coast Council	(02) 4350 3111	NOTIFIED
222927381	Jemena Gas North	1300 880 906	NOTIFIED
222927378	NBN Co NswAct	1800 687 626	NOTIFIED
222927377	Optus and or Uecomm Nsw	1800 505 777	NOTIFIED
222927383	Telstra NSW Central	1800 653 935	NOTIFIED
222927382	Transport for NSW	(02) 9983 2687	NOTIFIED

END OF UTILITIES LIST

APPENDIX B: NSW EPA RECORDS

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+ POEO Public Register
− Contaminated land record of notices
About the record of notices
List of notified sites
Tips for searching
Disclaimer
Dangerous goods licences
Pesticide licences
Radiation licences

Search results

Your search for: Suburb: EAST GOSFORD

Matched 12 notices relating to 2 sites.

Search Again Refine Search

Suburb	Address	Site Name	Notices related to this site
EAST GOSFORD	Althrop STREET	Hylton Moore Park	3 current and 2 former
EAST GOSFORD	44 Victoria STREET	Mobil Service Station	7 former

Page 1 of 1

31 March 2023

Suburb	SiteName	Address	ContaminationActivityType	ManagementClass	Latitude	Longitude
EAST BALLINA	Caltex East Ballina Service Station	34 Links AVENUE	Service Station	Regulation under CLM Act not required	-28.85009113	153.5829246
EAST GOSFORD	Presbyterian Aged Care Facility	8-18 Enid CRESCENT	Landfill	Regulation under CLM Act not required	-33.4376675	151.3577947
EAST GOSFORD	Mobil Service Station	44 Victoria STREET	Service Station	Contamination formerly regulated under the CLM Act	-33.43804781	151.353303
EAST GOSFORD	Hylton Moore Park	Althrop STREET	Landfill	Contamination currently regulated under CLM Act	-33.4352203	151.3601193
EAST MAITLAND	United Service Station East Maitland	164 (also known as 250) Newcastle STREET	Service Station	Regulation under CLM Act not required	-32.75245246	151.5869136
EAST MAITLAND	Woolworths Caltex Green Hills	14 Mitchell DRIVE	Service Station	Regulation under CLM Act not required	-32.76182386	151.5927863
EAST MAITLAND	Former Gasworks Site	Corner Melbourne Street and Brisbane STREET	Gasworks	Regulation under CLM Act not required	-32.74939199	151.5788783
EAST MAITLAND	Caltex East Maitland Service Station	Newcastle Road, Corner William STREET	Service Station	Regulation under CLM Act not required	-32.74883712	151.5829296
EAST MAITLAND	61 Banks Street, East Maitland	61 Banks STREET	Unclassified	Under assessment	-32.748217	151.580843
EAST TAMWORTH	Caltex Service Station	350-362 Armidale ROAD	Service Station	Regulation under CLM Act not required	-31.11401974	150.9613327
EASTERN CREEK	Caltex Service Station	M4 (Eastbound) MOTORWAY	Service Station	Regulation under CLM Act not required	-33.801607	150.8857989
EASTERN CREEK	Caltex Service Station M4 Motorway Westbound	M4 (Westbound) MOTORWAY	Service Station	Regulation under CLM Act not required	-33.80255701	150.8829211
EASTERN CREEK	Fulton Hogan Industries (formerly Pioneer Road Services)	Honeycomb DRIVE	Other Industry	Regulation under CLM Act not required	-33.80231274	150.8288299
EASTGARDENS	130-150 Bunnerong Road Eastgardens	130 - 150 Bunnerong ROAD	Other Industry	Regulation under CLM Act not required	-33.94230414	151.2248138
EASTLAKES	Former Shell Rosebery service station and adjacent land	275-279 Gardeners ROAD	Service Station	Contamination formerly regulated under the CLM Act	-33.92471289	151.2100772

− POEO Public Register
- Licences, applications and notices search
- Penalty notices search
- Enforceable undertakings search
- Enforceable undertakings media releases
- Exemptions and approvals search
- Prosecutions or civil proceedings search
- Terms of use: POEO public register
- Licensing FAQs
- List of licences
- Unlicensed premises regulated by the EPA

+ Contaminated land record of notices

Dangerous goods licences

Pesticide licences

Radiation licences

Search results

Your search for: **General Search** with the following criteria

Suburb - EAST GOSFORD

returned 0 result

Search Again

The NSW Government PFAS Investigation Program

View a map of the sites in NSW that may be contaminated with PFAS, learn how to reduce your exposure to these dangerous chemicals, and read about our investigation of the issue.

The EPA is leading an investigation program to assess the legacy of PFAS use across NSW. With the assistance of the NSW PFAS Technical Advisory Group, which includes NSW Health, Department of Primary Industries and the Office of Environment and Heritage, we provide impacted residents with tailored, precautionary dietary advice to help them reduce any exposure to PFAS.

Current investigations are focused on sites where it is likely that large quantities of PFAS have been used. The EPA is currently investigating PFAS at these sites:

Map view | List view

List view

Clear filters

☐ Only show sites within current map view

Showing 0 of 50 sites

	Organisation	Address	Status
	filter by organisation	EAST GOSFORD	☑ PFAS investigation site

Sampling and analysis

The EPA is collecting samples of soils and/or waters for analysis for PFAS. The EPA is also looking for exposure pathways that may increase people's contact with the chemicals, such as bore and surface water usage.

If significant levels are detected and human or ecological exposure is likely, a more detailed assessment will be undertaken.

The EPA will work with the occupiers and owners of these sites, or the responsible parties, to clean-up the site, where necessary.

Timeframes for the investigation

The initial investigations can take approximately six months, with further testing undertaken where required.

Test findings are made available throughout the investigations.

More information is available on the NSW EPA PFAS investigation process page.

Release of draft PFAS National Environmental Management Plan version 3

The PFAS National Environmental Management Plan (PFAS NEMP) provides a practical basis for nationally consistent environmental guidelines and standards for investigating, assessing and managing PFAS waste and contamination.

The Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) has now released the draft PFAS NEMP version 3.0 (NEMP 3.0).

NEMP 3.0 builds on previous versions and includes additional guidance on the following priority areas:

- Theme 1: PFAS family – international approaches to grouping of PFASs.
- Theme 2: Environmental data and monitoring - guidance on ambient monitoring data collection and land use classifications to enable comparability.
- Theme 3: Water - risk-based criteria and guidance for beneficial reuse of biosolids.
- Theme 4: Soil - guidance and standards around PFAS behaviour in soil, including leaching and associated ecological and human health guidance. It finalises and reviews two guideline values already in the NEMP and proposes two new guideline values for soil and one for wildlife diet.
- Theme 5: Resource recovery and waste - guidance on management of risks associated with PFAS in resource recovery products.
- Theme 6: Site specific guidance - guidance on principles and approaches to remediation and management; guidance on construction water; and guidance on estuarine, coastal and marine sediment.

Have your say on NEMP 3.0

You can provide feedback on NEMP 3.0 by lodging a submission online, or by attending a public consultation session.

You feedback will help to ensure that NEMP 3.0 is fit for purpose in continuing to provide useful and nationally consistent guidance and standards on PFAS contamination.

All feedback received will be considered by the National Chemicals Working Group before NEMP 3.0 is finalised. An ancillary document summarising the feedback and the responses made is expected to be published by DCCEEW.

Online consultation

Online public consultation is currently underway and will be available until **4pm AEDT 20 December 2022**.

You can find more information about submitting feedback online on the DCCEEW page .

NSW consultation session

We will publish more information about our public consultation session on this page when it becomes available.

Working with our stakeholders

The NSW Government is committed to working closely with all relevant government agencies, to closely monitor the progress of investigations, and to keep local communities informed. Government agencies include local councils, NSW Department of Primary Industries, NSW Health, NSW Food Authority, and where necessary the Commonwealth Department of Defence, and Commonwealth Department of Health.

In NSW the polluter pays for and manages any clean-up required. Although the NSW Government cannot regulate Defence sites, it has outlined expectations that Defence will carry out investigations in a timely manner that is consistent with the EPA's requirements and processes.

More information

- PFAS investigation program fact sheet (PDF 213KB)
- PFAS investigation program FAQs page
- NSW Department of Health
- For specific health inquiries call the NSW Department of Health on **1300 066 055**
- If you have any questions about the EPA's PFAS investigation program, please call the Environment Line on **131 555** or emailinfo@environment.nsw.gov.au

Page last updated 23 September 2022

Please consider the environment before printing.

Environment Protection Authority

Notice to amend Approved Voluntary Management Proposal

(Section 44 of the *Contaminated Land Management Act 1997*)

Notice Number **20224442**; Area Number **3458**

Background

The land to which this notice applies was declared as "significantly contaminated land" (Declaration No. 20201106) by the Environment Protection Authority (EPA) and is the subject of an EPA approved Voluntary Management Proposal (approved proposal) submitted by Central Coast Council (Council) (Approval No. 20201712) under the *Contaminated Land Management Act 1997* (CLM Act). The approved proposal includes the investigation of site contamination and determination of potential exposure to human ecological receptors.

Land to which this notice applies

The land to which this Notice applies is Hylton Moore Park, Althorp Street, East Gosford NSW 2250 (the Land), being made up of:

- Lots 1-33 in DP 197405
- Lots 14-29 in DP 24248
- Lot 40 in DP519355
- Lot 2 in DP 247233
- Lots 8A & AB in DP 413380
- Lot 1 in DP 232403
- Lot 1 in DP 56797

Amendment of Approved VMP

A request has been made by Council to amend the milestone dates in the approved proposal due to delays associated with funding approvals from Council. The Auditor has deemed it necessary to expand scope of works including additional groundwater, surface water monitoring rounds and site auditor review of the works.

The EPA considers that the request from Council is reasonable and agrees to amend **Part 3 Performance Schedule** of the approved proposal. Works set out in the approved proposal must be completed by the revised deadlines specified below.

Item 3.3 - Key milestones for investigation, remediation and other actions

All works set out in the approved proposal must be completed in accordance the following schedule:

Works	Amended Date
Community Consultation Plan	Completed
Interim Site Management Plan	Completed
Sampling Analysis and Quality Plan (SAQP) for the Detailed Site Investigation (DSI)	Completed
DSI Fieldworks, including groundwater, surface water and landfill gas sampling event	Completed

Prepration of DSI report	Completed
Auditor review of DSI, to include interim audit advice	Completed
Revised Interim Site Management Plan *(addressing DSI findings and recommendations)*	10 October 2022 - 22 February 2023
Commencement of Quarterly monitoring (*1 year duration, including groundwater, surface water, LFG)*	December 2022, March 2023, June 2023, September 2023
Further targeted investigations/focussed risk assessment	1 February 2023 - 28 April 2023
HHERA	1 May 2023 -15 August 2023
Remedial Options Assessment	Within 3 months of HHERA
Remedial Action Plan	Within 3 months of ROA
Site Audit Statement (Section B2 Audit)a	Within 2 months of completion of RAP
Remediation and validation works	To be confirmed once the scope of works is known
Validation Report	Within 2 months of completion of remediation and validation works
Long Term Environmental Management Plan	Within 2 months of completion of remediation and validation works
Site Audit Statement (Section B4 Audit)	Within 2 months of completion of long term EMP & Validation Report

Item 3.4 - Reporting requirements and timeframe for submission of reports

The EPA must be provided with the following reports by the revised deadlines specified below:

Report	Amended Date
R1. Interim Site Management Plan	Completed
R2. Community Consultation Plan	Completed
R3. SAQP	Completed
R4. DSI Report	Completed
R1.1. Revised interim Site Management Plan	Wednesday 22 February 2023
R5. Interim Audit Advice	Friday, 25 November 2022
R4.1 Additional investigation reports/assessment	Friday, 28 April 2023
R6. HHERA	Tuesday 15 August 2023
R7. Remedial Option Assessment	within 3 months of HHERA
R8. Remedial Action Plan	within 3 months of ROA
R9. Section B2 SAS and SAR	Within 2 months of completion of RAP
R10. Final Validation Report and EMP	Within 2 months of completion of all remediation works

R11. Section B4 SAS and SAR	Within 2 months of completion of Validation Report and EMP

This Notice replaces Notice to amend Approved Voluntary Proposal No. 20214445.

Other than the amendments set out above, the remaining terms of the approved VMP No. 20201712 remain in force.

[Signed 15 December 2022}

CLAIRE MILES

Unit Head Regulatory Operations
Environment Protection Authority

NOTE:
Information recorded by the EPA
Section 58 of the CLM Act requires the EPA to maintain a public record. A copy of this notice will be included in the public record.
Information recorded by councils
Section 59 of the CLM Act requires the EPA to give a copy of this notice to the relevant local council. The council may then make appropriate consequential modifications to the planning certificate issued in relation to the land to which this notice applies pursuant to s10.7 of the *Environmental Planning and Assessment Act 1979*.
Relationship to other regulatory instruments
This notice does not affect the provisions of any relevant environmental planning instruments which apply to the land or provisions of any other environmental protection legislation administered by the EPA.
Previous regulatory instrument
As of 1 July 2009, all current declarations of investigation area and declarations of remediation site are taken to be declarations of significantly contaminated land, all current investigation orders and remediation orders are taken to be management orders and all current agreed voluntary investigation proposals and agreed voluntary remediation proposals are taken to be approved voluntary management proposals.

Declaration of significantly contaminated land

Section 11 of the *Contaminated Land Management Act 1997*

Declaration Number (20201106); Area Number (3458)

The Environment Protection Authority (EPA) declares the following land to be significantly contaminated land under s.11 of the *Contaminated Land Management Act 1997* (the Act).

1. Land to which this Declaration applies

This declaration applies to significantly contaminated land described as Hylton Moore Park, Althorp Street, East Gosford within the Local Government Area of Central Coast Council (the Land). The Land includes the following:

- Lots 1-33 in DP 197405
- Lots 14-29 in DP 24248
- Lot 40 in DP519355
- Lot 2 in DP 247233
- Lots 8A & AB in DP 413380
- Lot 1 in DP 232403
- Lot 1 in DP 56797

The land to which this declaration applies is shown on the attached map and is shaded blue.

2. Substances affecting the Land

The EPA has reason to believe that the Land is contaminated with the following substances (the Substances) in such a way as to warrant regulation as significantly contaminated land under the Act:

- ammonia;
- per-and-polyfluoroalkyl substances (PFAS); and
- hazardous ground gases, including methane and carbon dioxide.

3. Nature of harm caused by the Substances

The EPA has considered the matters in s.12 of the Act before making this declaration. The EPA has reason to believe harm has been, or may be, caused by the Substances, including:

- ammonia has been found in groundwater under the landfill and surface water drains at concentrations significantly above the Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) 95% species protection criteria;
- per-and-poly-fluoroalkyl substances (PFAS) are present in groundwater under the landfill and surface water drains at concentrations above the interim guidelines for aquatic species;
- landfill gases (methane and carbon dioxide) are being generated at the site and have been measured in subsurface monitoring wells near the skate park and on the landfill boundary at concentrations above the trigger levels for further investigation in the NSW EPA Environmental Guidelines: Solid Waste Landfills (2016); and
- leachate is present in an onsite drainage channel, increasing the risk of dermal contact with leachate and for leachate to reach Erina Creek.

4. Further action to carry out voluntary management under the Act

The making of this declaration does not prevent the carrying out of voluntary management of the Land by any person. Any person may submit a voluntary management proposal for the Land to the EPA.

5. Submissions invited

Any person may make a written submission to the EPA on:

- whether the EPA should issue a management order in relation to the Land; or
- any other matter concerning the Land.

Submissions should be made in writing and sent to:

Director, Regulatory Operations – Metro North
Environment Protection Authority
PO Box 488G
Newcastle NSW 2300

or emailed to contaminated.sites@epa.nsw.gov.au

By not later than 31 March 2020.

[signed]

ADAM GILLIGAN
Director, Regulatory Operations - Metro North
Environment Protection Authority

(By delegation)

Date: 10 March 2020

Further Information about this Declaration

Management Order may follow

If management of the Land or part of the Land is required, the EPA may issue a Management Order under s 14 of the Act.

Amendment or Repeal of Declaration

This declaration may be amended or repealed. It remains in force until it is otherwise amended or repealed. The subsequent declaration must state the reasons for the amendment or repeal (s 44 of the Act).

Information recorded by the EPA

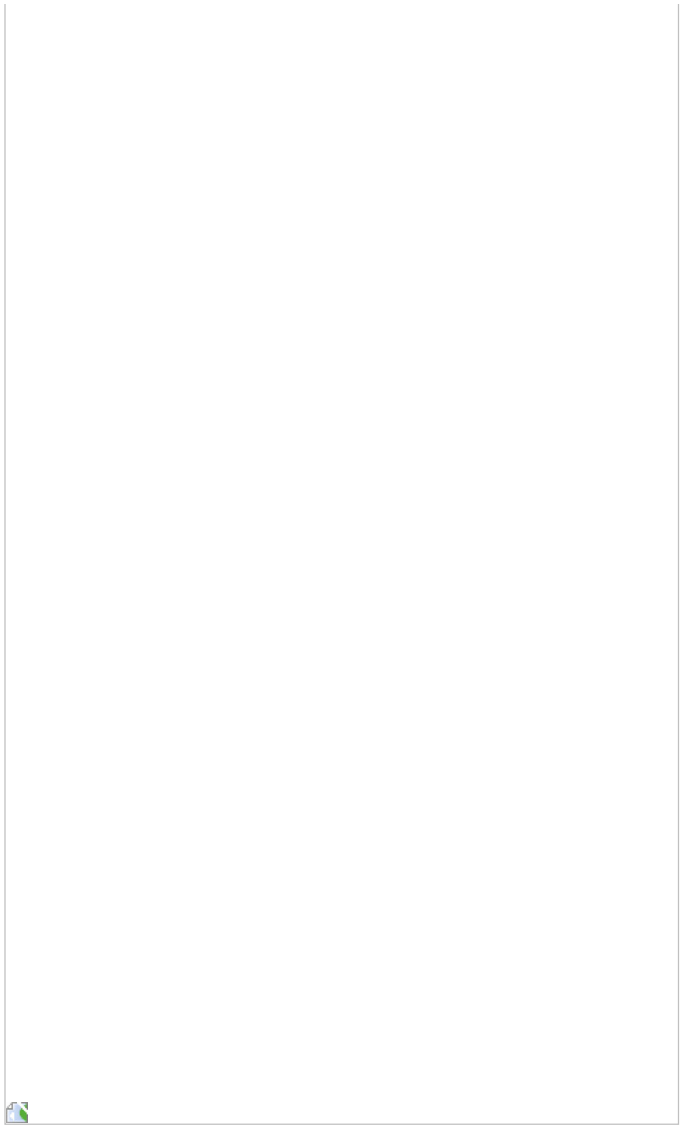
Section 58 of the Act requires the EPA to maintain a public record. A copy of this significantly contaminated land declaration will be included in the public record and is available for access at the principal office of the EPA and on the EPA's website.

Information recorded by Councils

Section 59(a) of the Act requires the EPA to inform the relevant local Council as soon as practicable of this declaration. Pursuant to s 59(2)(a) of the Act, land being declared to be significantly contaminated land is a prescribed matter to be specified in a planning certificate issued pursuant to s 10.7 of the *Environmental Planning and Assessment Act 1979*. The EPA is also required to inform the relevant Council as soon as practicable when the declaration is no longer in force. Pursuant to s 59(3) of the *Contaminated Land Management Act 1997*, if a Council includes advice in a planning certificate regarding a declaration of significantly contaminated land that is no longer in force, the Council is to make it clear on the planning certificate that the declaration no longer applies.

Relationship to other regulatory instrument

This declaration does not affect the provisions of any relevant environmental planning instruments which apply to the land or provisions of any other environmental protection legislation administered by the EPA.



Environment Protection Authority

Notice to end significantly contaminated land declaration

(Section 44 of the *Contaminated Land Management Act 1997*)

Notice Number 20154420; Area Number 3291

Background

The land to which this notice applies, was declared as "significantly contaminated land" (declaration No. 2010119) by the Environment Protection Authority (EPA) and has been the subject of an EPA-approved voluntary management proposal (approval No.20141705). The management actions have been completed and the results have been made available to the EPA.

End of declaration

Having reviewed the results of the management actions, the EPA is satisfied that it no longer has reason to believe that contamination of the land to which this notice applies is significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act).

Pursuant to section 44 of the CLM Act, declaration of significantly contaminated land No. 2010119, dated 13 December 2010, ceases to be in force on the date on which this notice is signed in so far as the Declaration applies to the land to which this notice applies.

Land to which this notice applies

Description	Address
Lot 1 in DP 124027	42-44 Victoria Street, East Gosford NSW 2250

[Signed]

NIALL JOHNSTON
Manager Contaminated Sites
Environment Protection Authority

Date: 3 February 2016

NOTE:

Information recorded by the EPA

Section 58 of the CLM Act requires the EPA to maintain a public record. A copy of this notice will be included in the public record.

Information recorded by councils

Section 59 of the CLM Act requires the EPA to give a copy of this notice to the relevant local council. The council may then make appropriate consequential modifications to the planning certificate issued in relation to the land to which this notice applies pursuant to s149 of the *Environmental Planning and Assessment Act 1979*.

Relationship to other regulatory instrument

This repeal notice does not affect the provisions of any relevant environmental planning instruments which apply to the land or provisions of any other environmental protection legislation administered by the EPA.

Previous regulatory instrument

As of 1 July 2009, all current declarations of investigation area and declarations of remediation site are taken to be declarations of significantly contaminated land, all current investigation orders and remediation orders are taken to be management orders and all current agreed voluntary investigation proposals and agreed voluntary remediation proposals are taken to be approved voluntary management proposals.

APPENDIX C: SITE PHOTOGRAPHS

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SITE PHOTOGRAPHS

Client:	Bonython Elanora Pty Ltd
Project:	DSI
Site Location:	29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham St, East Gosford NSW
Job No.:	E3019

FOUNDATION EARTH SCIENCES

Photo 1

View of buildings near Adalaide street
Looking North-East
Inspected 31.03.2023

Photo 2

View of the bottlemart next to the hotel
Looking South West
Inspected 31.03.2023

Photo 3

View of paved area on the northeast side of the Elanora hotel
Looking North-West
Inspected 31.03.2023

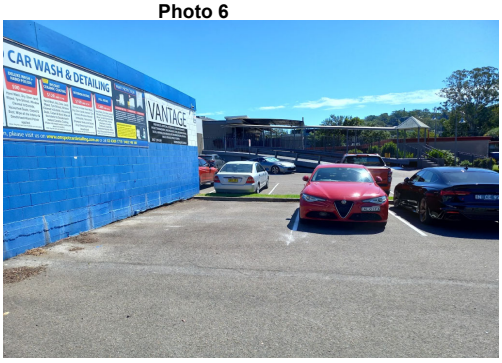
Photo 4

View of Elanora hotel carpark
Looking East
Inspected 31.03.2023

Photo 5

View of access road east side of elanora hotel
Looking South West
Inspected 31.03.2023

Photo 6



View of Elanora hotel carpark next to carwash.
Looking North West
Inspected 31.03.2023

APPENDIX D: DPI (OFFICE OF WATER) DATABASE RECORDS

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WaterNSW
Work Summary

GW201093

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 13/04/2011
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller: E Grima

Property:
GWMA:
GW Zone:
Standing Water Level (m): 2.400
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	1//124027
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298935.000
Easting: 346910.000
Latitude: 33°26'17.0"S
Longitude: 151°21'11.2"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	125			Auger - Solid Flight
1		Annulus	Cement Grout	0.00	0.50	125	60		PL:Poured/Shovelled
1		Annulus	Bentonite	0.50	3.00	125	60		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	3.00	6.00	125	60		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	3.50	60	50		Seated on Bottom, Screwed
1	1	Opening	Slots - Horizontal	3.50	6.00	60		0	Mechanically Slotted, PVC Class 18, Screwed, SL: 30.0mm, A: 5.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
2.40	6.00	3.60	Unknown	2.40					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	3.00	3.00	Clay; light brown to brown	Clay	
3.00	4.20	1.20	Sand; grey, fine grained, slightly clayey	Sand	
4.20	6.00	1.80	Sand; grey & brown, fine grained, dense, slightly clayey	Sand	

Remarks

13/04/2011: Form A Remarks:
Nat Carling, 12-Dec-2011: Coordinates based on location map provided with the Form-A.

***** End of GW201093 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW201094

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 13/04/2011
Final Depth: 7.50 m
Drilled Depth: 7.50 m

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller: E Grima

Property:
GWMA:
GW Zone:
Standing Water Level (m): 1.800
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	1//124027
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298915.000
Easting: 346925.000
Latitude: 33°26'17.7"S
Longitude: 151°21'11.7"E

GS Map: -
MGA Zone: 56
Coordinate Source: GPS - Global

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	7.50	125			Auger - Solid Flight
1		Annulus	Cement Grout	0.00	0.50	125	60		PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.50	2.50	125	60		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	2.50	7.50	125	60		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	3.00	60	50		Seated on Bottom, Screwed
1	1	Opening	Slots - Horizontal	3.00	7.50	60		0	Mechanically Slotted, PVC Class 18, Screwed, SL: 30.0mm, A: 5.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.80	7.50	5.70	Unknown	1.80					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	2.50	2.50	Clayey Sand; light brown to brown	Clayey Sand	
2.50	3.60	1.10	Sand; grey, with brown mottling, fine to coarse grained, slightly clayey	Sand	
3.60	4.10	0.50	Silt, Sandy; grey, laminated, firm to stiff, slightly sandy	Silt	
4.10	7.50	3.40	Sand; light grey, fine grained, dense, slightly clayey	Sand	

Remarks

13/04/2011: Form A Remarks:
Nat Carling, 12-Dec-2011: Coordinates based on location map provided with the Form-A.

***** End of GW201094 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW201095

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 13/04/2011
Final Depth: 9.00 m
Drilled Depth: 9.00 m

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller: E Grima

Property:
GWMA:
GW Zone:
Standing Water Level (m): 2.700
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	1//124027
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298955.000
Easting: 346930.000
Latitude: 33°26'16.4"S
Longitude: 151°21'12.0"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	9.00	125			Auger - Solid Flight
1		Annulus	Waterworn/Rounded	0.00	0.50	125	60		Graded, PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.50	4.50	125	60		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	4.50	9.00	125	60		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	5.00	60	50		Seated on Bottom, Screwed
1	1	Opening	Slots - Horizontal	5.00	9.00	60		0	Mechanically Slotted, PVC Class 18, Screwed, SL: 30.0mm, A: 5.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
4.20	9.00	4.80	Unknown	2.70					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	4.80	4.80	Clayey Sand; light brown to brown	Clayey Sand	
4.80	9.00	4.20	Silt, Sandy; light grey, medium plasticity, firm to stiff, fine grained Sand	Silt	

Remarks

13/04/2011: Form A Remarks:
Nat Carling, 12-Dec-2011: Coordinates based on location map provided with the Form-A.

***** End of GW201095 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW201096

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 13/04/2011
Final Depth: 9.00 m
Drilled Depth: 9.00 m

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller: E Grima

Property:
GWMA:
GW Zone:
Standing Water Level (m): 2.750
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	1//124027
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298930.000
Easting: 346945.000
Latitude: 33°26'17.2"S
Longitude: 151°21'12.5"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	9.00	125			Auger - Solid Flight
1		Annulus	Cement Grout	0.00	0.50	125	60		PL:Poured/Shovelled
1		Annulus	Bentonite	0.50	4.50	125	60		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	4.50	9.00	125	60		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	5.00	60	50		Seated on Bottom, Screwed
1	1	Opening	Slots - Horizontal	5.00	9.00	60		0	Mechanically Slotted, PVC Class 18, Screwed, SL: 30.0mm, A: 5.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
4.60	9.00	4.40	Unknown	2.75					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	3.00	3.00	Gravel, Sandy; light brown, gravel fine to medium grained, well graded, angular to subangular, moist, sand is medium gra	Gravel	
3.00	4.00	1.00	Sandy Gravel; ligth brown, contains cobbles of sandstone	Sandy Clay	
4.00	9.00	5.00	Sandstone; friable, weathered layer	Sandstone	

Remarks

13/04/2011: Form A Remarks:
Nat Carling, 12-Dec-2011: Coordinates based on location map provided with the Form-A.

***** End of GW201096 *****

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WaterNSW
Work Summary

GW201097

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 15/04/2011
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller: W Gartside

Property:
GWMA:
GW Zone:
Standing Water Level (m): 2.200
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	//36668
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298935.000
Easting: 346845.000
Latitude: 33°26'17.0"S
Longitude: 151°21'08.6"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	125			Auger - Solid Flight
1		Annulus	Cement Grout	0.00	0.50	125	60		PL:Poured/Shovelled
1		Annulus	Bentonite	0.50	1.50	125	60		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	1.50	6.00	125	60		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	2.00	60	50		Seated on Bottom, Screwed
1	1	Opening	Slots - Horizontal	2.00	6.00	60		0	Mechanically Slotted, PVC Class 18, Screwed, SL: 30.0mm, A: 5.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
2.50	6.00	3.50	Unknown	2.20					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	0.20	0.20	Clay, Gravelly; brown, slightly sandy, frequent rootlets	Clay	
0.20	1.10	0.90	Clay, Gravelly; brown gravel is angular to subangular, fine to coarse grained of concrete, slightly sandy	Clay	
1.10	1.30	0.20	Clayey Sand; light grye, very clayey	Clayey Sand	
1.30	6.00	4.70	Sandy Clay; light grey & brown, sand is fine grained, clay is mottled with brown from 4.5m	Sandy Clay	

Remarks

15/04/2011: Form A Remarks:
Nat Carling, 12-Dec-2011: Coordinates based on location map provided with the Form-A.

***** End of GW201097 *****

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WaterNSW
Work Summary

GW201098

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 15/04/2011
Final Depth: 6.00 m
Drilled Depth: 6.00 m

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller: W Gartside

Property:
GWMA:
GW Zone:
Standing Water Level (m): 2.300
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	//36668
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298900.000
Easting: 346870.000
Latitude: 33°26'18.1"S
Longitude: 151°21'09.6"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	6.00	125			Auger - Solid Flight
1		Annulus	Cement Grout	0.00	0.50	125	60		PL:Poured/Shovelled
1		Annulus	Bentonite	0.50	1.50	125	60		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	1.50	6.00	125	60		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	2.00	60	50		Seated on Bottom, Screwed
1	1	Opening	Slots - Horizontal	2.00	6.00	60		0	Mechanically Slotted, PVC Class 18, Screwed, SL: 30.0mm, A: 5.00mm

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.10	0.10	Fill; Concrete driveway	Fill	
0.10	0.29	0.19	Gravel, Clayey Sandy; brown & black gravel, sand & clay brown, dense	Gravel	
0.29	0.85	0.56	Clay, Sandy Gravelly; grey, fine to stiff, gravel is angular to subangular, fine to coarse grained of concrete or sandst	Clay	

0.85	6.00	5.15	Sandy Clay; ligth brown, with red brown mottling, very sandy, soft	Sandy Clay	

Remarks

15/04/2011: Form A Remarks:
Nat Carling, 12-Dec-2011: Coordinates based on location map provided with the Form-A.

***** End of GW201098 *****

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WaterNSW
Work Summary

GW201099

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 15/04/2011
Final Depth: 7.50 m
Drilled Depth: 7.50 m

Contractor Name: Macquarie Drilling
Driller: Douglas Stephen Miller
Assistant Driller: W Gartside

Property:
GWMA:
GW Zone:
Standing Water Level (m): 2.200
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	//36668
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298920.000
Easting: 346895.000
Latitude: 33°26'17.5"S
Longitude: 151°21'10.6"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	7.50	125			Auger - Solid Flight
1		Annulus	Cement Grout	0.00	0.50	125	60		PL:Poured/Shovelled
1		Annulus	Bentonite	0.50	3.00	125	60		PL:Poured/Shovelled
1		Annulus	Waterworn/Rounded	3.00	7.50	125	60		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	3.50	60	50		Seated on Bottom, Screwed
1	1	Opening	Slots - Horizontal	3.50	7.50	60		0	Mechanically Slotted, PVC Class 18, Screwed, SL: 30.0mm, A: 5.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
5.50	7.50	2.00	Unknown	2.20					

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	0.10	0.10	Fill; Concrete drive way	Fill	
0.10	1.40	1.30	Clay, Gravelly; brown, gravel is angular to subangular, fine to coarse grained, slightly sandy	Clay	
1.40	2.30	0.90	Sandy Clay; brown, soft	Sandy Clay	
2.30	2.60	0.30	Clay; grey brown, fine to stiff, slightly sandy	Clay	
2.60	3.10	0.50	Sandy Clay; red, dense, very sandy	Sandy Clay	
3.10	4.20	1.10	Clay; grey, with brown mottling, firm to stiff, slightly sandy	Clay	
4.20	5.50	1.30	Sandy Clay; light grey & white, moist, very sandy	Sandy Clay	
5.50	7.50	2.00	Clayey Sand; dark brown, slightly clayey	Clayey Sand	

Remarks

15/04/2011: Form A Remarks:
Nat Carling, 12-Dec-2011: Coordinates based on location map provided with the Form-A.

***** End of GW201099 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW202600

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger
Owner Type: Private

Commenced Date:
Completion Date: 17/10/2011
Final Depth: 4.00 m
Drilled Depth: 4.00 m

Contractor Name: Numac
Driller: Dean Ryan
Assistant Driller: Dean Ryan

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	RD ADJ 72//520344
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298916.000
Easting: 346828.000
Latitude: 33°26'17.6"S
Longitude: 151°21'08.0"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	1.20	50			Auger
1		Hole	Hole	1.20	4.00	50			Auger - Solid Flight
1		Annulus	Cement	0.00	0.30	50	50		PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.30	0.50	50	50		PL:Poured/Shovelled
1		Annulus	Crushed Aggregate	0.50	4.00	50	50		Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	-0.30	1.00	50	40		Cemented, Screwed
1	1	Opening	Slots - Horizontal	1.00	4.00	50		0	Mechanically Slotted, PVC Class 18, Screwed

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.20	3.00	1.80	Unknown						

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	0.10	0.10	Fill; road base	Fill	
0.10	0.30	0.20	Sand, silty; soft, fine grained, with some gravels, dark brown	Sand	
0.30	0.40	0.10	Sand, silty; soft, fine grained, angular gravels, dark brown	Sand	
0.40	0.70	0.30	Sand, silty; soft, fine grained, light brown	Sand	
0.70	4.00	3.30	Sand, silty; coarse to fine grained, angular to subangular gravels of sandstone, grey-brown	Sand	

Remarks

17/10/2011: Form A Remarks:
Nat Carling, 6-Feb-2013; Coordinates based on location map provided with the Form-A's.

***** End of GW202600 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW202601

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger
Owner Type: Private

Commenced Date:
Completion Date: 17/10/2011
Final Depth: 4.00 m
Drilled Depth: 4.00 m

Contractor Name: Numac Drilling Services
Driller: Dean Ryan
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	RD ADJ 8//91177
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298944.000
Easting: 346831.000
Latitude: 33°26'16.7"S
Longitude: 151°21'08.1"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	1.40	50			Auger
1		Hole	Hole	1.40	4.00	50			Auger - Solid Flight
1		Annulus	Cement	0.00	0.30	50			PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.30	0.50	50			PL:Poured/Shovelled
1		Annulus	Crushed Aggregate	0.50	4.00	50			Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	0.00	1.00	50	40		Cemented, Screwed
1	1	Opening	Slots - Horizontal	1.00	4.00	50		0	Mechanically Slotted, PVC Class 18, Screwed

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.00	3.00	2.00	Unknown						

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	0.10	0.10	Sand, Clayey; with grass of surface, brown	Sand	
0.10	0.30	0.20	Sand, Clayey; with subangular to subrounded, fine to coarse gravels of sandstone, brown, wood & metal fragments, rootlet	Sand	
0.30	0.90	0.60	Sand, Clayey; fine grained, light brown, moist	Sand	
0.90	1.40	0.50	Sand, Silty; fine grained, grey, wet	Sand	
1.40	4.00	2.60	Silt, Sandy; soft, fineg rained, grey, wet	Silt	

Remarks

17/10/2011: Form A Remarks:
Nat Carling, 6-Feb-2013; Coordinates based on location map provided with the Form-A's.

***** End of GW202601 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW202602

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger
Owner Type: Private

Commenced Date:
Completion Date: 17/10/2011
Final Depth: 4.00 m
Drilled Depth: 4.00 m

Contractor Name: Numac Drilling Services
Driller: Dean Ryan
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	RD ADJ 8//91177
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298957.000
Easting: 346822.000
Latitude: 33°26'16.3"S
Longitude: 151°21'07.8"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	1.60	50			Auger
1		Hole	Hole	1.60	4.00	50			Auger - Solid Flight
1		Annulus	Cement	0.00	0.30	50			PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.30	0.50	50			PL:Poured/Shovelled
1		Annulus	Crushed Aggregate	0.50	4.00	50			Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	-0.35	1.00	50	40		Cemented, Screwed
1	1	Opening	Slots - Horizontal	1.00	4.00	50		0	Mechanically Slotted, PVC Class 18, Screwed

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.10	3.00	1.90	Unknown						

Remarks

17/10/2011: Form A Remarks:
Nat Carling, 6-Feb-2013; Coordinates based on location map provided with the Form-A's. Annulus details based on other monitoring bores construction. No consultants log was provided.

***** End of GW202602 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW202603

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger
Owner Type: Private

Commenced Date:
Completion Date: 17/10/2011
Final Depth: 4.00 m
Drilled Depth: 4.00 m

Contractor Name: Numac Drilling Services
Driller: Dean Ryan
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	RD ADJ 2//592559
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298969.000
Easting: 346789.000
Latitude: 33°26'15.9"S
Longitude: 151°21'06.5"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	1.20	50			Auger
1		Hole	Hole	1.20	4.00	50			Auger - Solid Flight
1		Annulus	Cement	0.00	0.30	50			PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.30	0.50	50			PL:Poured/Shovelled
1		Annulus	Crushed Aggregate	0.50	4.00	50			Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	-0.37	1.00	50	40		Cemented, Screwed
1	1	Opening	Slots - Horizontal	1.00	4.00	50		0	Mechanically Slotted, PVC Class 18, Screwed

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.00	3.00	2.00	Unknown						

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	0.30	0.30	Sand, slightly sand, slightly gravelly; gravels subangular-subrounded, fine to mediumg grain of sandstone, light brown m	Sand	
0.30	1.00	0.70	Sand, silty; fine grained, light brown, some root structures	Sand	
1.00	3.00	2.00	Silt, Sandy; fine grained sand, soft, light brown	Silt	
3.00	4.00	1.00	Silt, Sandy; fine grained sand, soft, grey mottled brown, wet	Silt	

Remarks

17/10/2011: Form A Remarks:
Nat Carling, 6-Feb-2013; Coordinates based on location map provided with the Form-A's.

***** End of GW202603 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW202604

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger
Owner Type: Private

Commenced Date:
Completion Date: 17/10/2011
Final Depth: 4.00 m
Drilled Depth: 4.00 m

Contractor Name: Numac Drilling Services
Driller: Dean Ryan
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	RD ADJ 2//592559
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298976.000
Easting: 346776.000
Latitude: 33°26'15.6"S
Longitude: 151°21'06.0"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	1.50	50			Auger
1		Hole	Hole	1.50	4.00	50			Auger - Solid Flight
1		Annulus	Cement	0.00	0.30	50			PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.30	0.50	50			PL:Poured/Shovelled
1		Annulus	Crushed Aggregate	0.50	4.00	50			Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	-0.30	1.00	50	40		Cemented, Screwed
1	1	Opening	Slots - Horizontal	1.00	4.00	50		0	Mechanically Slotted, PVC Class 18, Screwed

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
3.00	4.00	1.00	Unknown						

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments

0.00	0.15	0.15	Silt, Sandy; topsoil, soft, brown, frequent roots, moderate to high organic content	Silt	
0.15	0.90	0.75	Silt, Sandy; soft, light brown, reduced organic content	Silt	
0.90	2.80	1.90	Silt, Sandy; fine grained sands, brown-grey	Silt	
2.80	4.00	1.20	Silt, Sandy; fine grained sands, hard, brown-grey, wet from 3m	Silt	

Remarks

17/10/2011: Form A Remarks:
Nat Carling, 6-Feb-2013; Coordinates based on location map provided with the Form-A's.

***** End of GW202604 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW202605

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 09/07/2012
Final Depth: 7.00 m
Drilled Depth: 7.00 m

Contractor Name: ABILITY PLUS
Driller: Geoff Trippett
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 3.500
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	1//124027
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298923.000
Easting: 346913.000
Latitude: 33°26'17.4"S
Longitude: 151°21'11.3"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	7.00	150			Auger - Solid Flight
1		Annulus	Drill Cuttings	0.00	3.00	150			PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	3.00	3.50	50			PL:Poured/Shovelled
1		Annulus	Crushed Aggregate	3.50	7.00	50			Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	-0.63	7.00	50	40		Cemented, Screwed
1	1	Opening	Slots - Horizontal	4.00	7.00	50		0	Mechanically Slotted, PVC Class 9, Screwed

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	2.80	2.80	Fill; Sand, coarse grained, white/red, moist, odourless, increasing silt content with depth	Fill	
2.80	5.00	2.20	Sand, Silty; coarse grained, red, moist	Sand	
5.00	6.00	1.00	Sandstone, Silty; weathered, grey with iron fibres, moist becoming wet	Sandstone	
6.00	7.00	1.00	Sandstone; weathered, coarse, grey, becoming rock, wet, odourless	Sandstone	

Remarks

09/07/2012: Form A Remarks:
Nat Carling, 6-Feb-2013; Coordinates based on location map provided with the Form-A's.

***** End of GW202605 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW202606

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 05/07/2012
Final Depth: 8.20 m
Drilled Depth: 7.40 m

Contractor Name: ABILITY PLUS
Driller: Geoff Trippett
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 3.500
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	1//124027
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298934.000
Easting: 346921.000
Latitude: 33°26'17.1"S
Longitude: 151°21'11.6"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	8.20	150			Auger - Solid Flight
1		Annulus	Drill Cuttings	0.00	0.10	150			PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.10	4.40	50			PL:Poured/Shovelled
1		Annulus	Crushed Aggregate	4.40	7.40	50			Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	-0.90	5.00	50	40		Cemented, Screwed
1	1	Opening	Slots - Horizontal	5.20	8.20	50		0	Mechanically Slotted, PVC Class 9, Screwed

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	3.50	3.50	Fill; Clayey sand/rippsed sandstone (imported VENM backfill), red brown/light brown, moist to wet	Fill	
3.50	7.40	3.90	Sand/Sandstone; fine grained, grey/red, weathered bedrock, with silt & traces of clay	Sand	

Remarks

05/07/2012: Form A Remarks:
Nat Carling, 6-Feb-2013; Coordinates based on location map provided with the Form-A's.

***** End of GW202606 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW
Work Summary

GW202607

Licence:
Licence Status:

Authorised Purpose(s):
Intended Purpose(s): MONITORING BORE

Work Type: Bore
Work Status: Equipped
Construct.Method: Auger - Solid
Owner Type: Private

Commenced Date:
Completion Date: 05/07/2012
Final Depth: 8.20 m
Drilled Depth: 8.20 m

Contractor Name: ABILITY PLUS
Driller: Geoff Trippett
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 3.500
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	NORTHUMBERLAND	GOSFO	1//124027
Licensed:			

Region: 20 - Hunter
River Basin: 211 - MACQUARIE - TUGGERAH LAKES
Area/District:
CMA Map: 9131-2S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6298945.000
Easting: 346925.000
Latitude: 33°26'16.7"S
Longitude: 151°21'11.8"E

GS Map: -
MGA Zone: 56
Coordinate Source: GIS - Geogra

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	8.20	150			Auger - Solid Flight
1		Annulus	Drill Cuttings	0.00	0.20	150			PL:Poured/Shovelled
1		Annulus	Bentonite/Grout	0.20	5.20	150			PL:Poured/Shovelled
1		Annulus	Crushed Aggregate	5.20	8.20	150			Graded, PL:Poured/Shovelled
1	1	Casing	Pvc Class 18	-0.70	7.40	50	40		Cemented, Screwed
1	1	Opening	Slots - Horizontal	4.40	7.30	50		0	Mechanically Slotted, PVC Class 9, Screwed

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	3.50	3.50	Fill; Clayey sand/rippsed sandstone, light brown to brown, moist	Fill	
3.50	8.20	4.70	Sand/Sandstone; fine grained, grey/red, weathered bedrock, with silt & traces of clay	Sand	

Remarks

05/07/2012: Form A Remarks:
Nat Carling, 6-Feb-2013; Coordinates based on location map provided with the Form-A's.

***** End of GW202607 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

APPENDIX E: BUREAU OF METEOROLOGY

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Monthly Rainfall (millimetres)

GOSFORD AWS

Station Number: 061425 · State: NSW · Opened: 2013 · Status: Open · Latitude: 33.44°S · Longitude: 151.36°E · Elevation: 7 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2013						*194.8*	*14.6*	*15.4*	*29.6*	*44.8*	*189.0*	*17.8*	
2014	*22.0*	*175.0*	*113.6*	*138.6*	*21.8*	*91.0*	*16.4*	*226.4*	*50.0*	*88.2*	*34.2*	*90.2*	*1067.4*
2015	*248.6*	*93.4*	*95.2*	*462.6*	*180.8*	*100.6*	*26.2*	*28.0*	*109.4*	*36.4*	*171.2*	122.0	*1674.4*
2016	*305.0*	*24.4*	*150.4*	*58.8*	*11.0*	*299.2*	*104.6*	*140.6*	*68.8*	*39.8*	*44.0*	*58.4*	*1305.0*
2017	*35.6*	*152.4*	*399.2*	*113.4*	*36.0*		*7.8*	*10.6*	*2.4*	*79.2*	*78.0*	61.8	
2018	*26.6*	*163.2*	*102.8*	*73.0*	*17.8*	*213.6*	*12.0*	17.6	58.2	*258.0*			
2019	*57.0*	*109.0*	*256.4*	40.2	*17.6*	*161.2*	*46.0*	*212.6*	112.6	*49.8*	*21.8*	*3.0*	*1087.2*
2020	125.6		*180.4*	*39.8*	50.2	*56.4*	171.6	*51.2*	*50.2*	*253.2*	*36.2*	*197.6*	
2021	*119.6*	*91.4*	*467.6*	*41.4*	*81.4*	*67.6*	*44.8*	72.2	46.2	*55.6*	*190.2*	*150.6*	*1428.6*
2022	*116.0*		*579.0*	*225.2*	*129.8*	*14.0*	448.8	*30.2*	149.4	*160.6*	*25.2*	49.0	
2023	*88.0*	173.4	*74.6*										

Quality control: 12.3 Done & acceptable, *12.3* Not completed or unknown

Australian Government
Bureau of Meteorology

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Monthly Rainfall (millimetres)

GOSFORD AWS

Station Number: 061425 · State: NSW · Opened: 2013 · Status: Open · Latitude: 33.44°S · Longitude: 151.36°E · Elevation: 7 m

Statistics for this station calculated over all years of data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Lowest	22.0	24.4	74.6	39.8	11.0	14.0	7.8	10.6	2.4	36.4	21.8	3.0	1067.4
Highest	305.0	175.0	579.0	462.6	180.8	299.2	448.8	226.4	149.4	258.0	190.2	197.6	1674.4

1) Calculation of statistics

Summary statistics, other than the Highest and Lowest values, are only calculated if there are at least 20 years of data available.

2) Gaps and missing data

Gaps may be caused by a damaged instrument, a temporary change to the site operation, or due to the absence or illness of an observer.

3) Further information

http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml.

Australian Government
Bureau of Meteorology

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APPENDIX F: PROPOSED DEVELPOMENT PLANS

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TSS TOTAL SURVEYING SOLUTIONS

LANE COVE | CAMDEN | MANLY VALE | CENTRAL COAST

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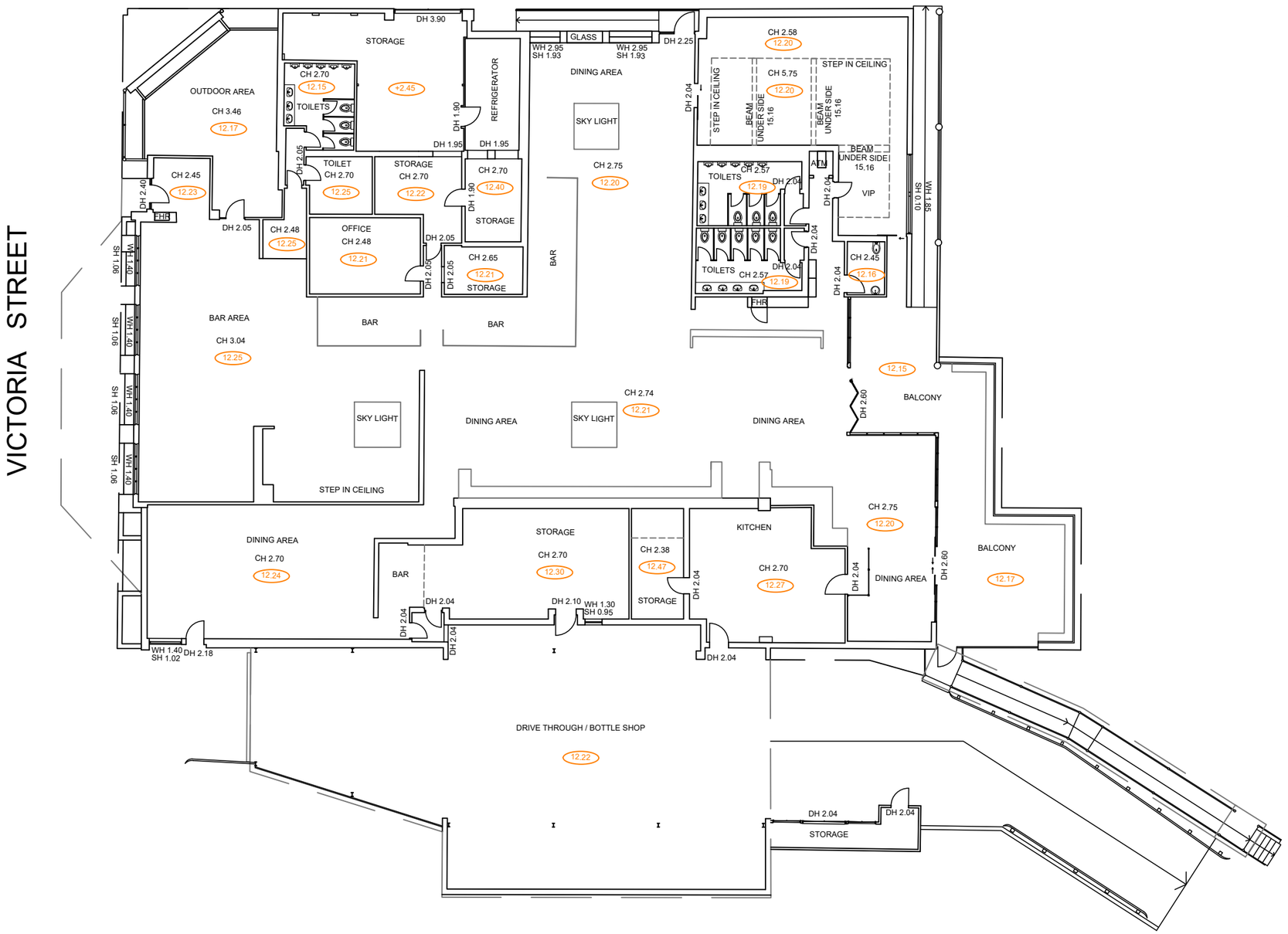
PLAN SHOWING DETAIL & LEVELS UNDERGROUND

CLIENT:	Bonython Property & Investments Pty Limited
PROJECT:	Elanora Hotel
ADDRESS:	41 Victoria St, East Gosford NSW 2250

JOB No.: 190897	LGA: CITY OF GOSFORD
PLAN No.: 9000	DATUM: AHD
DATE: 17/10/2022	SCALE: 1:250@A3
DRAWN: EJ	CONT. INTERVAL: N/A
CHK: JS	SHEET 1 OF 4



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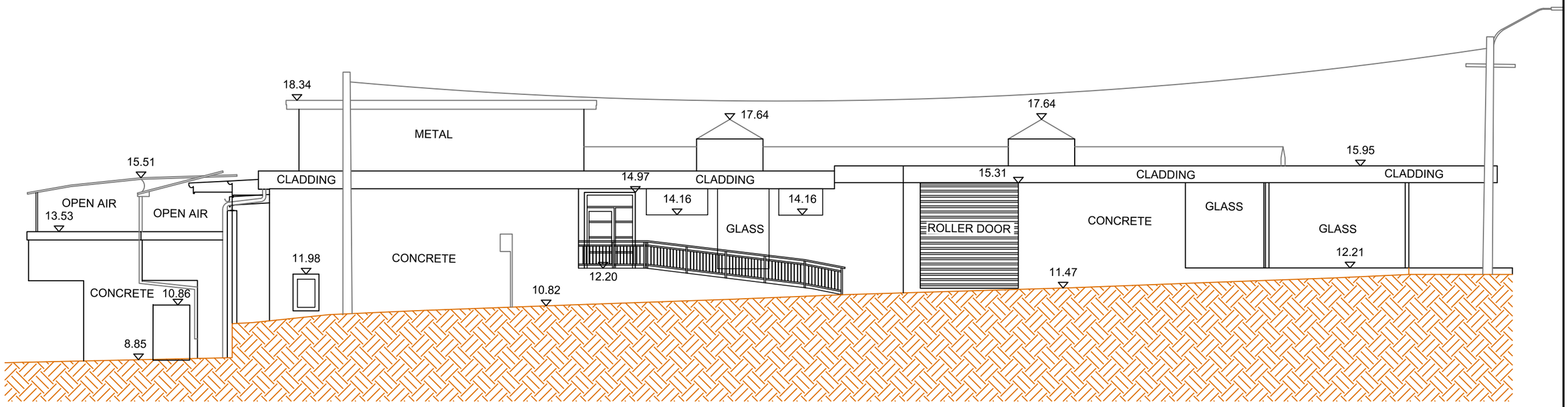
PLAN SHOWING DETAIL & LEVELS GROUND

CLIENT:	Bonython Property & Investments Pty Limited	JOB No.: 190897	LGA: CITY OF GOSFORD
PROJECT:	Elanora Hotel	PLAN No.: 9001	DATUM: AHD
ADDRESS:	41 Victoria St, East Gosford NSW 2250	DATE: 17/10/2022	SCALE: 1:250@A3
		DRAWN: EJ	CONT. INTERVAL: N/A
		CHK: JS	SHEET 2 OF 4



TSS TOTAL SURVEYING SOLUTIONS

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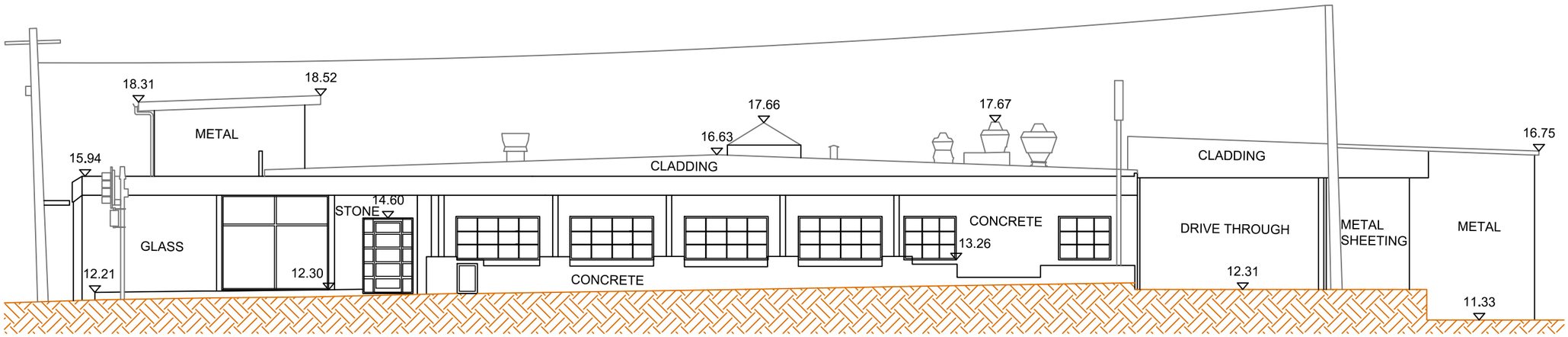
ELEVATION SHOWING DETAIL & LEVELS
ADELAIDE STREET VIEW

CLIENT:	Bonython Property & Investments Pty Limited
PROJECT:	Elanora Hotel
ADDRESS:	41 Victoria St, East Gosford NSW 2250

JOB No.: 190897	LGA: CITY OF GOSFORD
PLAN No.: 9002	DATUM: AHD
DATE: 17/10/2022	SCALE: 1:150@A3
DRAWN: EJ	CONT. INTERVAL: N/A
CHK: JS	SHEET 3 OF 4



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ELEVATION SHOWING DETAIL & LEVELS VICTORIA STREET VIEW

CLIENT:	Bonython Property & Investments Pty Limited	JOB No.: 190897	LGA: CITY OF GOSFORD
PROJECT:	Elanora Hotel	PLAN No.: 9003	DATUM: AHD
ADDRESS:	41 Victoria St, East Gosford NSW 2250	DATE: 17/10/2022	SCALE: 1:150@A3
		DRAWN: EJ	CONT. INTERVAL: N/A
		CHK: JS	SHEET 4 OF 4

SCALE: 1:200 @ A1 SHEET

STEPHEN THORNE AND ASSOCIATES

TSS Total Surveying Solutions Pty Ltd
3/127 ERINA STREET, COSFORD, 2250
Phone (02)4323-1255 Email tssurvey@bigpond.net.au
P.O. BOX 1315 GOSFORD NSW 2250
A.C.N. 603 458 546 A.B.N. 53 603 458 546

DETAIL AND CONTOUR SURVEY OVER
LOT 15 DP 1061216 & 7A DP 365458
No. 41–45 VICTORIA STREET, EAST GOSFORD

ORIGIN OF LEVELS PM 19194 RL=11.932 AHD

SCALE OF METRES 1:200

DATUM: Australian Height Datum	DATE
	31/05/2019

amendments	PLAN NUMBER	ISSUE
	19089/7	A

SHEET 1 OF 1 SHEETS

CAD FILE: 19089/7_DETAIL.dwg
THIS PLOT: 05-06-2019 10:43
REFERENCE: 19089/7.000

CAUTIONS:

1) THIS SURVEY HAS BEEN PREPARED FOR THE PURPOSE OF DETAIL & CONTOUR ONLY. THE LOCATION OF ANY FENCING OR STRUCTURE IN RELATION TO THE BOUNDARIES HAS NOT NECESSARILY BEEN EXACTLY DETERMINED.
2) UTILITY SERVICES SHOWN HAVE BEEN LOCATED BY SURVEY WHERE THEY ARE VISIBLE AND APPARENT. HOWEVER , THE APPROXIMATE POSITION OF UNDERGROUND SERVICES FROM "DIAL BEFORE YOU DIG". (PHONE 1100) PRIOR TO DESIGN/CONSTRUCTION WORKS.
3) THE LOCATION OF SERVICES ARE TO BE VERIFIED BY OBTAINING CURRENT INFORMATION BE READ IN CONJUNCTION WITH THE RELEVANT UTILITY AUTHORITY PLANS.
MAY HAVE ALSO BEEN PLOTTED FROM UTILITY AUTHORITY PLANS, AND THIS PLAN MUST ALTERNATIVELY, THE EXACT LOCATION OF SERVICES SHOULD BE DETERMINED BY FIELD SURVEY IN CONSULTATION WITH THE SERVICE AUTHORITIES WHERE DEEMED NECESSARY.

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

STATION 618 NAIL IN PATH
EASTING 347071236
NORTHING 6298820.016
LEVEL RL= 13.07 AHD

STATION 617 NAIL IN PATH
EASTING 347045.614
NORTHING 6298854.472
LEVEL RL= 12.486 AHD

STATION 3 BOLT
EASTING 347025.360
NORTHING 6298883.618
LEVEL RL= 11905 AHD

STATION 6 NAIL IN PATH
EASTING 347062.473
NORTHING 6298909.687
LEVEL RL= 10.140 AHD

STATION 2 SSM 98633
EASTING 347120.142
NORTHING 6298950.510
LEVEL RL= 6.937 AHD

STATION 4 DRILL HOLE IN PATH
EASTING 347160.868
NORTHING 6298894.096
LEVEL RL= 6.560 AHD

STATION 5 DRILL HOLE IN CONC
EASTING 347115.993
NORTHING 6298872.553
LEVEL RL= 8.808 AHD

KEY

- DENOTES COUNCIL WATER MAIN
- DENOTES COUNCIL SEWER MAIN
- DENOTES GAS MAIN
- DENOTES TELSTRA CABLES
- DENOTES AERIAL ELECTRICAL CABLES (SCALED LOCATION ONLY)
- DENOTES GAS MAIN VALVES
- DENOTES HYDRANT
- DENOTES STOP VALVE
- DENOTES POWER POLE
- DENOTES NBN & TELSTRA PITS
- DENOTES COUNCIL SEWER MANHOLES
- DENOTES WATER SERVICE VALVE

(A) – EXISTING RIGHT OF WAY, 3.0m WIDE (SEE DP 1016073)
(B) – EXISTING RIGHT OF WAY, 2.0m WIDE (SEE DP 1016073)
NOTE: THE RIGHT OF WAY SHOWN AS (B) IS LIMITED IN HEIGHT TO A LOWER LIMIT OF RL 8.75 AHD AND AN UPPER LIMIT OF RL 11.45 AHD (SEE DP 1016073)

PROPOSED RIGHT OF ACCESS 6 WIDE & VAR. WIDTH
(BURDENS LOT 153 & BENEFITS LOT 151)

PROPOSED LOT 152 — 1097m²
PROPOSED LOT 152 — 1969m²
PROPOSED LOT 151 — 2758m²

EXISTING LOT 15 DP 1061216
ELANORA HOTEL No. 41 METAL ROOF
BRICK WORK SHOP METAL ROOF
EXISTING CAR PARK
EXISTING CAR PARK
EXISTING CAR PARK
VACANT AREA 504.7m²
ELANORA MOTEL METAL ROOF AREA 941.7m²
VACANT AREA 504.5m
VISHALS INDIAN RESTAURANT
THAI MASSAGE
MICHAELS
BOSE
EXISTING BOUNDARY DP 658304
EXISTING BOUNDARY DP 365458
EXISTING 1.8m WIDE DRAINAGE EASEMENT
PROPOSED B/DRY REALIGNMENT
CONCRETE DRIVEWAY
TWO STOREY BRICK UNITS (TOWN HOUSES)
BRICK FIRE STATION
COVERED DRIVE-THROUGH BOTTLE SHOP
29–31 VICTORIA ST
16 BROUGHAM ST
BROUGHAM STREET
VICTORIA STREET
ADELAIDE STREET
ELANORA ROAD
CENTRELINE ROAD
CENTRELINE
M.G.A.

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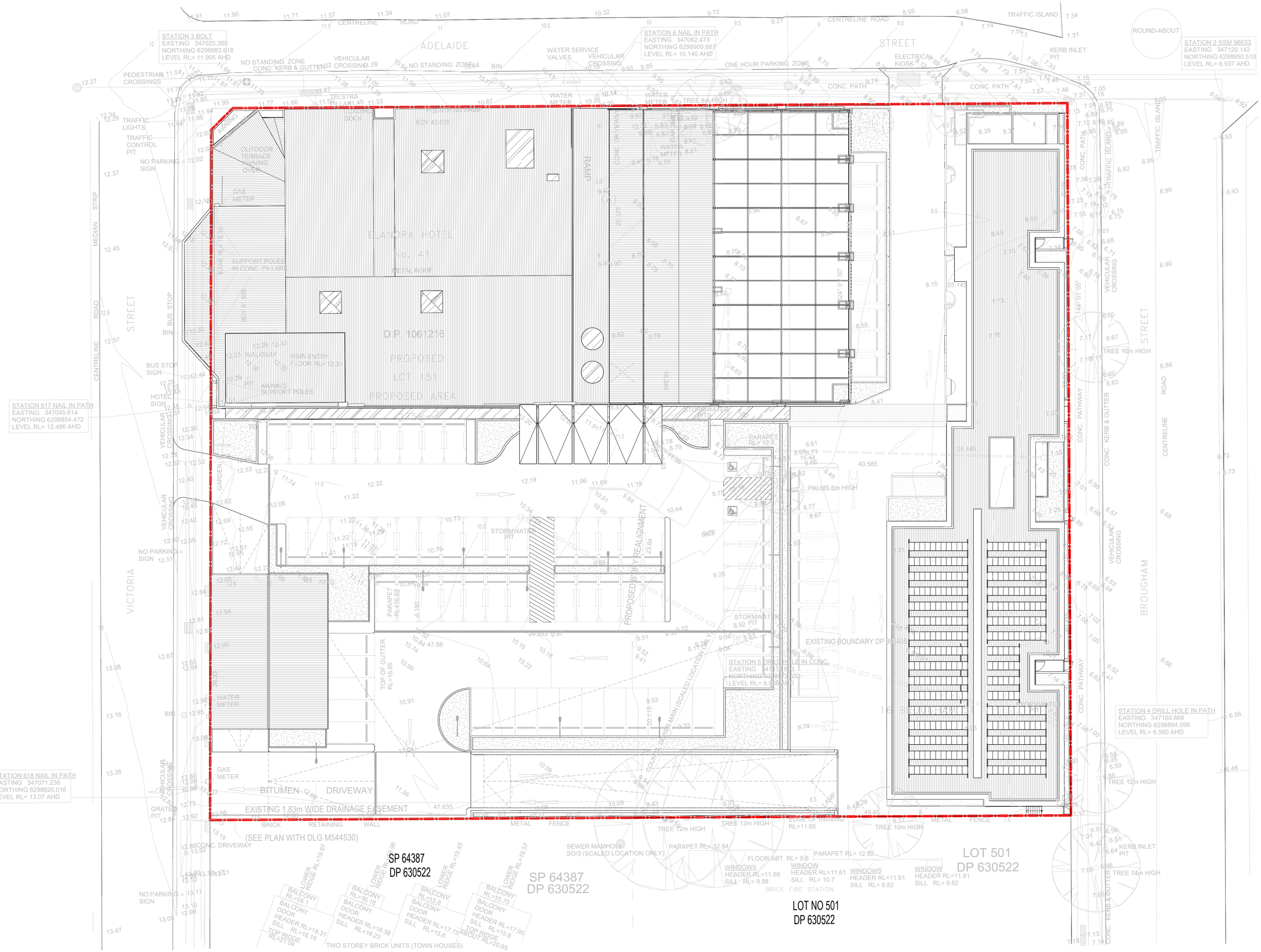
Elanora Hotel

Concepts

01.03.2023



1 SITE PLAN / SITE ANALYSIS
SCALE 1 : 200

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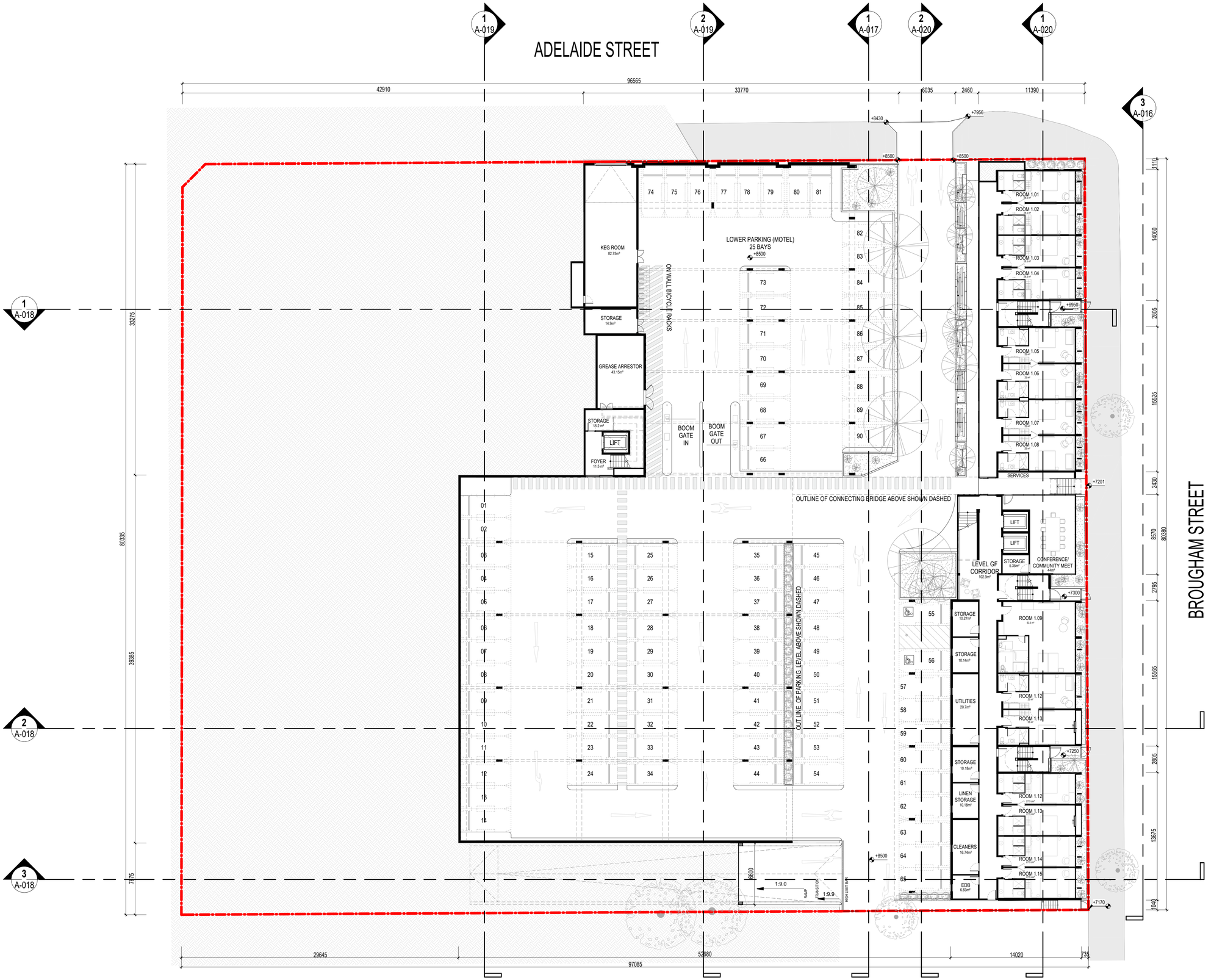
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SITE PLAN / SITE ANALYSIS
Scale @A1	1 : 200
Project No	22039
Drawing No	A-011
Revision	01



A LOWER GROUND FLOOR PLAN
SCALE 1 : 200

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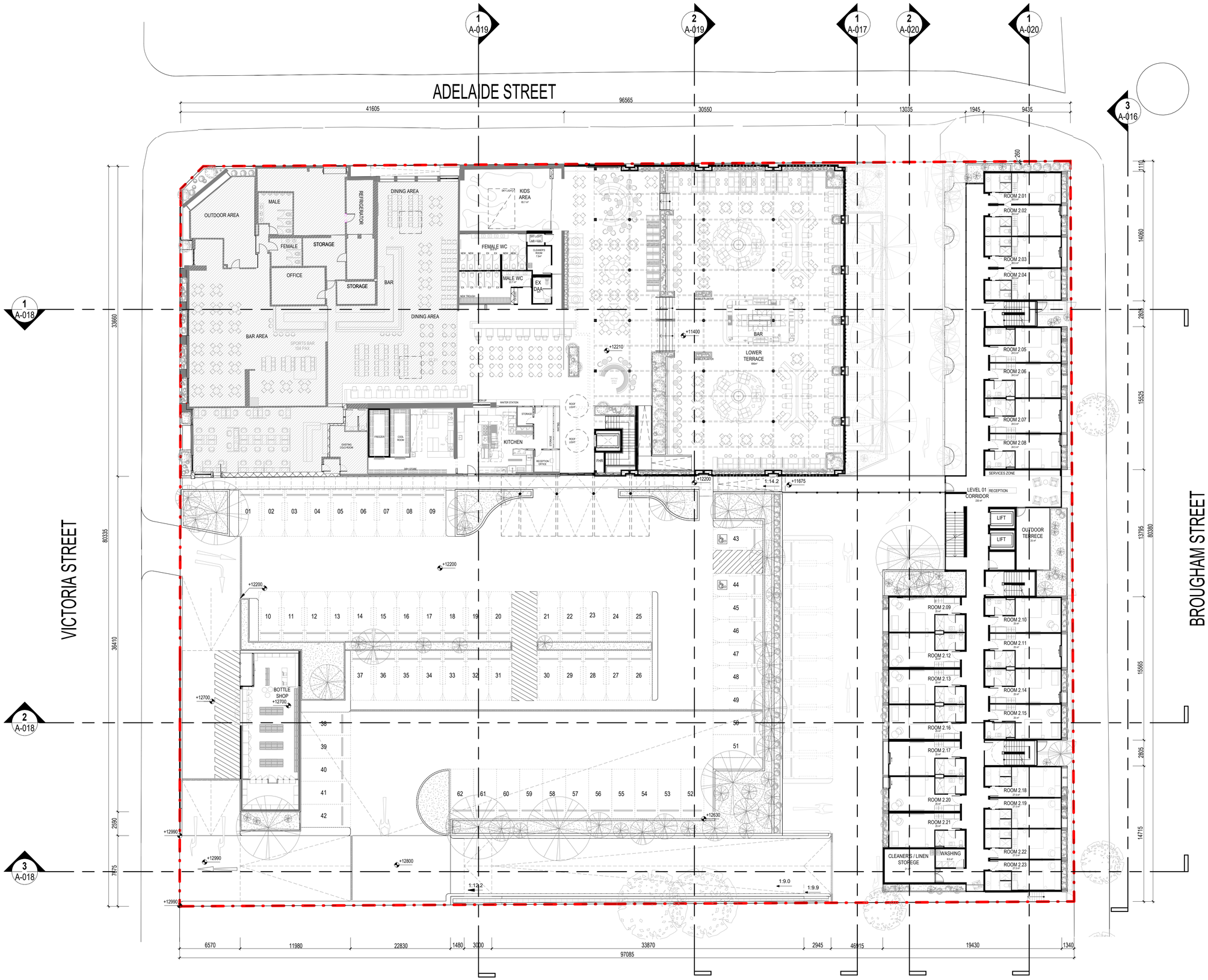
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	LOWER GROUND FLOOR PLAN
Scale @A1	1 : 200
Project No	22039
Drawing No	A-012
Revision	01



A GROUND FLOOR PLAN
SCALE 1 : 200

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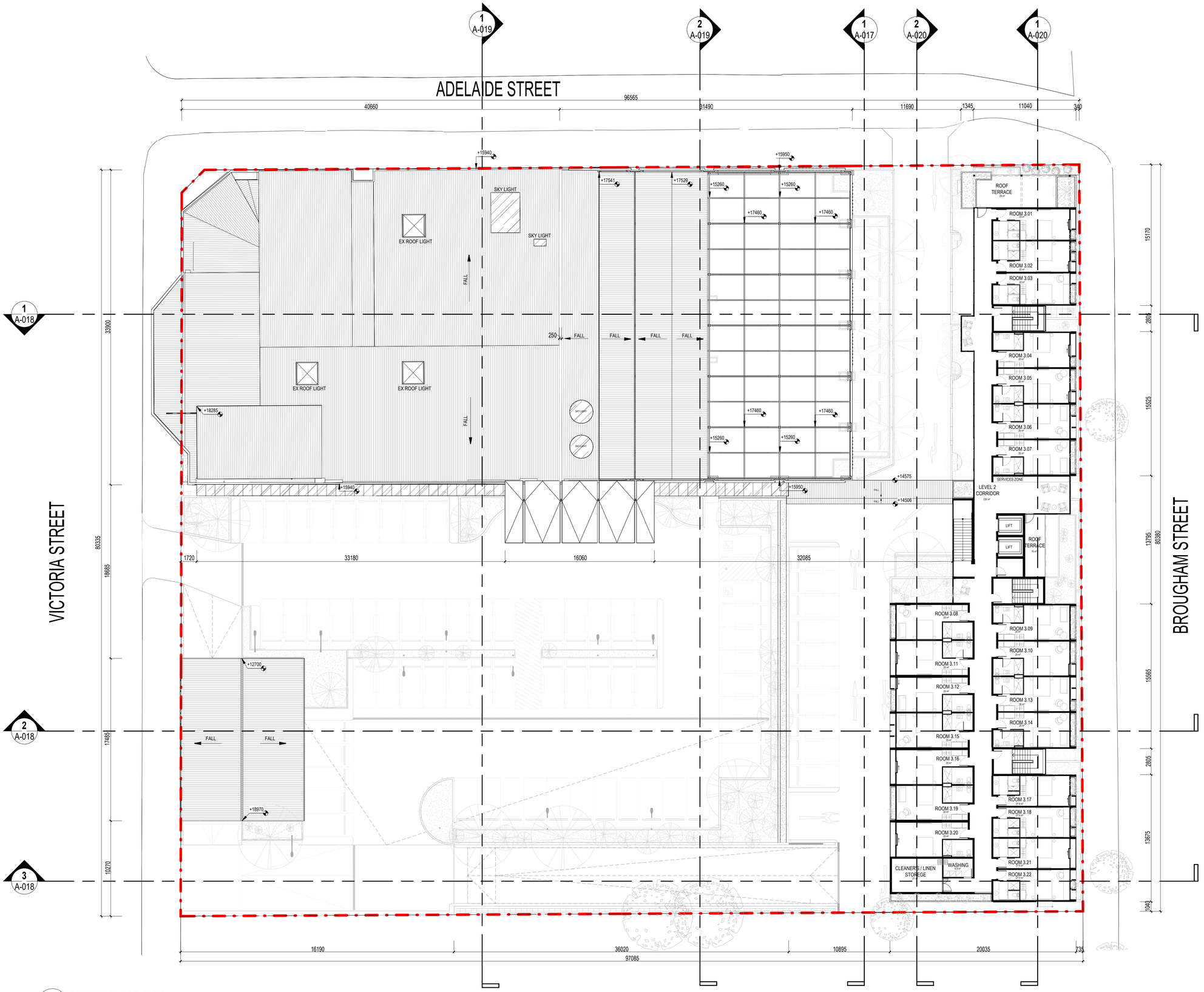
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	GROUND FLOOR PLAN
Scale @A1	1 : 200
Project No	22039
Drawing No	A-013
Revision	01



1 SECOND FLOOR PLAN
SCALE 1 : 200

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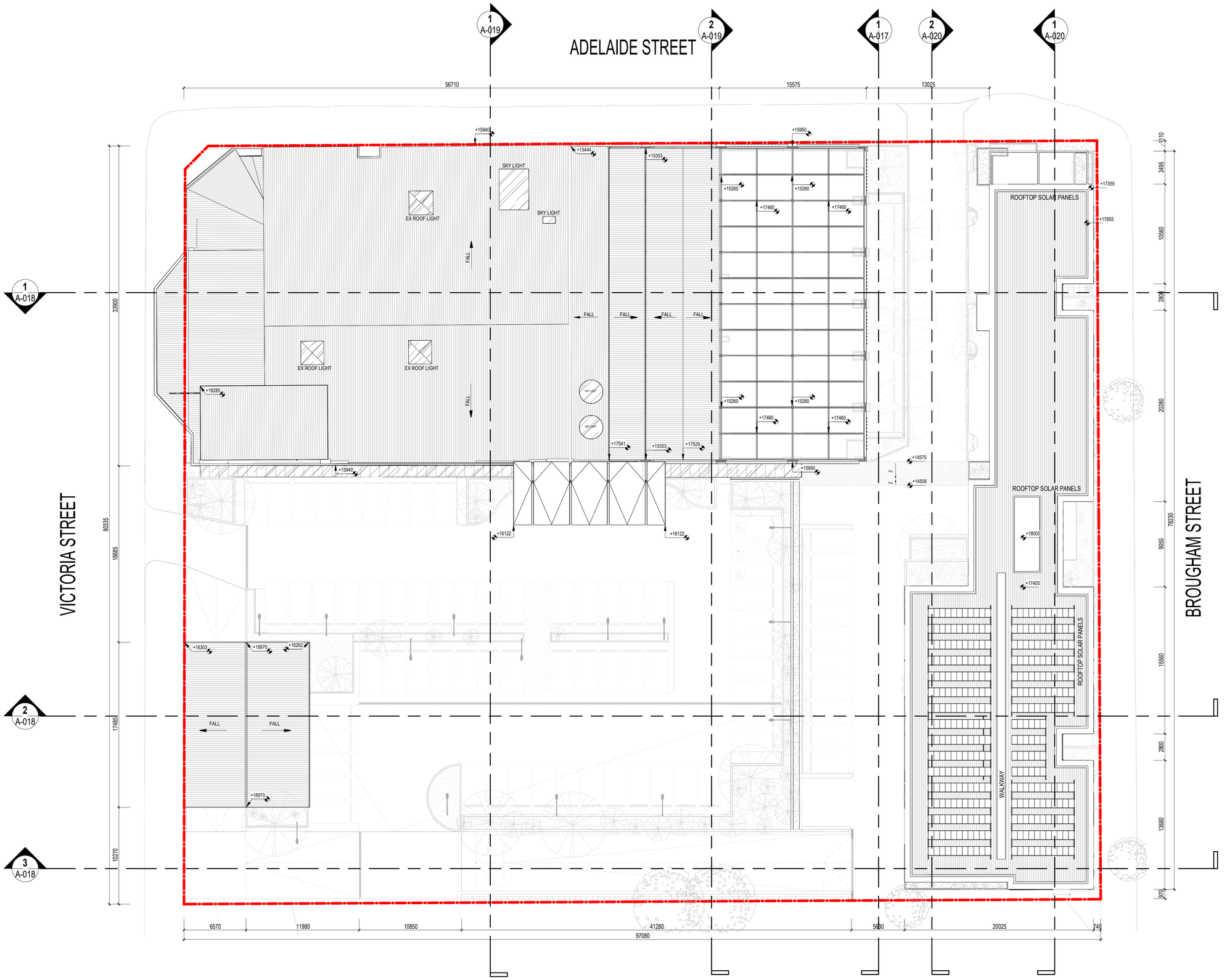
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SECOND FLOOR PLAN
Scale @A1	1 : 200
Project No	22039
Drawing No	A-014
Revision	01



A ROOF PLAN
SCALE 1 : 200

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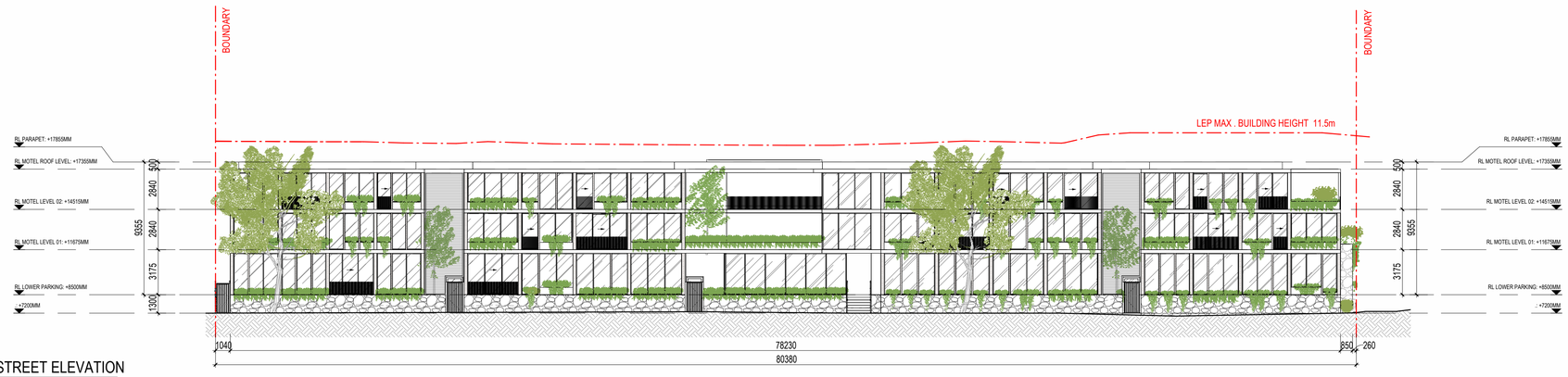
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	ROOF PLAN
Scale @A1	1 : 200
Project No	22039
Drawing No	A-015
Revision	01

1 VICTORIA STREET ELEVATION
SCALE 1 : 200

2 ADELAIDE STREET ELEVATION
SCALE 1 : 200



3 BROUGHAM STREET ELEVATION
SCALE 1 : 200

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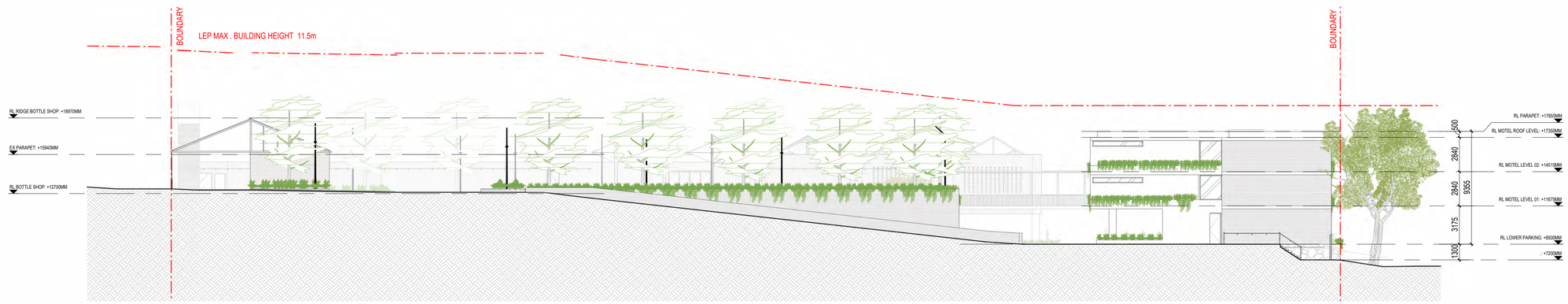
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	ELEVATION
Scale @A1	1 : 200
Project No	22039
Drawing No	A-016
Revision	01



2 STREET ELEVATION
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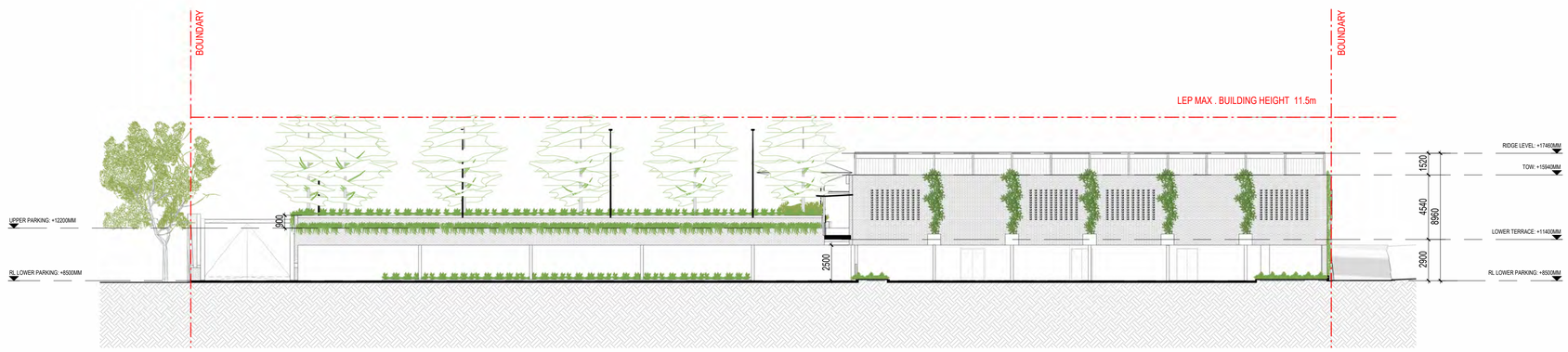

1 INSIDE BROUGHAM ELEVATION
SCALE 1 : 200

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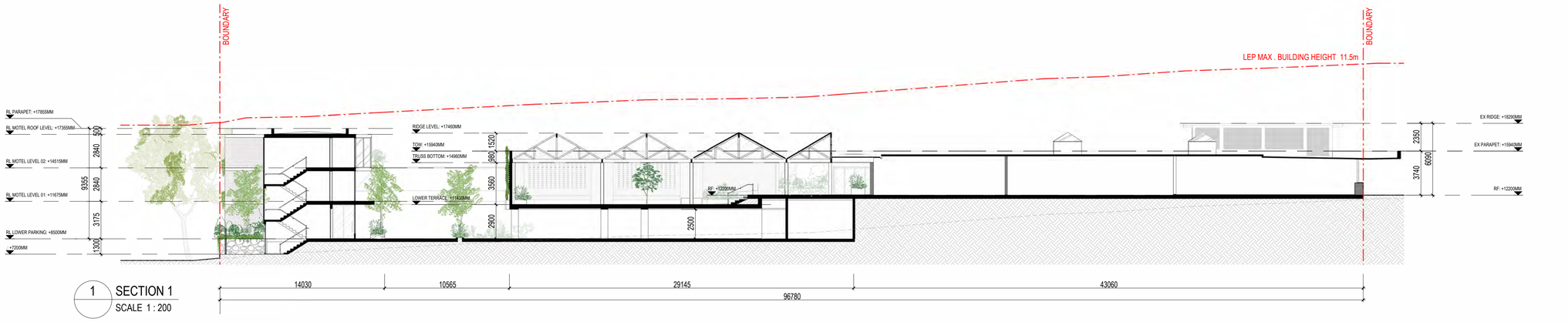
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	ELEVATION
Scale @A1	1 : 200
Project No	22039
Drawing No	A-017
Revision	01



1 SECTION 1
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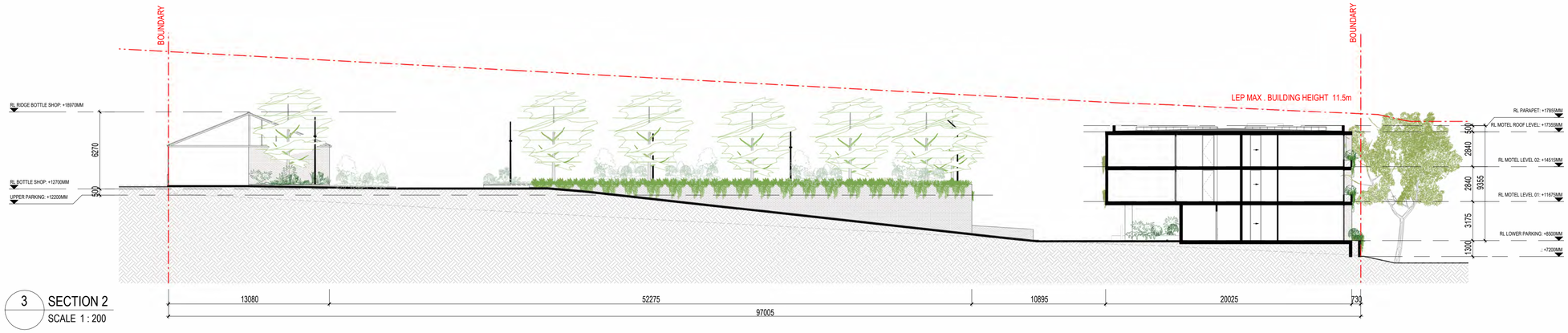
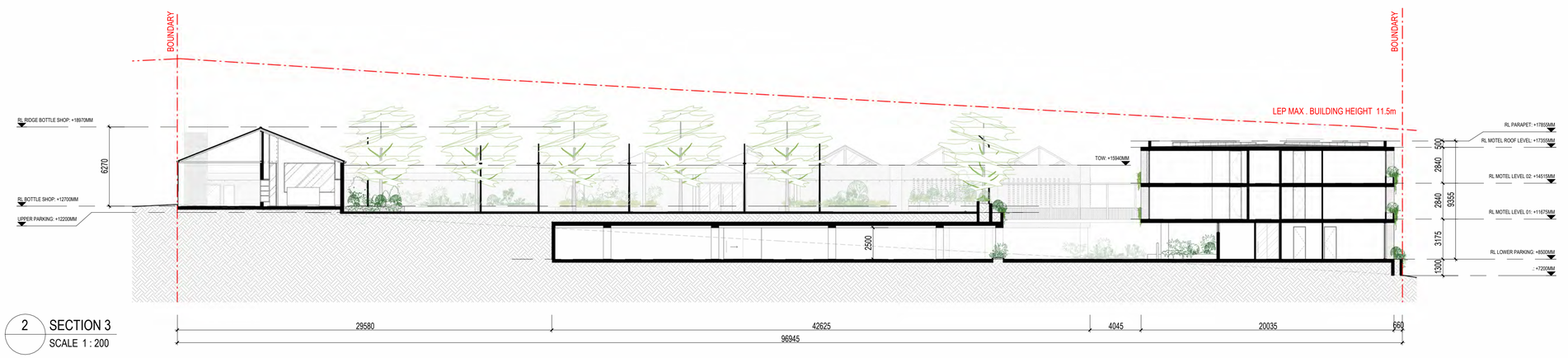


3 SECTION 2
SCALE 1 : 200



2 SECTION 3
SCALE 1 : 200

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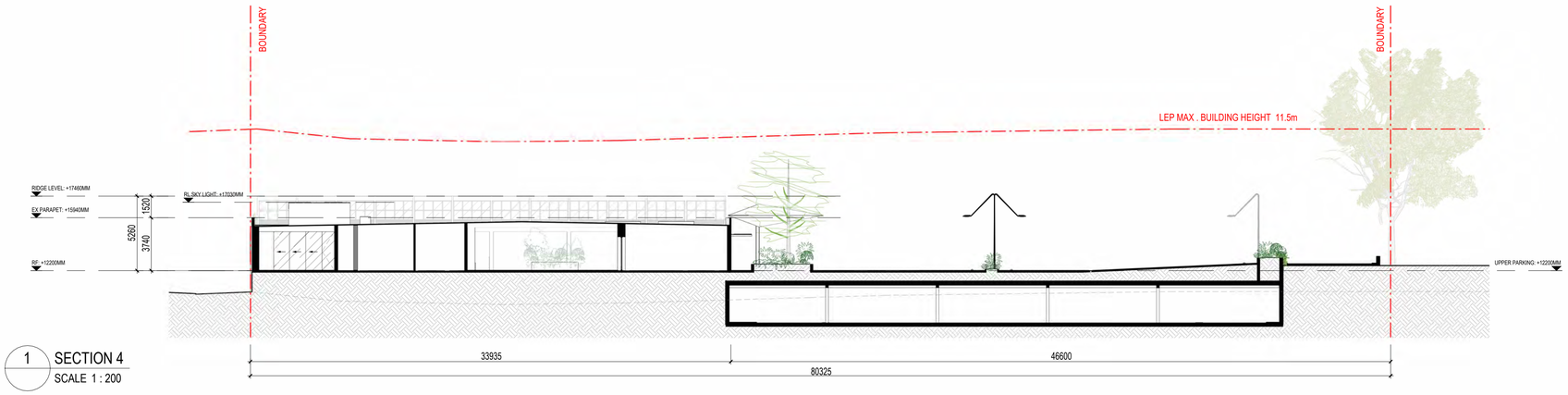
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SECTION
Scale @A1	1 : 200
Project No	22039
Drawing No	A-018
Revision	01



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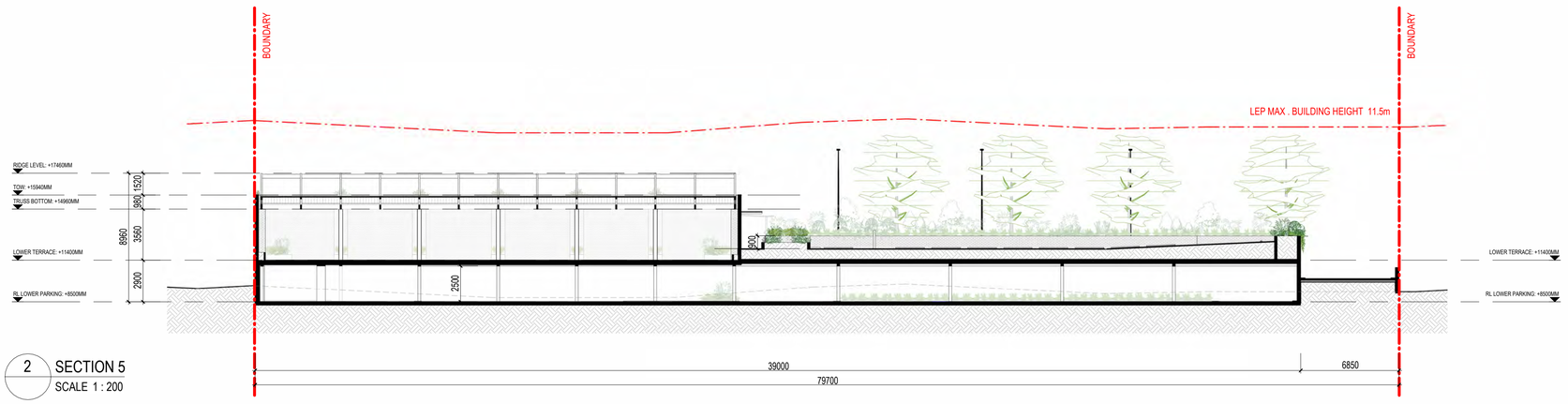

2 SECTION 5
SCALE 1 : 200

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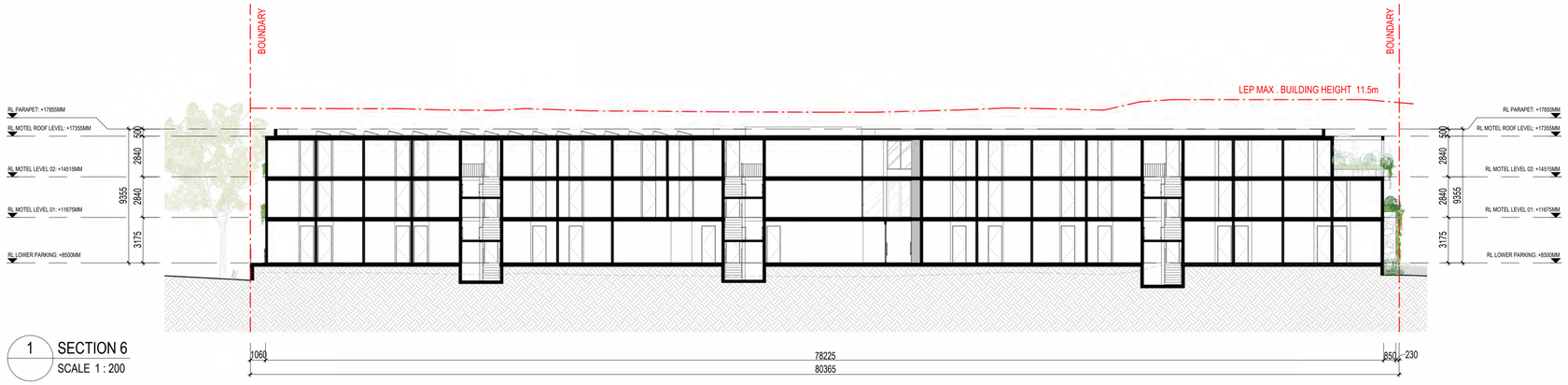
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SECTION 2
Scale @A1	1 : 200
Project No	22039
Drawing No	A-019
Revision	01



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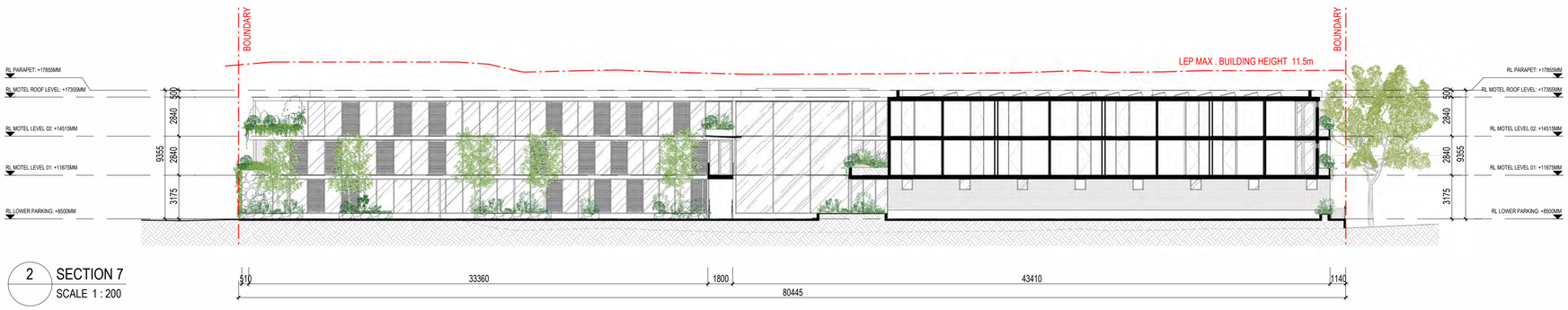

2 SECTION 7
SCALE 1 : 200

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Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SECTION 3
Scale @A1	1 : 200
Project No	22039
Drawing No	A-020
Revision	01

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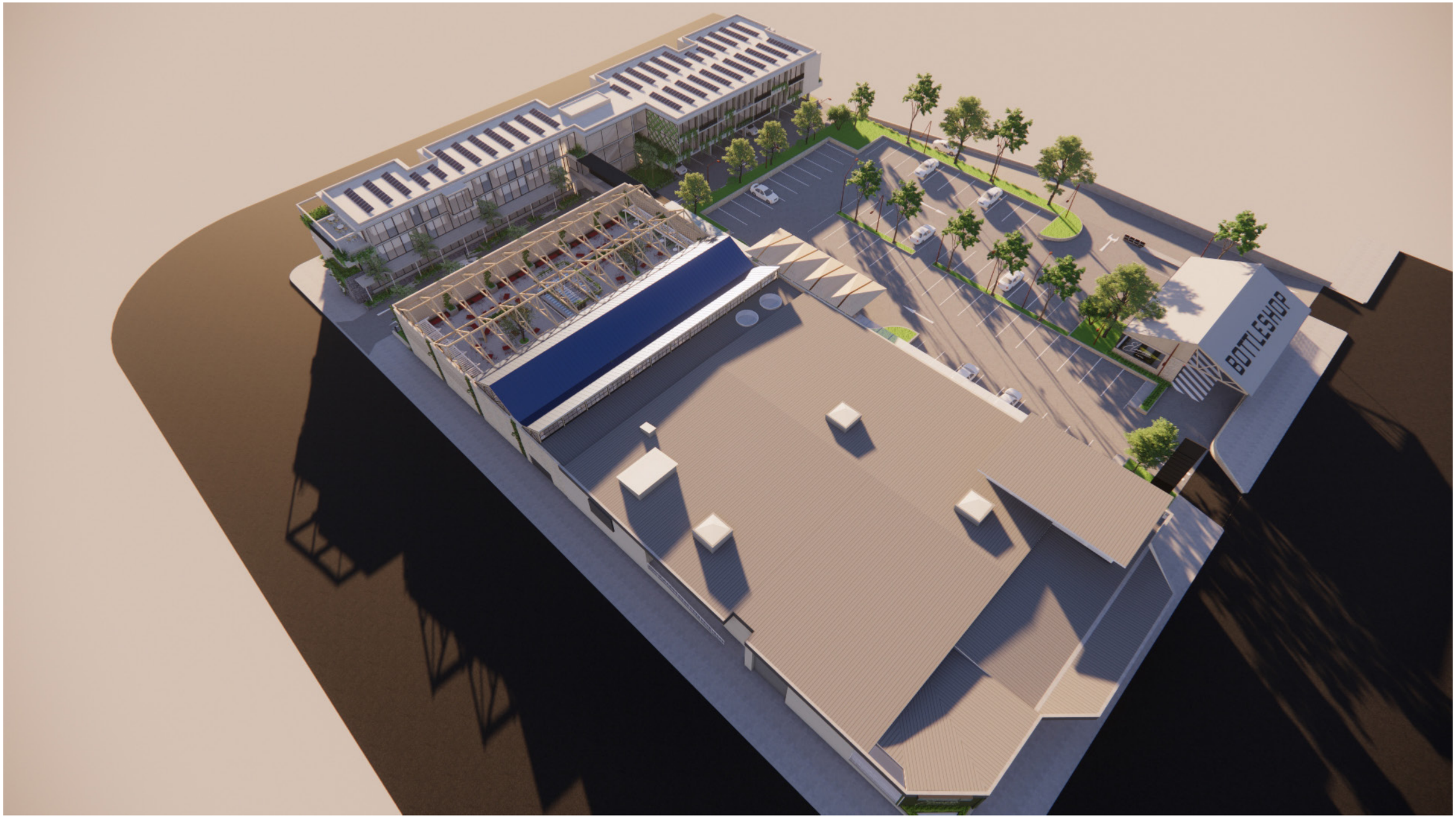
www.loopcreative.com.au

Concept

Concept



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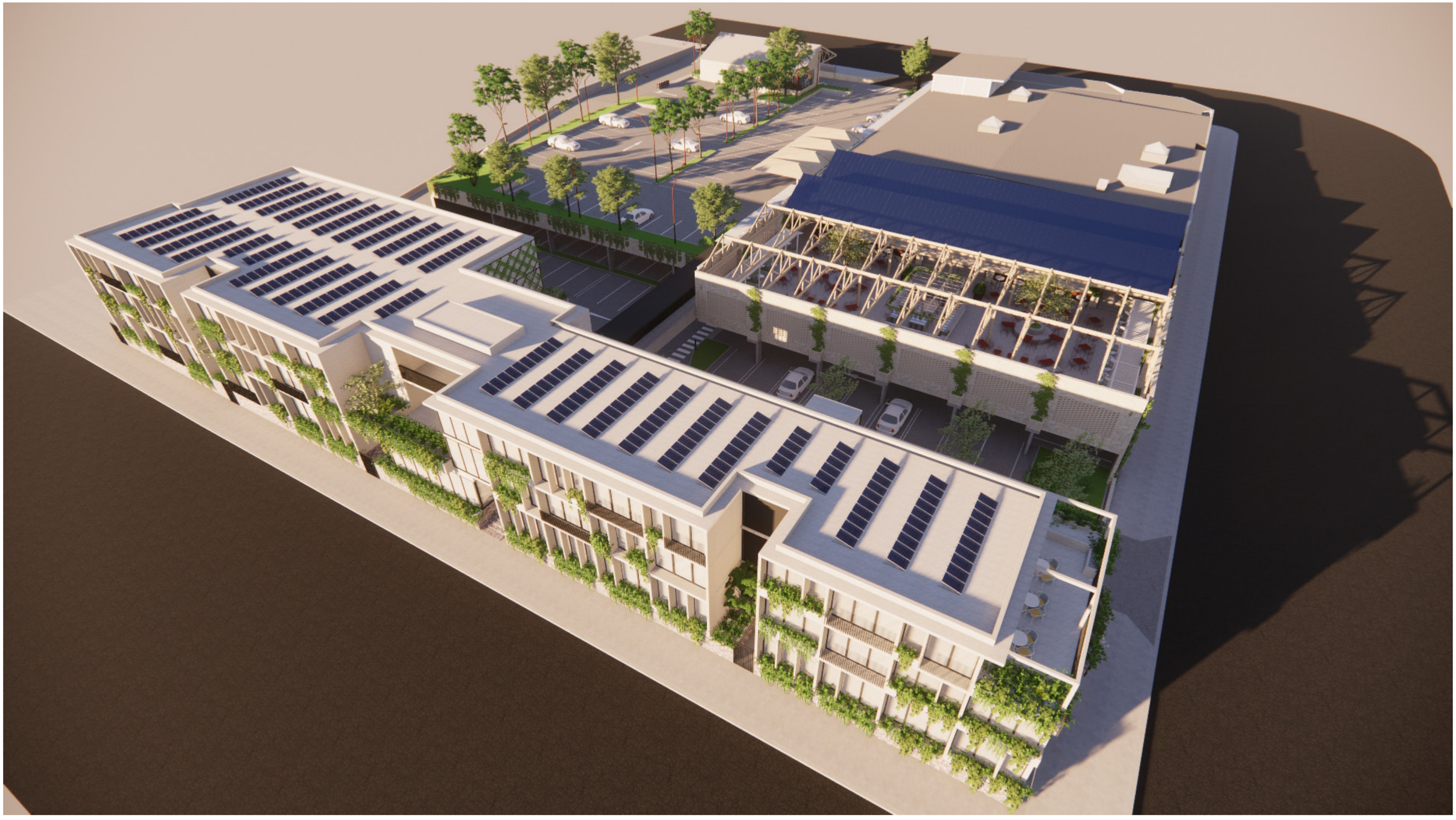

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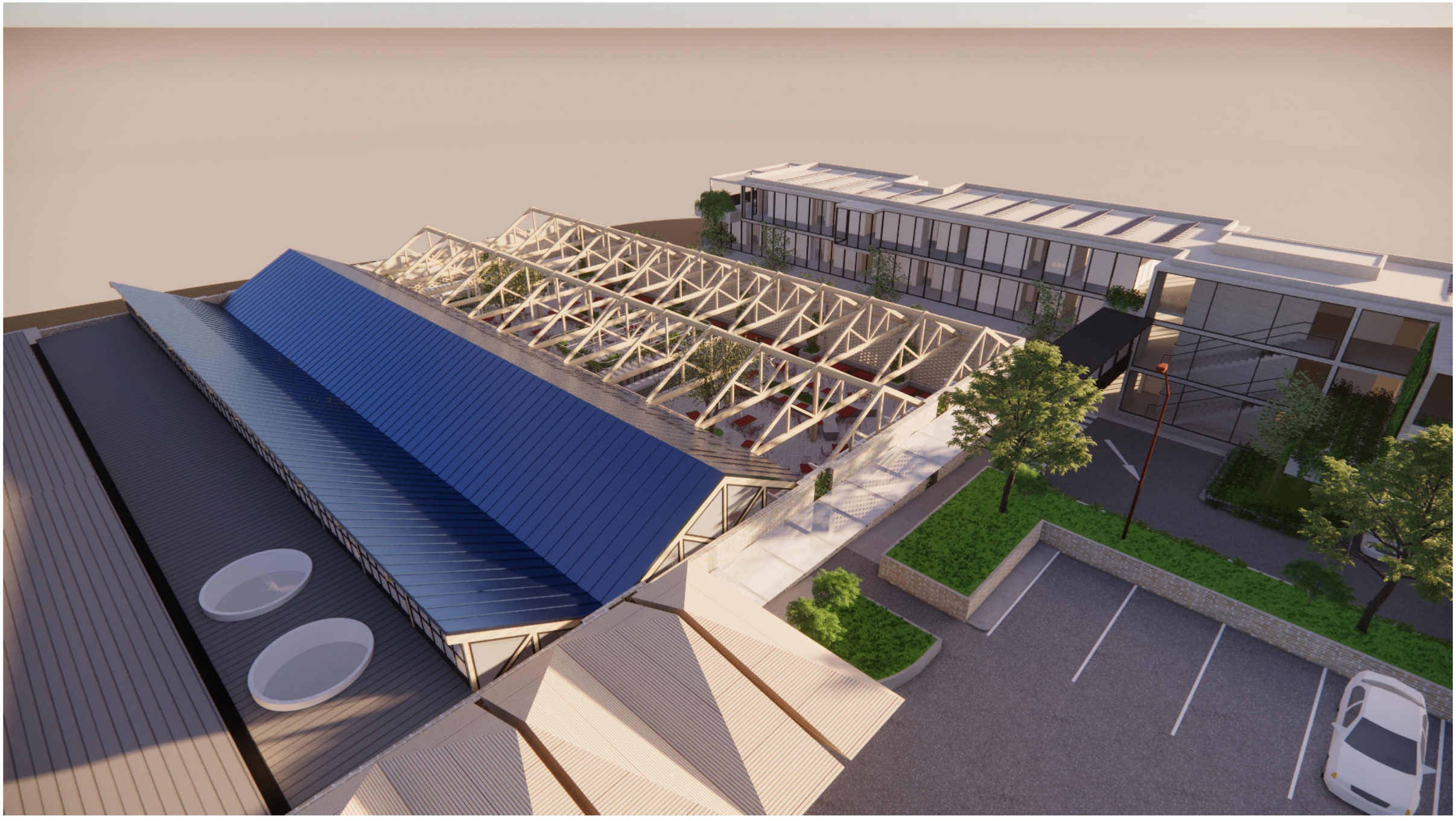

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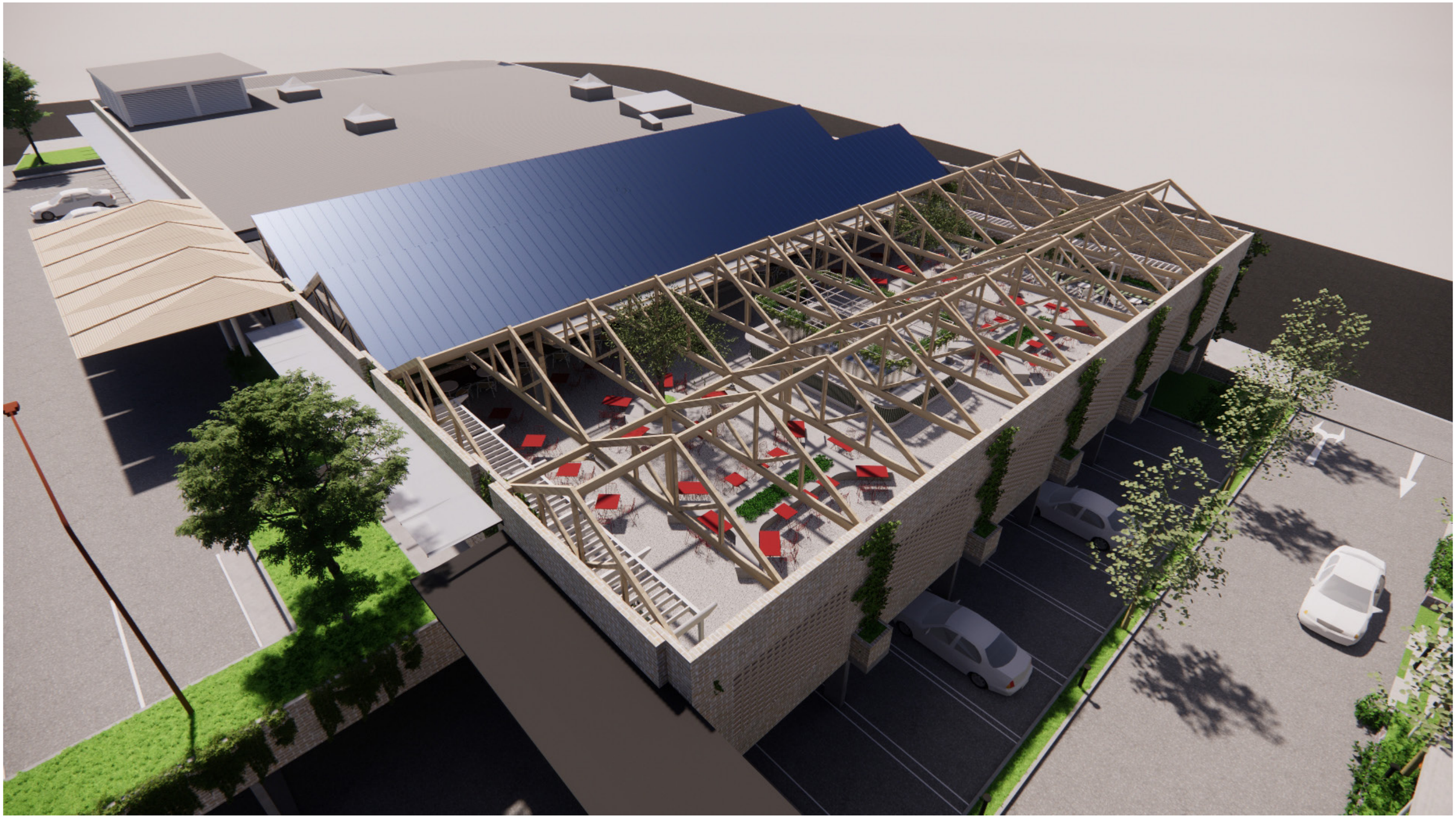

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Elanora Hotel

Concepts

01.03.2023

APPENDIX G: BOREHOLE LOGS

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH1/GW1

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT	Seepage ▼			0.05			Asphalt				No HC odours, staining or fibro fragments observed	
							Fill: Silty Clay, Low to medium plasticity, dark brown, with traces of fine grained sand	M		0.3-0.4	D1/SS1	0.5
				0.70		CL-CH	Silty CLAY, medium to high plasticity, yellow-orange-grey, with some fine grained sand	M			Seepage observed @0.7m 13.04.2023	
				1.0						0.9-1.0	No HC odours, staining or fibro fragments observed	1.0
				1.5								1.5
				2.0						1.9-2.0		2.0
	SWL observed @1.3m 17.04.2023 ▼			2.20		CL-CH	Silty CLAY, medium to high plasticity, yellow-orange-grey, with some fine grained sand	W			SWL observed @1.3m 17.04.2023	
				2.5								2.5
				3.0								3.0
				3.00		CL-CH	CLAY, medium to high plasticity, orange-red-grey	W			No HC odours, staining or fibro fragments observed	
				3.5								3.5
				4.0								4.0
				4.00			Borehole BH1/GW1 terminated at 4.00m					
				4.5								4.5
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH2/GW2

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT	SWL observed @1.05m 17.04.2023			0.05		CL-CH	Asphalt Silty CLAY, medium to high plasticity, brown, with some fine to coarse grained sand	M		0.2-0.3	No HC odours, staining or fibro fragments observed	
				0.30		CL-CH	Silty CLAY, medium plasticity, red, with some fine to coarse grained sand	D				0.5
				0.5								
				1.0						0.9-1.0	SWL observed @1.05m 17.04.2023	1.0
				1.5							No HC odours, staining or fibro fragments observed	1.5
				2.0								2.0
				2.00		CLS	Sandy CLAY, low plasticity, white	D				
				2.5								2.5
				3.0							No HC odours, staining or fibro fragments observed	3.0
				3.5								3.5
				3.50			Sandstone, red-white, Extremely weathered	D				
				4.0								4.0
				4.00			Borehole BH2/GW2 terminated at 4.00m					
				4.5								4.5
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH3/GW3

FOUNDATION EARTH SCIENCES

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT	SWL observed @1.7m 17.04.2023			0.5			Fill: Silty Sandy Clay, low to medium plasticity, dark brown, with vegetable matter	M		0.2-0.3	No HC odours, staining or fibro fragments observed D2/SS2	0.5
				0.60		CH	Silty CLAY, high plasticity, light brown-orange, with some fine to coarse grained sand	M		0.9-1.0	No HC odours, staining or fibro fragments observed	1.0
				1.20		CH	Silty CLAY, high plasticity, red, with some fine to coarse grained sand and sandstone rocks	M			SWL observed @1.7m 17.04.2023	1.5
				2.0								2.0
				2.5							No HC odours, staining or fibro fragments observed	2.5
				3.0								3.0
				3.5							No HC odours, staining or fibro fragments observed	3.5
				4.0								4.0
				4.5								4.5
				4.50			Borehole BH3/GW3 terminated at 4.50m					
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH4

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
						Concrete					
HA			0.10		CH	CLAY, high plasticity, orange-brown-grey, with traces of fine grained sand	M		0.1-0.2	No HC odours, staining or fibro fragments observed	
			0.30			Borehole BH4 terminated at 0.30m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH5

FOUNDATION EARTH SCIENCES

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, high plasticity, dark grey-brown, with some fine grained sand	W			No HC odours, staining or fibro fragments observed	
									0.1-0.2		
			0.5								0.5
									0.6-0.7		
			0.70			Light brown	W			No HC odours, staining or fibro fragments observed	
									0.8-0.9		
			1.0								1.0
			1.00			Borehole BH5 terminated at 1.00m					
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH6

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
						Concrete					
HA			*0.10*			Fill: Sandy Clay, medium plasticity, brown-light brown, with some demolition matter	M		0.1-0.2	No HC odours, staining or fibro fragments observed	
			0.20			Borehole BH6 terminated at 0.20m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH7

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
						Garden Mulch					
			0.10			Fill: Silty Clay, medium plasticity, brown, with some fine to coarse grained sand	M				
HA									0.2-0.3	No HC odours, staining or fibro fragments observed	
			0.30		CH	Silty CLAY, high plasticity, light brown, with some fine to coarse grained sand	W				
			0.5						0.4-0.5	No HC odours, staining or fibro fragments observed	0.5
			0.50			Borehole BH7 terminated at 0.50m					
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH8

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
						Asphalt					
			0.05			Fill: Silty Clay, high plasticity, dark brown, with some fine to coarse grained sand	M				
ADT			0.5						0.3-0.4	No HC odours, staining or fibro fragments observed	0.5
			0.50		CH	Silty CLAY, high plasticity, grey, with some fine to coarse grained sand	W		0.6-0.7	No HC odours, staining or fibro fragments observed	
			1.0								1.0
			1.00			Borehole BH8 terminated at 1.00m					
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH9

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT						Asphalt					
			0.05			Fill: Silty Sandy Clay, low to medium plasticity, dark brown, with some gravels	M		0.2-0.3	No HC odours, staining or fibro fragments observed	
			0.40		CL-CH	Silty CLAY, medium to high plasticity, brown-red, with some small sandstone rocks	M				0.5
			0.5								
			1.0						0.9-1.0	No HC odours, staining or fibro fragments observed	1.0
			1.10			Borehole BH9 terminated at 1.10m					
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH10

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT			0.5			Fill: Silty Clay, low to medium plasticity, dark brown, with fine to coarse grained sand	M		0.2-0.3	No HC odours, staining or fibro fragments observed	0.5
			0.60		CH	Silty CLAY, high plasticity, yellow-brown, with some fine to coarse grained sand	M		0.3-1.0	No HC odours, staining or fibro fragments observed	1.0
			1.00			Borehole BH10 terminated at 1.00m					
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH11

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT			0.5			Fill: Silty Clay, medium plasticity, dark brown, with some fine to coarse grained sand	M			fibro fragments observed on surface	0.5
			0.60		CL-CH	Silty CLAY, medium plasticity, orange-brown, with some fine to coarse grained sand	M		0.3-0.4	No HC odours, or staining observed	
			1.0						0.8-0.9	No HC odours or staining observed	1.0
			1.00			Borehole BH11 terminated at 1.00m					
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH12

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT			0.5			Fill: Silty Clay, medium plasticity, orange-brown, with some gravels and traces of fine to medium grained sand	M			fibro fragments observed on surface	0.5
			0.60		CL-CH	CLAY, medium-high plasticity, orange-red-brown-grey, traces of fine grained sand	M		0.3-0.4	No HC odours, or staining observed	1.0
			1.0						0.8-0.9	No HC odours or staining observed	
			1.00			Borehole BH12 terminated at 1.00m					
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH13

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT						Fill: Clayey Silt, medium plasticity, dark brown, with fine to coarse grained sand	M			fibro fragments observed on surface	
									0.3-0.4	No HC odours, or staining observed	
			0.5								0.5
			0.50		CL-CH	Silty CLAY, medium to high plasticity, orange-brown, with traces of fine grained sand	M				
									0.8-0.9	No HC odours or staining observed	
			1.0								1.0
			1.00			Borehole BH13 terminated at 1.00m					
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH14

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, low plasticity, dark brown, with some fine grained sand and organic matter	M		0.1-0.2	No HC odours, staining or fibro fragments observed	
			0.20			Fill: Service Gravels	M		.		
			0.30			Borehole BH14 terminated at 0.30m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH15

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, low plasticity, dark brown, with some fine grained sand and organic matter	M		0.1-0.2	No HC odours, staining or fibro fragments observed	
			0.20			Fill: Service Gravels	M		.		
			0.30			Borehole BH15 terminated at 0.30m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH16

FOUNDATION EARTH SCIENCES

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT			0.5			Fill: Silty Clay, low to medium plasticity, brown, with traces of fine grained sand	M		0.3-0.4	No HC odours, staining or fibro fragments observed	0.5
			0.60		CL-CH	Silty CLAY, medium to high plasticity, orange-brown	M				
			1.0						1.0-1.1	No HC odours, staining or fibro fragments observed	1.0
			1.5								1.5
			1.80		CL-CH	Silty CLAY, medium plasticity, red-grey-brown, with traces of fine graned sand and gravels	M				
			2.0							No HC odours, staining or fibro fragments observed	2.0
			2.5								2.5
			3.0							No HC odours, staining or fibro fragments observed	3.0
			3.20			SANDSTONE, Extremely Weathered, red with some gravels	D				
			3.5								3.5
			4.0								4.0
			4.00			Borehole BH16 terminated at 4.00m					
			4.5								4.5
			5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH17

FOUNDATION EARTH SCIENCES

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Fill: Silty Clay, low plasticity, brown, with some organic matter	M		0.0-0.1	No HC odours, staining or fibro fragments observed	
			0.30			Borehole BH17 terminated at 0.30m					
			0.5								0.5
			1.0								1.0
			1.5								1.5
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH18

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA			0.5			Fill: Silty Clay, low plasticity, dark brown, with some fine to coarse grained sand, organic matter and traces of gravels	M		0.2-0.3	No HC odours, staining or fibro fragments observed	0.5
			0.50 1.0 1.5 2.0			Borehole BH18 terminated at 0.50m					1.0 1.5 2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH19

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Hand Auger **Borehole Size :** 75mm **Slope :** -90°

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
HA						Concrete					
			0.15			Cavity				Cavity between commercial business floor and ground surface	
			0.5								0.5
			1.0								1.0
			1.10			Fill: Silty Clay, medium plasticity, brown, with some fine to coarse grained sand	M		1.1-1.2	No HC odours, staining or fibro fragments observed	
			1.5								1.5
			1.50			Borehole BH19 terminated at 1.50m					
			2.0								2.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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APPENDIX H: NATA ACCREDITED LABORATORY CERTIFICATES

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customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 321153

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Ben Buckley
Address	PO Box 4405, East Gosford, NSW, 2250

Sample Details

Your Reference	**E3019 East Gosford**
Number of Samples	1 Water
Date samples received	18/04/2023
Date completed instructions received	18/04/2023

Analysis Details

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

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

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

Report Details

Date results requested by	26/04/2023
Date of Issue	26/04/2023

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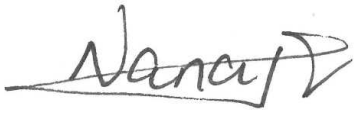
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Kyle Gavrily, Senior Chemist
Liam Timmins, Organics Supervisor
Loren Bardwell, Development Chemist

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in water		
Our Reference		321153-1
Your Reference	UNITS	SS1
Date Sampled		17/04/2023
Type of sample		Water
Date extracted	-	20/04/2023
Date analysed	-	21/04/2023
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1

VOCs in water		
Our Reference		321153-1
Your Reference	UNITS	SS1
Date Sampled		17/04/2023
Type of sample		Water
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	107
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	102

vTRH(C6-C10)/BTEXN in Water		
Our Reference		321153-1
Your Reference	UNITS	SS1
Date Sampled		17/04/2023
Type of sample		Water
Date extracted	-	20/04/2023
Date analysed	-	21/04/2023
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	107
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	102

svTRH (C10-C40) in Water		
Our Reference		321153-1
Your Reference	UNITS	SS1
Date Sampled		17/04/2023
Type of sample		Water
Date extracted	-	19/04/2023
Date analysed	-	20/04/2023
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	85

PAHs in Water		
Our Reference		321153-1
Your Reference	UNITS	SS1
Date Sampled		17/04/2023
Type of sample		Water
Date extracted	-	19/04/2023
Date analysed	-	20/04/2023
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	<0.1
Surrogate p-Terphenyl-d14	%	77

HM in water - dissolved		
Our Reference		321153-1
Your Reference	UNITS	SS1
Date Sampled		17/04/2023
Type of sample		Water
Date prepared	-	21/04/2023
Date analysed	-	21/04/2023
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	1
Zinc-Dissolved	µg/L	4

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			20/04/2023	[NT]	[NT]	[NT]	[NT]	20/04/2023	[NT]
Date analysed	-			21/04/2023	[NT]	[NT]	[NT]	[NT]	21/04/2023	[NT]
Dichlorodifluoromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
2,2-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
1,1,1-trichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
1,1-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromomethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Bromodichloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
1,2-dibromoethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromoform	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Styrene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	105	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-BFB	%		Org-023	107	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			20/04/2023	[NT]	[NT]	[NT]	[NT]	20/04/2023	[NT]
Date analysed	-			21/04/2023	[NT]	[NT]	[NT]	[NT]	21/04/2023	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	111	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	114	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	105	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-BFB	%		Org-023	107	[NT]	[NT]	[NT]	[NT]	103	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	321153-1
Date extracted	-			19/04/2023	[NT]	[NT]	[NT]	[NT]	19/04/2023	19/04/2023
Date analysed	-			20/04/2023	[NT]	[NT]	[NT]	[NT]	20/04/2023	20/04/2023
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	113	107
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	117	121
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	97
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	113	107
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	117	121
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	97
Surrogate o-Terphenyl	%		Org-020	88	[NT]	[NT]	[NT]	[NT]	94	79

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			19/04/2023	[NT]	[NT]	[NT]	[NT]	19/04/2023	[NT]
Date analysed	-			20/04/2023	[NT]	[NT]	[NT]	[NT]	20/04/2023	[NT]
Naphthalene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	72	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	65	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	93	[NT]	[NT]	[NT]	[NT]	91	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date prepared	-			21/04/2023	[NT]	[NT]	[NT]	[NT]	21/04/2023	[NT]
Date analysed	-			21/04/2023	[NT]	[NT]	[NT]	[NT]	21/04/2023	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	84	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]

Result Definitions

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

Quality Control Definitions

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

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; reece@foundationes.com.au ph: +61466 385 221	**Project Manager:**	Michael Silk	**Project #:**	E3019
		Sampled By:	KV	**Project Name:**	East Gosford
Delivery Details:	Envirolab Pty Ltd 12 Ashley Street, Chatswood NSW 2067 email: ahle@envirolab.com.au ph: +612 9910 6200	**Purchase Order #:**	N/A	**Turnaround time :**	Standard
		Page #:	1		

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					Heavy Metals (8)	TRH	BTEXN	PAH Low	VOC	TRH C6-C10 & BTEXN	PFAS							Suites	
1	SS1	-	17.04.2023	Water	X	X	X	X	X									Combo 3L	Keep

Special Directions and Coments:

Relinquished by	KV	Received By	Method of shipment
Signature		Signature	Courier
Date	18.04.2023	Date	

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

321153

Received: 18/04
Time Received: ~~16~~ 1700
Received By: SP
Temp: Cool/Ambient
Cooling: Ice/Ice-pack
Security: Intact/Broken/None

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Ben Buckley

Sample Login Details

Your reference	E3019 East Gosford
Envirolab Reference	321153
Date Sample Received	18/04/2023
Date Instructions Received	18/04/2023
Date Results Expected to be Reported	26/04/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

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

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in water	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	HM in water - dissolved
SS1	✓	✓	✓	✓	✓

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

Additional Info
Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 322277

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Michael Silk
Address	PO Box 4405, East Gosford, NSW, 2250

Sample Details

Your Reference	**E3019, East Gosford**
Number of Samples	1 Water
Date samples received	03/05/2023
Date completed instructions received	03/05/2023

Analysis Details

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

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

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

Report Details

Date results requested by	05/05/2023
Date of Issue	05/05/2023

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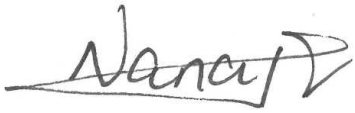
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Phalak Inthakesone, Organics Development Manager, Sydney

Authorised By



Nancy Zhang, Laboratory Manager

PFAS in Waters Extended		
Our Reference		322277-1
Your Reference	UNITS	GWSS1
Date Sampled		19/04/2023
Type of sample		Water
Date prepared	-	04/05/2023
Date analysed	-	04/05/2023
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluoropentanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluoroheptanesulfonic acid	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	0.02
Perfluorodecanesulfonic acid	µg/L	<0.02
Perfluorobutanoic acid	µg/L	<0.02
Perfluoropentanoic acid	µg/L	<0.02
Perfluorohexanoic acid	µg/L	<0.01
Perfluoroheptanoic acid	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	0.01
Perfluorononanoic acid	µg/L	<0.01
Perfluorodecanoic acid	µg/L	<0.02
Perfluoroundecanoic acid	µg/L	<0.02
Perfluorododecanoic acid	µg/L	<0.05
Perfluorotridecanoic acid	µg/L	<0.1
Perfluorotetradecanoic acid	µg/L	<0.5
4:2 FTS	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
10:2 FTS	µg/L	<0.02
Perfluorooctane sulfonamide	µg/L	<0.1
N-Methyl perfluorooctane sulfonamide	µg/L	<0.05
N-Ethyl perfluorooctanesulfon amide	µg/L	<0.1
N-Me perfluorooctanesulfonamid oethanol	µg/L	<0.05
N-Et perfluorooctanesulfonamid oethanol	µg/L	<0.5
MePerfluorooctanesulf- amid oacetic acid	µg/L	<0.02
EtPerfluorooctanesulf- amid oacetic acid	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	96
Surrogate $^{13}C_2$ *PFOA*	%	81
Extracted ISTD $^{13}C_3$ *PFBS*	%	91
Extracted ISTD $^{18}O_2$ *PFHxS*	%	88
Extracted ISTD $^{13}C_4$ *PFOS*	%	103
Extracted ISTD $^{13}C_4$ *PFBA*	%	86

PFAS in Waters Extended		
Our Reference		322277-1
Your Reference	UNITS	GWSS1
Date Sampled		19/04/2023
Type of sample		Water
Extracted ISTD $^{13}C_3$ *PFPeA*	%	89
Extracted ISTD $^{13}C_2$ *PFHxA*	%	91
Extracted ISTD $^{13}C_4$ *PFHpA*	%	95
Extracted ISTD $^{13}C_4$ *PFOA*	%	109
Extracted ISTD $^{13}C_5$ *PFNA*	%	103
Extracted ISTD $^{13}C_2$ *PFDA*	%	91
Extracted ISTD $^{13}C_2$ *PFUnDA*	%	103
Extracted ISTD $^{13}C_2$ *PFDoDA*	%	102
Extracted ISTD $^{13}C_2$ *PFTeDA*	%	70
Extracted ISTD $^{13}C_2$ *4:2FTS*	%	72
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	85
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	76
Extracted ISTD $^{13}C_8$ *FOSA*	%	96
Extracted ISTD d_3 *N MeFOSA*	%	98
Extracted ISTD d_5 *N EtFOSA*	%	101
Extracted ISTD d_7 *N MeFOSE*	%	95
Extracted ISTD d_9 *N EtFOSE*	%	97
Extracted ISTD d_3 *N MeFOSAA*	%	112
Extracted ISTD d_5 *N EtFOSAA*	%	97
Total Positive PFHxS & PFOS	µg/L	0.02
Total Positive PFOA & PFOS	µg/L	0.03
Total Positive PFAS	µg/L	0.03

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

QUALITY CONTROL: PFAS in Waters Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			04/05/2023	[NT]	[NT]	[NT]	[NT]	04/05/2023	[NT]
Date analysed	-			04/05/2023	[NT]	[NT]	[NT]	[NT]	04/05/2023	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluoropentanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	108	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	106	[NT]
Perfluoroheptanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluorodecanesulfonic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	94	[NT]
Perfluorobutanoic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	109	[NT]
Perfluoropentanoic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	106	[NT]
Perfluorohexanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluoroheptanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	113	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorononanoic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	99	[NT]
Perfluorodecanoic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	101	[NT]
Perfluoroundecanoic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	94	[NT]
Perfluorododecanoic acid	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	108	[NT]
Perfluorotridecanoic acid	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Perfluorotetradecanoic acid	µg/L	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	106	[NT]
4:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	113	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	109	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	113	[NT]
10:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	127	[NT]
Perfluorooctane sulfonamide	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
N-Methyl perfluorooctane sulfonamide	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	105	[NT]
N-Ethyl perfluorooctanesulfon amide	µg/L	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
N-Me perfluorooctanesulfonamid oethanol	µg/L	0.05	Org-029	<0.05	[NT]	[NT]	[NT]	[NT]	107	[NT]
N-Et perfluorooctanesulfonamid oethanol	µg/L	0.5	Org-029	<0.5	[NT]	[NT]	[NT]	[NT]	111	[NT]
MePerfluorooctanesulf- amid oacetic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	102	[NT]
EtPerfluorooctanesulf- amid oacetic acid	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	88	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PFAS in Waters Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	92	[NT]	[NT]	[NT]	[NT]	91	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	96	[NT]	[NT]	[NT]	[NT]	94	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	99	[NT]
Extracted ISTD $^{13}C_4$ *PFBA*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	93	[NT]
Extracted ISTD $^{13}C_3$ *PFPeA*	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	89	[NT]
Extracted ISTD $^{13}C_2$ *PFHxA*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD $^{13}C_4$ *PFHpA*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD $^{13}C_5$ *PFNA*	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD $^{13}C_2$ *PFDA*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD $^{13}C_2$ *PFUnDA*	%		Org-029	111	[NT]	[NT]	[NT]	[NT]	104	[NT]
Extracted ISTD $^{13}C_2$ *PFDoDA*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	103	[NT]
Extracted ISTD $^{13}C_2$ *PFTeDA*	%		Org-029	86	[NT]	[NT]	[NT]	[NT]	82	[NT]
Extracted ISTD $^{13}C_2$ *4:2FTS*	%		Org-029	73	[NT]	[NT]	[NT]	[NT]	86	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	91	[NT]	[NT]	[NT]	[NT]	92	[NT]
Extracted ISTD $^{13}C_8$ *FOSA*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	96	[NT]
Extracted ISTD d_3 *N MeFOSA*	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD d_5 *N EtFOSA*	%		Org-029	107	[NT]	[NT]	[NT]	[NT]	105	[NT]
Extracted ISTD d_7 *N MeFOSE*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: PFAS in Waters Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Extracted ISTD d_9 *N EtFOSE*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD d_3 *N MeFOSAA*	%		Org-029	122	[NT]	[NT]	[NT]	[NT]	109	[NT]
Extracted ISTD d_5 *N EtFOSAA*	%		Org-029	113	[NT]	[NT]	[NT]	[NT]	106	[NT]

Result Definitions

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

Quality Control Definitions

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

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; reece@foundationes.com.au ph: +61466 385 221	**Project Manager:**	Michael Silk
		Sampled By:	KV
Delivery Details:	Envirolab Pty Ltd 12 Ashley Street, Chatswood NSW 2067 email: ahie@envirolab.com.au ph: +612 9910 6200	**Purchase Order #:**	N/A
		Page #:	1

Project #:	E3019	
Project Name:	East Gosford	
Turnaround time :	~~Standard~~	2day no surcharge. SJ

#	Sample ID	Depth	Date Sampled	Matrix	Analytes: Heavy Metals (8)	TRH	BTEXN	PAH Low	VOC	TRH C6-C10 & BTEXN	PFAS							Suites	Sample Comments
1	GWSS1	-	19.04.2023	Water							X							Combo 3L	Keep

Special Directions and Coments:

Relinquished by	KV	**Received By**	ELS SYD	**Method of shipment**
Signature	KV	**Signature**	Saufan	Courier
Date	20.04.2023	**Date**	03/05/23	

ENVIROLAB
12 As... t
Chatswood NSW 20..
Ph: (02) 9910 6200

Job No: 322277

Date Received: 03/05/23
Time Received: 1700
Received By: SP
Temp: Cool/Ambient
Cooling: Icepack
...ct/Broken/None

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford**
Order Number	**E3019**
Samples	6

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	**SE246140 R0**
Date Received	18/4/2023
Date Reported	27/4/2023

COMMENTS

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

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

VOCs in Water [AN433] Tested: 24/4/2023

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140.001	GW2 WATER - 17/4/2023 SE246140.002	GW3 WATER - 17/4/2023 SE246140.003	D1 WATER - 17/4/2023 SE246140.004	TS1 WATER - 17/4/2023 SE246140.005
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	<5	<5	-
Chloromethane	µg/L	5	<5	<5	<5	<5	-
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	<0.3	<0.3	-
Bromomethane	µg/L	10	<10	<10	<10	<10	-
Chloroethane	µg/L	5	<5	<5	<5	<5	-
Trichlorofluoromethane	µg/L	1	<1	<1	<1	<1	-
Acetone (2-propanone)	µg/L	10	<10	<10	<10	<10	-
Iodomethane	µg/L	5	<5	<5	<5	<5	-
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Acrylonitrile	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Dichloromethane (Methylene chloride)	µg/L	5	<5	<5	<5	<5	-
Allyl chloride	µg/L	2	<2	<2	<2	<2	-
Carbon disulfide	µg/L	2	<2	<2	<2	<2	-
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	<2	<2	<2	-
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Vinyl acetate*	µg/L	10	<10	<10	<10	<10	-
MEK (2-butanone)	µg/L	10	<10	<10	<10	<10	-
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Bromochloromethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Chloroform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[104%]
Dibromomethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
2-nitropropane	µg/L	100	<100	<100	<100	<100	-
Bromodichloromethane (THM)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5	<5	<5	-
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[104%]
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Dibromochloromethane (THM)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
2-hexanone (MBK)	µg/L	5	<5	<5	<5	<5	-
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Chlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[100%]
Bromoform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
m/p-xylene	µg/L	1	<1	<1	<1	<1	[97%]
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[98%]
Total Xylenes	µg/L	1.5	<1.5	<1.5	<1.5	<1.5	-
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	<1	-
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Bromobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
n-propylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-

VOCs in Water [AN433] Tested: 24/4/2023 (continued)

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140.001	GW2 WATER - 17/4/2023 SE246140.002	GW3 WATER - 17/4/2023 SE246140.003	D1 WATER - 17/4/2023 SE246140.004	TS1 WATER - 17/4/2023 SE246140.005
2-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
4-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
tert-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
sec-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	<0.3	<0.3	-
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
n-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[108%]
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Total BTEX	µg/L	3	<3	<3	<3	<3	-
Total VOC	µg/L	10	<10	<10	<10	<10	-

VOCs in Water [AN433] Tested: 24/4/2023 (continued)

PARAMETER	UOM	LOR	TB1 WATER - 17/4/2023 SE246140.006
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	-
Benzene	µg/L	0.5	<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	-
Toluene	µg/L	0.5	<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	-
Ethylbenzene	µg/L	0.5	<0.5
Bromoform (THM)	µg/L	0.5	-
m/p-xylene	µg/L	1	<1
Styrene (Vinyl benzene)	µg/L	0.5	IS
1,1,2,2-tetrachloroethane	µg/L	0.5	IS
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
1,2,3-trichloropropane	µg/L	0.5	-
trans-1,4-dichloro-2-butene	µg/L	1	-
Isopropylbenzene (Cumene)	µg/L	0.5	-
Bromobenzene	µg/L	0.5	-
n-propylbenzene	µg/L	0.5	-

VOCs in Water [AN433] Tested: 24/4/2023 (continued)

PARAMETER	UOM	LOR	TB1 WATER - 17/4/2023 SE246140.006
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	-
Naphthalene (VOC)*	µg/L	0.5	<0.5
Hexachlorobutadiene	µg/L	0.5	-
1,2,3-trichlorobenzene	µg/L	0.5	-
Total BTEX	µg/L	3	<3
Total VOC	µg/L	10	-

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 24/4/2023

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140.001	GW2 WATER - 17/4/2023 SE246140.002	GW3 WATER - 17/4/2023 SE246140.003	D1 WATER - 17/4/2023 SE246140.004	TB1 WATER - 17/4/2023 SE246140.006
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: 20/4/2023

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140.001	GW2 WATER - 17/4/2023 SE246140.002	GW3 WATER - 17/4/2023 SE246140.003	D1 WATER - 17/4/2023 SE246140.004
TRH C10-C14	µg/L	50	<50	<50	**170**	<50
TRH C15-C28	µg/L	200	<200	<200	**260**	<200
TRH C29-C36	µg/L	200	<200	<200	<200	<200
TRH C37-C40	µg/L	200	<200	<200	<200	<200
TRH >C10-C16	µg/L	60	<60	<60	**110**	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	**110**	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500	<500
TRH C10-C40	µg/L	320	<320	<320	**470**	<320

Low Level PAH (Poly Aromatic Hydrocarbons) in Water [AN420] Tested: 27/4/2023

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140.001	GW2 WATER - 17/4/2023 SE246140.002	GW3 WATER - 17/4/2023 SE246140.003	D1 WATER - 17/4/2023 SE246140.004
Naphthalene	µg/L	0.02	<0.02	<0.02	<0.02	<0.02
2-methylnaphthalene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
1-methylnaphthalene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Phenanthrene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Fluoranthene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Pyrene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Benzo(a)anthracene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Chrysene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b&j&k)fluoranthene	µg/L	0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)pyrene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Dibenzo(ah)anthracene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Benzo(ghi)perylene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Carcinogenic PAHs (as BaP TEQ) - assume non detects	TEQ (µg/L)	0.012	<0.012	<0.012	<0.012	<0.012
Total PAH VIC EPA Guidelines (16)*	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Total PAH (18)*	µg/L	0.1	<0.1	<0.1	<0.1	<0.1

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 20/4/2023

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140.001	GW2 WATER - 17/4/2023 SE246140.002	GW3 WATER - 17/4/2023 SE246140.003	D1 WATER - 17/4/2023 SE246140.004
Naphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1	<1	<1

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 20/4/2023

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140.001	GW2 WATER - 17/4/2023 SE246140.002	GW3 WATER - 17/4/2023 SE246140.003	D1 WATER - 17/4/2023 SE246140.004
Arsenic	µg/L	1	<1	<1	<1	**1**
Cadmium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Copper	µg/L	1	<1	**1**	<1	<1
Chromium	µg/L	1	<1	<1	<1	<1
Nickel	µg/L	1	**3**	**12**	**16**	**66**
Lead	µg/L	1	<1	<1	<1	<1
Zinc	µg/L	5	<5	**32**	**55**	**12**

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 20/4/2023

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140.001	GW2 WATER - 17/4/2023 SE246140.002	GW3 WATER - 17/4/2023 SE246140.003	D1 WATER - 17/4/2023 SE246140.004
Mercury	mg/L	0.0001	<0.0001	**0.0001**	<0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
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,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
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). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all < LOR results are half the LOR and the third assuming all <LOR results are the LOR.
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.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been 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 and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE246140 R0

CLIENT DETAILS

Contact	Ben Buckley
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Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford**
Order Number	**E3019**
Samples	6

LABORATORY DETAILS

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SGS Reference	**SE246140 R0**
Date Received	18 Apr 2023
Date Reported	27 Apr 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	Low Level PAH (Poly Aromatic Hydrocarbons) in Water	4 items
Surrogate	PAH (Polynuclear Aromatic Hydrocarbons) in Water	3 items
Duplicate	Volatile Petroleum Hydrocarbons in Water	1 item

SAMPLE SUMMARY

Sample counts by matrix	6 Water	Date documentation received	18/4/2023
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	8.0°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

HOLDING TIME SUMMARY

SE246140 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1	SE246140.001	LB277794	17 Apr 2023	18 Apr 2023	24 Apr 2023	27 Apr 2023†	06 Jun 2023	27 Apr 2023
GW2	SE246140.002	LB277794	17 Apr 2023	18 Apr 2023	24 Apr 2023	27 Apr 2023†	06 Jun 2023	27 Apr 2023
GW3	SE246140.003	LB277794	17 Apr 2023	18 Apr 2023	24 Apr 2023	27 Apr 2023†	06 Jun 2023	27 Apr 2023
D1	SE246140.004	LB277794	17 Apr 2023	18 Apr 2023	24 Apr 2023	27 Apr 2023†	06 Jun 2023	27 Apr 2023

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1	SE246140.001	LB277224	17 Apr 2023	18 Apr 2023	15 May 2023	20 Apr 2023	15 May 2023	26 Apr 2023
GW2	SE246140.002	LB277224	17 Apr 2023	18 Apr 2023	15 May 2023	20 Apr 2023	15 May 2023	26 Apr 2023
GW3	SE246140.003	LB277224	17 Apr 2023	18 Apr 2023	15 May 2023	20 Apr 2023	15 May 2023	26 Apr 2023
D1	SE246140.004	LB277224	17 Apr 2023	18 Apr 2023	15 May 2023	20 Apr 2023	15 May 2023	26 Apr 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1	SE246140.001	LB277246	17 Apr 2023	18 Apr 2023	24 Apr 2023	20 Apr 2023	30 May 2023	26 Apr 2023
GW2	SE246140.002	LB277246	17 Apr 2023	18 Apr 2023	24 Apr 2023	20 Apr 2023	30 May 2023	26 Apr 2023
GW3	SE246140.003	LB277246	17 Apr 2023	18 Apr 2023	24 Apr 2023	20 Apr 2023	30 May 2023	26 Apr 2023
D1	SE246140.004	LB277246	17 Apr 2023	18 Apr 2023	24 Apr 2023	20 Apr 2023	30 May 2023	26 Apr 2023

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1	SE246140.001	LB277215	17 Apr 2023	18 Apr 2023	14 Oct 2023	20 Apr 2023	14 Oct 2023	20 Apr 2023
GW2	SE246140.002	LB277215	17 Apr 2023	18 Apr 2023	14 Oct 2023	20 Apr 2023	14 Oct 2023	20 Apr 2023
GW3	SE246140.003	LB277215	17 Apr 2023	18 Apr 2023	14 Oct 2023	20 Apr 2023	14 Oct 2023	20 Apr 2023
D1	SE246140.004	LB277215	17 Apr 2023	18 Apr 2023	14 Oct 2023	20 Apr 2023	14 Oct 2023	20 Apr 2023

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1	SE246140.001	LB277246	17 Apr 2023	18 Apr 2023	24 Apr 2023	20 Apr 2023	30 May 2023	26 Apr 2023
GW2	SE246140.002	LB277246	17 Apr 2023	18 Apr 2023	24 Apr 2023	20 Apr 2023	30 May 2023	26 Apr 2023
GW3	SE246140.003	LB277246	17 Apr 2023	18 Apr 2023	24 Apr 2023	20 Apr 2023	30 May 2023	26 Apr 2023
D1	SE246140.004	LB277246	17 Apr 2023	18 Apr 2023	24 Apr 2023	20 Apr 2023	30 May 2023	26 Apr 2023

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1	SE246140.001	LB277517	17 Apr 2023	18 Apr 2023	01 May 2023	24 Apr 2023	01 May 2023	26 Apr 2023
GW2	SE246140.002	LB277517	17 Apr 2023	18 Apr 2023	01 May 2023	24 Apr 2023	01 May 2023	26 Apr 2023
GW3	SE246140.003	LB277517	17 Apr 2023	18 Apr 2023	01 May 2023	24 Apr 2023	01 May 2023	26 Apr 2023
D1	SE246140.004	LB277517	17 Apr 2023	18 Apr 2023	01 May 2023	24 Apr 2023	01 May 2023	26 Apr 2023
TS1	SE246140.005	LB277709	17 Apr 2023	18 Apr 2023	01 May 2023	26 Apr 2023	01 May 2023	26 Apr 2023
TB1	SE246140.006	LB277709	17 Apr 2023	18 Apr 2023	01 May 2023	26 Apr 2023	01 May 2023	26 Apr 2023

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1	SE246140.001	LB277517	17 Apr 2023	18 Apr 2023	01 May 2023	24 Apr 2023	01 May 2023	26 Apr 2023
GW2	SE246140.002	LB277517	17 Apr 2023	18 Apr 2023	01 May 2023	24 Apr 2023	01 May 2023	26 Apr 2023
GW3	SE246140.003	LB277517	17 Apr 2023	18 Apr 2023	01 May 2023	24 Apr 2023	01 May 2023	26 Apr 2023
D1	SE246140.004	LB277517	17 Apr 2023	18 Apr 2023	01 May 2023	24 Apr 2023	01 May 2023	26 Apr 2023
TS1	SE246140.005	LB277709	17 Apr 2023	18 Apr 2023	01 May 2023	26 Apr 2023	01 May 2023	26 Apr 2023
TB1	SE246140.006	LB277709	17 Apr 2023	18 Apr 2023	01 May 2023	26 Apr 2023	01 May 2023	26 Apr 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	GW1	SE246140.001	%	40 - 130%	73
	GW2	SE246140.002	%	40 - 130%	70
	GW3	SE246140.003	%	40 - 130%	101
	D1	SE246140.004	%	40 - 130%	81
d14-p-terphenyl (Surrogate)	GW1	SE246140.001	%	40 - 130%	58
	GW2	SE246140.002	%	40 - 130%	53
	GW3	SE246140.003	%	40 - 130%	71
	D1	SE246140.004	%	40 - 130%	65
d5-nitrobenzene (Surrogate)	GW1	SE246140.001	%	40 - 130%	71
	GW2	SE246140.002	%	40 - 130%	71
	GW3	SE246140.003	%	40 - 130%	103
	D1	SE246140.004	%	40 - 130%	80

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	GW1	SE246140.001	%	40 - 130%	46
	GW2	SE246140.002	%	40 - 130%	44
	GW3	SE246140.003	%	40 - 130%	44
	D1	SE246140.004	%	40 - 130%	46
d14-p-terphenyl (Surrogate)	GW1	SE246140.001	%	40 - 130%	36 ①
	GW2	SE246140.002	%	40 - 130%	38 ①
	GW3	SE246140.003	%	40 - 130%	40
	D1	SE246140.004	%	40 - 130%	38 ①
d5-nitrobenzene (Surrogate)	GW1	SE246140.001	%	40 - 130%	48
	GW2	SE246140.002	%	40 - 130%	48
	GW3	SE246140.003	%	40 - 130%	44
	D1	SE246140.004	%	40 - 130%	52

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	GW1	SE246140.001	%	40 - 130%	87
	GW2	SE246140.002	%	40 - 130%	99
	GW3	SE246140.003	%	40 - 130%	95
	D1	SE246140.004	%	40 - 130%	103
	TS1	SE246140.005	%	40 - 130%	113
	TB1	SE246140.006	%	40 - 130%	108
d4-1,2-dichloroethane (Surrogate)	GW1	SE246140.001	%	40 - 130%	101
	GW2	SE246140.002	%	40 - 130%	100
	GW3	SE246140.003	%	40 - 130%	94
	D1	SE246140.004	%	40 - 130%	93
	TS1	SE246140.005	%	40 - 130%	105
	TB1	SE246140.006	%	40 - 130%	105
d8-toluene (Surrogate)	GW1	SE246140.001	%	40 - 130%	99
	GW2	SE246140.002	%	40 - 130%	100
	GW3	SE246140.003	%	40 - 130%	97
	D1	SE246140.004	%	40 - 130%	95
	TS1	SE246140.005	%	40 - 130%	122
	TB1	SE246140.006	%	40 - 130%	118

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	GW1	SE246140.001	%	40 - 130%	87
	GW2	SE246140.002	%	40 - 130%	99
	GW3	SE246140.003	%	40 - 130%	95
	D1	SE246140.004	%	40 - 130%	103
	TB1	SE246140.006	%	40 - 130%	108
d4-1,2-dichloroethane (Surrogate)	GW1	SE246140.001	%	60 - 130%	101
	GW2	SE246140.002	%	60 - 130%	100
	GW3	SE246140.003	%	60 - 130%	94
	D1	SE246140.004	%	60 - 130%	93
	TB1	SE246140.006	%	60 - 130%	105
d8-toluene (Surrogate)	GW1	SE246140.001	%	40 - 130%	99

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Water (continued) — **Method: ME-(AU)-[ENV]AN433**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	GW2	SE246140.002	%	40 - 130%	100
	GW3	SE246140.003	%	40 - 130%	97
	D1	SE246140.004	%	40 - 130%	95
	TB1	SE246140.006	%	40 - 130%	118

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277794.001		Naphthalene	µg/L	0.02	<0.02
		2-methylnaphthalene	µg/L	0.01	<0.01
		1-methylnaphthalene	µg/L	0.01	<0.01
		Acenaphthylene	µg/L	0.01	<0.01
		Acenaphthene	µg/L	0.01	<0.01
		Fluorene	µg/L	0.01	<0.01
		Phenanthrene	µg/L	0.01	<0.01
		Anthracene	µg/L	0.01	<0.01
		Fluoranthene	µg/L	0.01	<0.01
		Pyrene	µg/L	0.01	<0.01
		Benzo(a)anthracene	µg/L	0.01	<0.01
		Chrysene	µg/L	0.01	<0.01
		Benzo(b&j&k)fluoranthene	µg/L	0.02	<0.02
		Benzo(a)pyrene	µg/L	0.01	<0.01
		Indeno(1,2,3-cd)pyrene	µg/L	0.01	<0.01
		Dibenzo(ah)anthracene	µg/L	0.01	<0.01
		Benzo(ghi)perylene	µg/L	0.01	<0.01
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	71
		2-fluorobiphenyl (Surrogate)	%	-	82
		d14-p-terphenyl (Surrogate)	%	-	58

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB277224.001	Mercury	mg/L	0.0001	<0.0001

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277246.001		Naphthalene	µg/L	0.1	<0.1
		2-methylnaphthalene	µg/L	0.1	<0.1
		1-methylnaphthalene	µg/L	0.1	<0.1
		Acenaphthylene	µg/L	0.1	<0.1
		Acenaphthene	µg/L	0.1	<0.1
		Fluorene	µg/L	0.1	<0.1
		Phenanthrene	µg/L	0.1	<0.1
		Anthracene	µg/L	0.1	<0.1
		Fluoranthene	µg/L	0.1	<0.1
		Pyrene	µg/L	0.1	<0.1
		Benzo(a)anthracene	µg/L	0.1	<0.1
		Chrysene	µg/L	0.1	<0.1
		Benzo(a)pyrene	µg/L	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1
		Benzo(ghi)perylene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	68
		2-fluorobiphenyl (Surrogate)	%	-	58
		d14-p-terphenyl (Surrogate)	%	-	72

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB277215.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5
LB277215.025	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Trace Metals (Dissolved) in Water by ICPMS (continued)

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB277215.025	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB277246.001	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

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277517.001	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5
		1,2-dichloropropane	µg/L	0.5	<0.5
		cis-1,3-dichloropropene	µg/L	0.5	<0.5
		trans-1,3-dichloropropene	µg/L	0.5	<0.5
		1,2-dibromoethane (EDB)	µg/L	0.5	<0.5
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
		Chloromethane	µg/L	5	<5
		Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3
		Bromomethane	µg/L	10	<10
		Chloroethane	µg/L	5	<5
		Trichlorofluoromethane	µg/L	1	<1
		1,1-dichloroethene	µg/L	0.5	<0.5
		Iodomethane	µg/L	5	<5
		Dichloromethane (Methylene chloride)	µg/L	5	<5
		Allyl chloride	µg/L	2	<2
		trans-1,2-dichloroethene	µg/L	0.5	<0.5
		1,1-dichloroethane	µg/L	0.5	<0.5
		cis-1,2-dichloroethene	µg/L	0.5	<0.5
		Bromochloromethane	µg/L	0.5	<0.5
		1,2-dichloroethane	µg/L	0.5	<0.5
		1,1,1-trichloroethane	µg/L	0.5	<0.5
		1,1-dichloropropene	µg/L	0.5	<0.5
		Carbon tetrachloride	µg/L	0.5	<0.5
		Dibromomethane	µg/L	0.5	<0.5
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
		1,1,2-trichloroethane	µg/L	0.5	<0.5
		1,3-dichloropropane	µg/L	0.5	<0.5
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
		1,2,3-trichloropropane	µg/L	0.5	<0.5
		trans-1,4-dichloro-2-butene	µg/L	1	<1
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
		Hexachlorobutadiene	µg/L	0.5	<0.5
	Halogenated Aromatics	Chlorobenzene	µg/L	0.5	<0.5
		Bromobenzene	µg/L	0.5	<0.5
		2-chlorotoluene	µg/L	0.5	<0.5
		4-chlorotoluene	µg/L	0.5	<0.5
		1,3-dichlorobenzene	µg/L	0.5	<0.5
		1,4-dichlorobenzene	µg/L	0.3	<0.3
		1,2-dichlorobenzene	µg/L	0.5	<0.5
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5
		1,2,3-trichlorobenzene	µg/L	0.5	<0.5
	Monocyclic Aromatic Hydrocarbons	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
		Styrene (Vinyl benzene)	µg/L	0.5	<0.5
		o-xylene	µg/L	0.5	<0.5

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277517.001	Monocyclic Aromatic Hydrocarbons	Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
		n-propylbenzene	µg/L	0.5	<0.5
		1,3,5-trimethylbenzene	µg/L	0.5	<0.5
		tert-butylbenzene	µg/L	0.5	<0.5
		1,2,4-trimethylbenzene	µg/L	0.5	<0.5
		sec-butylbenzene	µg/L	0.5	<0.5
		p-isopropyltoluene	µg/L	0.5	<0.5
		n-butylbenzene	µg/L	0.5	<0.5
	Nitrogenous Compounds	Acrylonitrile	µg/L	0.5	<0.5
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10
		MtBE (Methyl-tert-butyl ether)	µg/L	2	<2
		Vinyl acetate*	µg/L	10	<10
		MEK (2-butanone)	µg/L	10	<10
		MIBK (4-methyl-2-pentanone)	µg/L	5	<5
		2-hexanone (MBK)	µg/L	5	<5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	125
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	116
	Trihalomethanes	Chloroform (THM)	µg/L	0.5	<0.5
		Bromodichloromethane (THM)	µg/L	0.5	<0.5
		Dibromochloromethane (THM)	µg/L	0.5	<0.5
		Bromoform (THM)	µg/L	0.5	<0.5
LB277709.001	Monocyclic Aromatic Hydrocarbons	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
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	112
		d8-toluene (Surrogate)	%	-	112
		Bromofluorobenzene (Surrogate)	%	-	102

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277517.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	125
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	116
LB277709.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	112
		d8-toluene (Surrogate)	%	-	112
		Bromofluorobenzene (Surrogate)	%	-	102

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246140.004	LB277224.014	Mercury	µg/L	0.0001	<0.0001	0.0000	200	100

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246088.008	LB277246.024		Naphthalene	µg/L	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
			Acenaphthylene	µg/L	0.1	<0.1	<0.1	200	0
			Acenaphthene	µg/L	0.1	<0.1	<0.1	200	0
			Fluorene	µg/L	0.1	<0.1	<0.1	200	0
			Phenanthrene	µg/L	0.1	<0.1	<0.1	200	0
			Anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Chrysene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.5	0.5	30	0
			2-fluorobiphenyl (Surrogate)	µg/L	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.4	30	2

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246138.004	LB277215.014	Arsenic	µg/L	1	2	2	72	10
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	5	4	37	13
		Copper	µg/L	1	350	350	15	1
		Lead	µg/L	1	20	20	20	1
		Nickel	µg/L	1	7	7	29	9
		Zinc	µg/L	5	160	160	18	3
SE246138.014	LB277215.028	Arsenic	µg/L	1	3	2	55	6
		Cadmium	µg/L	0.1	0.2	0.2	73	22
		Chromium	µg/L	1	10	10	25	4
		Copper	µg/L	1	430	420	15	2
		Lead	µg/L	1	9	8	27	2
		Nickel	µg/L	1	13	12	23	2
		Zinc	µg/L	5	140	130	19	3
SE246140.004	LB277215.035	Arsenic	µg/L	1	1	1	96	3
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	<1	<1	200	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	66	65	17	1
		Zinc	µg/L	5	12	12	57	5

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246088.008	LB277246.025		TRH C10-C14	µg/L	50	<50	<50	200	0
			TRH C15-C28	µg/L	200	<200	<200	200	0
			TRH C29-C36	µg/L	200	<200	<200	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C40	µg/L	320	<320	<320	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<60	<60	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	200	0
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

TRH (Total Recoverable Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246088.008	LB277246.025	TRH F Bands	TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0
SE246110.001	LB277246.024		TRH C10-C14	µg/L	50	300	190	50	44
			TRH C15-C28	µg/L	200	700	490	64	34
			TRH C29-C36	µg/L	200	<200	<200	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C40	µg/L	320	1100	730	65	39
		TRH F Bands	TRH >C10-C16	µg/L	60	430	280	47	41
			TRH >C16-C34 (F3)	µg/L	500	620	<500	126	21
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246088.008	LB277517.026	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	Toluene	µg/L	0.5	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.3	8.5	30	19
			d8-toluene (Surrogate)	µg/L	-	10.1	8.8	30	13
			Bromofluorobenzene (Surrogate)	µg/L	-	11.8	9.0	30	27
		Totals	Total BTEX	µg/L	3	<3	<3	200	0

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246088.008	LB277517.026		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.3	8.5	30	19
			d8-toluene (Surrogate)	µg/L	-	10.1	8.8	30	13
			Bromofluorobenzene (Surrogate)	µg/L	-	11.8	9.0	30	27
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0
SE246109.001	LB277517.027		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<50	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	12.9	8.5	30	41 ②
			d8-toluene (Surrogate)	µg/L	-	10.1	9.5	30	6
			Bromofluorobenzene (Surrogate)	µg/L	-	12.0	9.7	30	21
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277794.002		Naphthalene	µg/L	0.02	31	40	60 - 140	77
		Acenaphthylene	µg/L	0.01	37	40	60 - 140	92
		Acenaphthene	µg/L	0.01	37	40	60 - 140	92
		Phenanthrene	µg/L	0.01	41	40	60 - 140	103
		Anthracene	µg/L	0.01	36	40	60 - 140	90
		Fluoranthene	µg/L	0.01	38	40	60 - 140	95
		Pyrene	µg/L	0.01	41	40	60 - 140	102
		Benzo(a)pyrene	µg/L	0.01	42	40	60 - 140	104
	Surrogates	d14-p-terphenyl (Surrogate)	%	-	0.8	1.08	39 - 130	78

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277246.002		Naphthalene	µg/L	0.1	38	40	60 - 140	94
		Acenaphthylene	µg/L	0.1	44	40	60 - 140	109
		Acenaphthene	µg/L	0.1	42	40	60 - 140	104
		Phenanthrene	µg/L	0.1	43	40	60 - 140	107
		Anthracene	µg/L	0.1	43	40	60 - 140	108
		Fluoranthene	µg/L	0.1	46	40	60 - 140	114
		Pyrene	µg/L	0.1	46	40	60 - 140	115
		Benzo(a)pyrene	µg/L	0.1	49	40	60 - 140	122
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.6	0.5	40 - 130	114
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.5	0.5	40 - 130	102
		d14-p-terphenyl (Surrogate)	µg/L	-	0.6	0.5	40 - 130	116

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277215.002		Arsenic	µg/L	1	20	20	80 - 120	100
		Cadmium	µg/L	0.1	21	20	80 - 120	103
		Chromium	µg/L	1	21	20	80 - 120	105
		Copper	µg/L	1	21	20	80 - 120	106
		Lead	µg/L	1	20	20	80 - 120	99
		Nickel	µg/L	1	22	20	80 - 120	110
		Zinc	µg/L	5	21	20	80 - 120	107
LB277215.026		Arsenic	µg/L	1	21	20	80 - 120	105
		Cadmium	µg/L	0.1	20	20	80 - 120	101
		Chromium	µg/L	1	21	20	80 - 120	103
		Copper	µg/L	1	20	20	80 - 120	101
		Lead	µg/L	1	19	20	80 - 120	96
		Nickel	µg/L	1	21	20	80 - 120	103
		Zinc	µg/L	5	19	20	80 - 120	97

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277246.002		TRH C10-C14	µg/L	50	1300	1200	60 - 140	112
		TRH C15-C28	µg/L	200	1400	1200	60 - 140	116
		TRH C29-C36	µg/L	200	1400	1200	60 - 140	116
	TRH F Bands	TRH >C10-C16	µg/L	60	1400	1200	60 - 140	118
		TRH >C16-C34 (F3)	µg/L	500	1400	1200	60 - 140	113
		TRH >C34-C40 (F4)	µg/L	500	700	600	60 - 140	117

VOCs in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277517.002	Halogenated	1,1-dichloroethene	µg/L	0.5	47	45.45	60 - 140	103
	Aliphatics	1,2-dichloroethane	µg/L	0.5	55	45.45	60 - 140	120
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	48	45.45	60 - 140	105
	Halogenated	Chlorobenzene	µg/L	0.5	60	45.45	60 - 140	133
	Monocyclic	Benzene	µg/L	0.5	40	45.45	60 - 140	89
	Aromatic	Toluene	µg/L	0.5	34	45.45	60 - 140	76
		Ethylbenzene	µg/L	0.5	39	45.45	60 - 140	87
		m/p-xylene	µg/L	1	67	90.9	60 - 140	73
		o-xylene	µg/L	0.5	33	45.45	60 - 140	74
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.9	10	60 - 140	99
		d8-toluene (Surrogate)	µg/L	-	9.9	10	70 - 130	99

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277517.002	Surrogates	Bromofluorobenzene (Surrogate)	µg/L	-	9.9	10	70 - 130	99
	Trihalomethan	Chloroform (THM)	µg/L	0.5	57	45.45	60 - 140	125
LB277709.002	Monocyclic	Benzene	µg/L	0.5	51	45.45	60 - 140	112
	Aromatic	Toluene	µg/L	0.5	59	45.45	60 - 140	130
		Ethylbenzene	µg/L	0.5	51	45.45	60 - 140	111
		m/p-xylene	µg/L	1	100	90.9	60 - 140	111
		o-xylene	µg/L	0.5	50	45.45	60 - 140	111
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.3	10	60 - 140	103
		d8-toluene (Surrogate)	µg/L	-	12.6	10	70 - 130	126
		Bromofluorobenzene (Surrogate)	µg/L	-	11.6	10	70 - 130	116

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277517.002		TRH C6-C10	µg/L	50	810	946.63	60 - 140	86
		TRH C6-C9	µg/L	40	810	818.71	60 - 140	99
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.9	10	60 - 140	99
		d8-toluene (Surrogate)	µg/L	-	9.9	10	70 - 130	99
		Bromofluorobenzene (Surrogate)	µg/L	-	9.9	10	70 - 130	99
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	600	639.67	60 - 140	93
LB277709.002		TRH C6-C10	µg/L	50	760	946.63	60 - 140	81
		TRH C6-C9	µg/L	40	660	818.71	60 - 140	80
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.3	10	60 - 140	103
		d8-toluene (Surrogate)	µg/L	-	12.6	10	70 - 130	126
		Bromofluorobenzene (Surrogate)	µg/L	-	11.6	10	70 - 130	116
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	450	639.67	60 - 140	70

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246059.001	LB277224.004	Mercury	mg/L	0.0001	0.0015	<0.0001	0.008	75

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246059.001	LB277215.004	Arsenic	µg/L	1	23	<1	20	113
		Cadmium	µg/L	0.1	19	0.1	20	94
		Copper	µg/L	1	17	<1	20	81
		Lead	µg/L	1	19	<1	20	93
		Nickel	µg/L	1	21	3	20	89
		Zinc	µg/L	5	29	12	20	83

VOCs in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246088.007	LB277517.028	Monocyclic	Benzene	µg/L	0.5	52	<0.5	45.45	114
		Aromatic	Toluene	µg/L	0.5	53	<0.5	45.45	116
			Ethylbenzene	µg/L	0.5	51	<0.5	45.45	113
			m/p-xylene	µg/L	1	100	<1	90.9	111
			o-xylene	µg/L	0.5	51	<0.5	45.45	113
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	59	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	8.7	11.2	-	87
			d8-toluene (Surrogate)	µg/L	-	9.1	9.5	-	91
			Bromofluorobenzene (Surrogate)	µg/L	-	9.6	11.3	-	96
		Totals	Total BTEX	µg/L	3	310	<3	-	-

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246088.007	LB277517.028		TRH C6-C10	µg/L	50	1000	<50	946.63	106
			TRH C6-C9	µg/L	40	870	<40	818.71	106
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	11.2	-	87
			d8-toluene (Surrogate)	µg/L	-	0.0	9.5	-	91
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	11.3	-	96
		VPH F	Benzene (F0)	µg/L	0.5		<0.5	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	700	<50	639.67	109

MATRIX SPIKE DUPLICATES

SE246140 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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SGS EHS Sydney COC

SE246140

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	**Foundation Earth Sciences** **PO Box 4405, East Gosford NSW 2250** **email: ben@foundationes.com.au** **michael@foundationes.com.au; reece@foundationes.com.au** **ph: +61466 385 221**	**Project Manager:**	Michael Silk	**Project #: E3019**	
		Sampled By:	KV	**Project Name: East Gosford**	
Delivery Details:	**SGS Laboratories Pty Ltd** **Unit 16, 33 Maddox Street, Alexandria NSW 2015** **email: au.samplereceipt@sgs.com** **ph: +612 8594 0400**	**Purchase Order #:**	N/A	**Quote #:**	
		Page #:	1	**Turnaround: Standard**	

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					ph	CEC		HM	TRH	BTEXN	PAH (low)		VOC		TRH (C6-C10) & BTEXN	Phenol		Suites	
1	GW1	-	17.04.2023	Water				X	X	X	X		X					CL12 & CL18	Keep
2	GW2	-	17.04.2023	Water				X	X	X	X		X					CL12 & CL18	Keep
3	GW3	-	17.04.2023	Water				X	X	X	X		X					CL12 & CL18	Keep
4	D1	-	17.04.2023	Water				X	X	X	X		X					CL12 & CL18	Keep
5	TS1	-	17.04.2023	Water									X		X			-	Keep
6	TB1	-	17.04.2023	Water									X		X			-	Keep

Special Directions and Coments: FOUND - IE - MAR 23 - 328961

Relinquished by	KV	**Received By**	
Signature		**Signature**	
Date	18.04.2023	**Date**	18/4/23 @ 16:40 8°C CP

source:SE_Autoscan.pdf page:1 SGS Ref: SE246140_COC

SAMPLE RECEIPT ADVICE

SE246140

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford**
Order Number	**E3019**
Samples	6

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 18/4/2023
Report Due	Wed 26/4/2023
SGS Reference	**SE246140**

SUBMISSION DETAILS

This is to confirm that 6 samples were received on Tuesday 18/4/2023. Results are expected to be ready by COB Wednesday 26/4/2023.
Please quote SGS reference SE246140 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	6 Water	Date documentation received	18/4/2023
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	8.0°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

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

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SAMPLE RECEIPT ADVICE

SE246140

CLIENT DETAILS

Client FOUNDATION EARTH SCIENCES PTY LTD

Project E3019 East Gosford

SUMMARY OF ANALYSIS

No.	Sample ID	Low Level PAH (Poly Aromatic Hydrocarbons) in	Mercury (dissolved) in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	GW1	23	1	22	7	9	77	7
002	GW2	23	1	22	7	9	77	7
003	GW3	23	1	22	7	9	77	7
004	D1	23	1	22	7	9	77	7
005	TS1	-	-	-	-	-	11	-
006	TB1	-	-	-	-	-	77	7

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 .

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford - Additional**
Order Number	**E3019**
Samples	6

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	**SE246140A R0**
Date Received	2/5/2023
Date Reported	4/5/2023

COMMENTS

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

SIGNATORIES

Dong LIANG

Metals/Inorganics Team Leader

Ammonia Nitrogen by Discrete Analyser [AN291] Tested: 3/5/2023

PARAMETER	UOM	LOR	GW1 WATER - 17/4/2023 SE246140A.001	GW2 WATER - 17/4/2023 SE246140A.002	GW3 WATER - 17/4/2023 SE246140A.003	D1 WATER - 17/4/2023 SE246140A.004
Ammonia Nitrogen, NH_3 as N	mg/L	0.01	**0.35**	<0.01	**0.05**	**0.23**

METHOD	METHODOLOGY SUMMARY
AN291	Ammonia in solution reacts with hypochlorite ions from Sodium Dichloroisocyanuate, and salicylate in the presence of Sodium Nitroprusside to form indophenol blue and measured at 670 nm by Discrete Analyser.

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.		
***	Indicates that both * and ** apply.				

Unless it is reported that sampling has been performed by SGS, the samples have been 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 and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE246140A R0

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
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Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford - Additional**
Order Number	**E3019**
Samples	6

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	**SE246140A R0**
Date Received	02 May 2023
Date Reported	04 May 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	4 Water	Date documentation received	2/5/2023@1:35PM
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	8.0°C	Turnaround time requested	Two Days
Sample cooling method	Ice Bricks		

HOLDING TIME SUMMARY

SE246140A R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Ammonia Nitrogen by Discrete Analyser

Method: ME-(AU)-[ENV]AN291

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1	SE246140A.001	LB278356	17 Apr 2023	02 May 2023	15 May 2023	03 May 2023	15 May 2023	03 May 2023
GW2	SE246140A.002	LB278356	17 Apr 2023	02 May 2023	15 May 2023	03 May 2023	15 May 2023	03 May 2023
GW3	SE246140A.003	LB278356	17 Apr 2023	02 May 2023	15 May 2023	03 May 2023	15 May 2023	03 May 2023
D1	SE246140A.004	LB278356	17 Apr 2023	02 May 2023	15 May 2023	03 May 2023	15 May 2023	03 May 2023

SURROGATES

SE246140A R0

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Ammonia Nitrogen by Discrete Analyser — **Method: ME-(AU)-[ENV]AN291**

Sample Number	Parameter	Units	LOR	Result
LB278356.001	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	<0.01

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Ammonia Nitrogen by Discrete Analyser — **Method: ME-(AU)-[ENV]AN291**

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246730.001	LB278356.014	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	0.8617	0.8629	16	0
SE246751.007	LB278356.025	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	1.4038	1.4116	16	1

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Ammonia Nitrogen by Discrete Analyser — **Method: ME-(AU)-[ENV]AN291**

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278356.002	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	2.5	2.5	80 - 120	99

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Ammonia Nitrogen by Discrete Analyser — **Method: ME-(AU)-[ENV]AN291**

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246140A.001	LB278356.004	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	2.5	0.35	2.5	87

MATRIX SPIKE DUPLICATES

SE246140A R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	**Foundation Earth Sciences** **PO Box 4405, East Gosford NSW 2250** **email: ben@foundationes.com.au** **michael@foundationes.com.au; reece@foundationes.com.au** **ph: +61466 385 221**	**Project Manager:**	Michael Silk	**Project #: E3019**	
		Sampled By:	KV	**Project Name: East Gosford**	
Delivery Details:	**SGS Laboratories Pty Ltd** **Unit 16, 33 Maddox Street, Alexandria NSW 2015** **email: au.samplereceipt@sgs.com** **ph: +612 8594 0400**	**Purchase Order #:**	N/A	**Quote #:**	
		Page #:	1	**Turnaround: 2 day**	

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					ph	CEC		HM	TRH	BTEXN	PAH (low)		VOC	Ammonia	TRH (C6-C10) & BTEXN	Phenol		Suites	
1	GW1	-	17.04.2023	Water										X					Keep
2	GW2	-	17.04.2023	Water										X					Keep
3	GW3	-	17.04.2023	Water										X					Keep
4	D1	-	17.04.2023	Water										X					Keep
																		-	Keep
																		-	Keep

Special Directions and Coments: FOUND - IE - MAR 23 - 328961

Relinquished by	MS	**Received By**	
Signature	MS	**Signature**	
Date	02.05.2023	**Date**	2/5/23 @ 1.35 pm

SGS EHS Alexandria Laboratory

SE246140A COC

Received: 02 – May – 2023

source:SE_Autoscan.pdf page:1 SGS Ref: SE246140A_COC

SAMPLE RECEIPT ADVICE

SE246140A

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford - Additional**
Order Number	**E3019**
Samples	6

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 2/5/2023
Report Due	Thu 4/5/2023
SGS Reference	**SE246140A**

SUBMISSION DETAILS

This is to confirm that 6 samples were received on Tuesday 2/5/2023. Results are expected to be ready by COB Thursday 4/5/2023. Please quote SGS reference SE246140A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	4 Water	Date documentation received	2/5/2023@1:35PM
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	8.0°C	Turnaround time requested	Two Days
Sample cooling method	Ice Bricks		

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

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SAMPLE RECEIPT ADVICE

SE246140A

CLIENT DETAILS

Client FOUNDATION EARTH SCIENCES PTY LTD

Project E3019 East Gosford - Additional

SUMMARY OF ANALYSIS

No.	Sample ID	Ammonia Nitrogen by Discrete Analyser
001	GW1	1
002	GW2	1
003	GW3	1
004	D1	1

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 .

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Huong Crawford
Client	SGS I&E SYDNEY
Address	Unit 16, 33 Maddox Street Alexandria NSW 2015
Telephone	02 8594 0400
Facsimile	02 8594 0499
Email	au.environmental.sydney@sgs.com
Project	**E3019 East Gosford**
Order Number	**SE246356**
Samples	4

LABORATORY DETAILS

Manager	Adam Atkinson
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Telephone	+61395743200
Facsimile	+61395743399
Email	Au.SampleReceipt.Melbourne@sgs.com
SGS Reference	**ME333737 R0**
Date Received	27 Apr 2023
Date Reported	01 May 2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(14420).

SIGNATORIES

Andrew WRIGHT
Senior Chemist

Parameter	Units	LOR	Sample Number: ME333737.001 Sample Matrix: Water Sample Date: 19 Apr 2023 Sample Name: SE246356.001	ME333737.002 Water 19 Apr 2023 SE246356.002	ME333737.003 Water 19 Apr 2023 SE246356.003	ME333737.004 Water 19 Apr 2023 SE246356.004
Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples	**Method: MA-1523**	**Tested: 28/4/2023**				
Perfluorobutanoic acid (PFBA)	µg/L	0.002	**0.003**	**0.005**	<0.002	<0.002
Perfluoropentanoic acid (PFPeA)	µg/L	0.002	**0.009**	<0.002	<0.002	<0.002
Perfluorohexanoic acid (PFHxA)	µg/L	0.002	**0.013**	<0.002	<0.002	<0.002
Perfluoroheptanoic acid (PFHpA)	µg/L	0.002	**0.005**	<0.002	<0.002	<0.002
Perfluorooctanoic Acid (PFOA)	µg/L	0.002	**0.007**	**0.004**	<0.002	**0.003**
Perfluorononanoic acid (PFNA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorodecanoic acid (PFDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluoroundecanoic acid (PFUnA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorododecanoic acid (PFDoA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorohexadecanoic acid (PFHxDA)	µg/L	0.008	<0.008	<0.008	<0.008	<0.008
Perfluorobutane sulfonate (PFBS)	µg/L	0.004	**0.016**	<0.004	<0.004	<0.004
Perfluoropentane sulfonate (PFPeS)	µg/L	0.004	**0.004**	<0.004	<0.004	<0.004
Perfluorohexane sulfonate (PFHxS)	µg/L	0.002	**0.065**	**0.006**	**0.003**	**0.004**
Perfluoroheptane sulfonate (PFHpS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonate (PFOS)	µg/L	0.002	**0.059**	**0.024**	<0.002	**0.011**
Sum of PFHxS and PFOS	µg/L	0.002	**0.12**	**0.030**	**0.003**	**0.015**
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	µg/L	0.002	**0.13**	**0.034**	**0.003**	**0.019**
Sum of US EPA PFAS (PFOS+PFOA)	µg/L	0.002	**0.066**	**0.028**	<0.002	**0.015**
Perfluorononane sulfonate (PFNS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorodecane sulfonate (PFDS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorododecane sulfonate (PFDoS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonamide (PFOSA)	µg/L	0.008	<0.008	<0.008	<0.008	<0.008
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
2-(N-Methylperfluorooctane sulfonamido)-ethanol	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Methylperfluorooctanesulfonamidoacetic acid	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Ethylperfluorooctanesulfonamidoacetic Acid	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Total of PFAS (n=30)	µg/L	0.04	**0.18**	<0.04	<0.04	<0.04
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	**100**	**100**	**99**	**101**
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	**100**	**98**	**95**	**95**
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	**99**	**94**	**108**	**102**
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	**105**	**94**	**107**	**101**
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	**95**	**94**	**104**	**104**
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	**103**	**98**	**104**	**100**
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	**124**	**110**	**114**	**118**
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	**57**	**75**	**68**	**75**
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	**44**	**68**	**53**	**67**
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	**35**	**61**	**44**	**51**
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	**41**	**56**	**21**	**24**
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	**82**	**77**	**97**	**93**
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	**90**	**86**	**94**	**98**
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	**101**	**107**	**98**	**99**
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	**59**	**61**	**91**	**90**
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	**89**	**90**	**90**	**83**
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	**106**	**95**	**113**	**106**
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	**105**	**123**	**94**	**114**
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	**70**	**91**	**65**	**63**
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	**125**	**118**	**111**	**114**
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	**75**	**106**	**70**	**103**
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	**46**	**61**	**56**	**68**
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	**56**	**61**	**76**	**79**
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	**63**	**90**	**55**	**67**

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Perfluorobutanoic acid (PFBA)	LB061267	µg/L	0.002	<0.002	0%	NA
Perfluoropentanoic acid (PFPeA)	LB061267	µg/L	0.002	<0.002	0%	NA
Perfluorohexanoic acid (PFHxA)	LB061267	µg/L	0.002	<0.002	0%	NA
Perfluoroheptanoic acid (PFHpA)	LB061267	µg/L	0.002	<0.002	0%	93%
Perfluorooctanoic Acid (PFOA)	LB061267	µg/L	0.002	<0.002	0%	83%
Perfluorononanoic acid (PFNA)	LB061267	µg/L	0.004	<0.004	0%	115%
Perfluorodecanoic acid (PFDA)	LB061267	µg/L	0.004	<0.004	0%	77%
Perfluoroundecanoic acid (PFUnA)	LB061267	µg/L	0.004	<0.004	0%	81%
Perfluorododecanoic acid (PFDoA)	LB061267	µg/L	0.004	<0.004	0%	81%
Perfluorotridecanoic acid (PFTrDA)	LB061267	µg/L	0.004	<0.004	0%	63%
Perfluorotetradecanoic acid (PFTeDA)	LB061267	µg/L	0.004	<0.004	0%	76%
Perfluorohexadecanoic acid (PFHxDA)	LB061267	µg/L	0.008	<0.008	0%	NA
Perfluorobutane sulfonate (PFBS)	LB061267	µg/L	0.004	<0.004	0%	NA
Perfluoropentane sulfonate (PFPeS)	LB061267	µg/L	0.004	<0.004	0%	NA
Perfluorohexane sulfonate (PFHxS)	LB061267	µg/L	0.002	<0.002	0 - 13%	NA
Perfluoroheptane sulfonate (PFHpS)	LB061267	µg/L	0.002	<0.002	0%	NA
Perfluorooctane sulfonate (PFOS)	LB061267	µg/L	0.002	<0.002	0 - 53%	68%
Sum of PFHxS and PFOS	LB061267	µg/L	0.002	<0.002	0 - 29%	NA
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	LB061267	µg/L	0.002	<0.002	0 - 29%	NA
Sum of US EPA PFAS (PFOS+PFOA)	LB061267	µg/L	0.002	<0.002	0 - 53%	NA
Perfluorononane sulfonate (PFNS)	LB061267	µg/L	0.002	<0.002	0%	NA
Perfluorodecane sulfonate (PFDS)	LB061267	µg/L	0.002	<0.002	0%	NA
Perfluorododecane sulfonate (PFDoS)	LB061267	µg/L	0.002	<0.002	0%	NA
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	LB061267	µg/L	0.002	<0.002	0%	NA
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	LB061267	µg/L	0.002	<0.002	0%	NA
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	LB061267	µg/L	0.002	<0.002	0%	NA
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2 FTSA)	LB061267	µg/L	0.002	<0.002	0%	NA
Perfluorooctane sulfonamide (PFOSA)	LB061267	µg/L	0.008	<0.008	0%	68%
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	LB061267	µg/L	0.01	<0.01	0%	NA
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	LB061267	µg/L	0.01	<0.01	0%	NA
2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE)	LB061267	µg/L	0.01	<0.01	0%	NA
2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE)	LB061267	µg/L	0.01	<0.01	0%	NA
N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA)	LB061267	µg/L	0.01	<0.01	0%	NA
N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA)	LB061267	µg/L	0.01	<0.01	0%	NA
Total of PFAS (n=30)	LB061267	µg/L	0.04	<0.04	0%	NA
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	100%	0 - 4%	97%
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	91%	1 - 13%	88%
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	119%	6 - 7%	114%
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	105%	4 - 7%	109%
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	98%	1 - 6%	111%
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	99%	1 - 5%	99%
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	108%	14 - 45%	114%
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	72%	5 - 37%	71%
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	51%	10 - 36%	59%
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	34%	4 - 9%	49%
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	22%	3 - 62%	34%
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	135%	2 - 10%	109%
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	109%	10%	111%
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	106%	7 - 17%	109%
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	95%	9 - 11%	107%
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	105%	4 - 19%	78%
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	127%	9 - 56%	105%
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	82%	9 - 15%	129%
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	62%	1 - 10%	107%
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	100%	3 - 37%	126%
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	88%	10 - 13%	105%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples Method: MA-1523 (continued)

				MB	DUP %RPD	LCS %Recovery
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	53%	16 - 45%	68%
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	66%	9 - 29%	70%
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	LB061267	%	-	53%	13 - 33%	78%

METHOD	METHODOLOGY SUMMARY
MA-1523	This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
***	Indicates that both * and ** apply.	NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been 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 calcuated 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 and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ben Buckley
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Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford**
Order Number	**E3019**
Samples	4

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE246356 R0**
Date Received	20/4/2023
Date Reported	1/5/2023

COMMENTS

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

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Report No. ME333737

SIGNATORIES

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples [MA-1523] Tested: 1/5/2023

PARAMETER	UOM	LOR	GW1 WATER - 19/4/2023 SE246356.001	GW2 WATER - 19/4/2023 SE246356.002	GW3 WATER - 19/4/2023 SE246356.003	D1 WATER - 19/4/2023 SE246356.004
Perfluorobutanoic acid (PFBA)	µg/L	0.002	**0.003**	**0.005**	<0.002	<0.002
Perfluoropentanoic acid (PFPeA)	µg/L	0.002	**0.009**	<0.002	<0.002	<0.002
Perfluorohexanoic acid (PFHxA)	µg/L	0.002	**0.013**	<0.002	<0.002	<0.002
Perfluoroheptanoic acid (PFHpA)	µg/L	0.002	**0.005**	<0.002	<0.002	<0.002
Perfluorooctanoic Acid (PFOA)	µg/L	0.002	**0.007**	**0.004**	<0.002	**0.003**
Perfluorononanoic acid (PFNA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorodecanoic acid (PFDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluoroundecanoic acid (PFUnA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorododecanoic acid (PFDoA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorohexadecanoic acid (PFHxDA)	µg/L	0.008	<0.008	<0.008	<0.008	<0.008
Perfluorobutane sulfonate (PFBS)	µg/L	0.004	**0.016**	<0.004	<0.004	<0.004
Perfluoropentane sulfonate (PFPeS)	µg/L	0.004	**0.004**	<0.004	<0.004	<0.004
Perfluorohexane sulfonate (PFHxS)	µg/L	0.002	**0.065**	**0.006**	**0.003**	**0.004**
Perfluoroheptane sulfonate (PFHpS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonate (PFOS)	µg/L	0.002	**0.059**	**0.024**	<0.002	**0.011**
Sum of PFHxS and PFOS	µg/L	0.002	**0.12**	**0.030**	**0.003**	**0.015**
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	µg/L	0.002	**0.13**	**0.034**	**0.003**	**0.019**
Sum of US EPA PFAS (PFOS+PFOA)	µg/L	0.002	**0.066**	**0.028**	<0.002	**0.015**
Perfluorononane sulfonate (PFNS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorodecane sulfonate (PFDS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorododecane sulfonate (PFDoS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonamide (PFOSA)	µg/L	0.008	<0.008	<0.008	<0.008	<0.008
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
2-(N-Methylperfluorooctane sulfonamido)-ethanol	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Methylperfluorooctanesulfonamidoacetic acid	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Ethylperfluorooctanesulfonamidoacetic Acid	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Total of PFAS (n=30)	µg/L	0.04	**0.18**	<0.04	<0.04	<0.04

METHOD	METHODOLOGY SUMMARY
MA-1523	This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification.

FOOTNOTES

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

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Solid samples expressed on a dry weight basis.

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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 and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE246356 R0

CLIENT DETAILS

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Email	ben@foundationes.com.au
Project	**E3019 East Gosford**
Order Number	**E3019**
Samples	4

LABORATORY DETAILS

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SGS Reference	**SE246356 R0**
Date Received	20 Apr 2023
Date Reported	01 May 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	4 Water	Date documentation received	26/4/2023@11:58an
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	3°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

HOLDING TIME SUMMARY

SE246356 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

No holding time data is available for this job.

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples — **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	35
	GW2	SE246356.002	%	10 - 150%	61
	GW3	SE246356.003	%	10 - 150%	44
	D1	SE246356.004	%	10 - 150%	51
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	59
	GW2	SE246356.002	%	10 - 150%	61
	GW3	SE246356.003	%	10 - 150%	91
	D1	SE246356.004	%	10 - 150%	90
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	89
	GW2	SE246356.002	%	10 - 150%	90
	GW3	SE246356.003	%	10 - 150%	90
	D1	SE246356.004	%	10 - 150%	83
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	106
	GW2	SE246356.002	%	10 - 150%	95
	GW3	SE246356.003	%	10 - 150%	113
	D1	SE246356.004	%	10 - 150%	106
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	44
	GW2	SE246356.002	%	10 - 150%	68
	GW3	SE246356.003	%	10 - 150%	53
	D1	SE246356.004	%	10 - 150%	67
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	41
	GW2	SE246356.002	%	10 - 150%	56
	GW3	SE246356.003	%	10 - 150%	21
	D1	SE246356.004	%	10 - 150%	24
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	82
	GW2	SE246356.002	%	10 - 150%	77
	GW3	SE246356.003	%	10 - 150%	97
	D1	SE246356.004	%	10 - 150%	93
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	90
	GW2	SE246356.002	%	10 - 150%	86
	GW3	SE246356.003	%	10 - 150%	94
	D1	SE246356.004	%	10 - 150%	98
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	95
	GW2	SE246356.002	%	10 - 150%	94
	GW3	SE246356.003	%	10 - 150%	104
	D1	SE246356.004	%	10 - 150%	104
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	100
	GW2	SE246356.002	%	10 - 150%	100
	GW3	SE246356.003	%	10 - 150%	99
	D1	SE246356.004	%	10 - 150%	101
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	105
	GW2	SE246356.002	%	10 - 150%	94
	GW3	SE246356.003	%	10 - 150%	107
	D1	SE246356.004	%	10 - 150%	101
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	99
	GW2	SE246356.002	%	10 - 150%	94
	GW3	SE246356.003	%	10 - 150%	108
	D1	SE246356.004	%	10 - 150%	102
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	100
	GW2	SE246356.002	%	10 - 150%	98
	GW3	SE246356.003	%	10 - 150%	95
	D1	SE246356.004	%	10 - 150%	95
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	124
	GW2	SE246356.002	%	10 - 150%	110
	GW3	SE246356.003	%	10 - 150%	114
	D1	SE246356.004	%	10 - 150%	118
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	57
	GW2	SE246356.002	%	10 - 150%	75
	GW3	SE246356.003	%	10 - 150%	68
	D1	SE246356.004	%	10 - 150%	75
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	101

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples (continued) **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	GW2	SE246356.002	%	10 - 150%	107
	GW3	SE246356.003	%	10 - 150%	98
	D1	SE246356.004	%	10 - 150%	99
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	105
	GW2	SE246356.002	%	10 - 150%	123
	GW3	SE246356.003	%	10 - 150%	94
	D1	SE246356.004	%	10 - 150%	114
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	103
	GW2	SE246356.002	%	10 - 150%	98
	GW3	SE246356.003	%	10 - 150%	104
	D1	SE246356.004	%	10 - 150%	100
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	70
	GW2	SE246356.002	%	10 - 150%	91
	GW3	SE246356.003	%	10 - 150%	65
	D1	SE246356.004	%	10 - 150%	63
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	56
	GW2	SE246356.002	%	10 - 150%	61
	GW3	SE246356.003	%	10 - 150%	76
	D1	SE246356.004	%	10 - 150%	79
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	125
	GW2	SE246356.002	%	10 - 150%	118
	GW3	SE246356.003	%	10 - 150%	111
	D1	SE246356.004	%	10 - 150%	114
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	63
	GW2	SE246356.002	%	10 - 150%	90
	GW3	SE246356.003	%	10 - 150%	55
	D1	SE246356.004	%	10 - 150%	67
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	75
	GW2	SE246356.002	%	10 - 150%	106
	GW3	SE246356.003	%	10 - 150%	70
	D1	SE246356.004	%	10 - 150%	103
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	GW1	SE246356.001	%	10 - 150%	46
	GW2	SE246356.002	%	10 - 150%	61
	GW3	SE246356.003	%	10 - 150%	56
	D1	SE246356.004	%	10 - 150%	68

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

No method blanks were required for this job.

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

No duplicates were required for this job.

LABORATORY CONTROL SAMPLES

SE246356 R0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

No laboratory control standards were required for this job.

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spikes were required for this job.

MATRIX SPIKE DUPLICATES

SE246356 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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E-MAILED
26/4/23 @ 11:58 am

SGS EHS Alexandria Laboratory

SE246356 COC
Received: 20 – Apr – 2023

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; reece@foundationes.com.au ph: +61466 385 221	**Project Manager:**	Michael Silk	**Project #:** E3019	
		Sampled By:	KV	**Project Name:** East Gosford	
Delivery Details:	SGS Laboratories Pty Ltd Unit 16, 33 Maddox Street, Alexandria NSW 2015 email: au.samplereceipt@sgs.com ph: +612 8594 0400	**Purchase Order #:**	N/A	**Quote #:**	
		Page #:	1	**Turnaround:** Standard	

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					ph	CEC		HM	TRH	BTEXN	PAH (low)		VOC	PFAS	TRH (C6-C10) & BTEXN	Phenol		Suites	
1	GW1	-	19.04.2023	Water										X					Keep
2	GW2	-	19.04.2023	Water										X					Keep
3	GW3	-	19.04.2023	Water										X					Keep
4	D1	-	19.04.2023	Water										X					Keep
																		-	Keep
																		-	Keep

Special Directions and Coments: FOUND - IE - MAR 23 - 328961

Relinquished by	KV	**Received By**	
Signature		**Signature**	
Date	20.04.2023	**Date**	20/4/23 @ 4.45p

source:SE_Autoscan.pdf page:1 SGS Ref:SE246356_COC

CHAIN OF CUSTODY RECORD

COC#: SE246356

Owner job:

Ship to: XML	Project Name:	Due date: 3/05/2023 4:45:00 PM
	Client: FOUNDATION EARTH SCIEN 24429703_14436737	Send Results to: AUENVSE
	Sampler Name: KV	
Carrier:	Airbill #:	

Field Sample ID	Client ID	Date sampling	Time	Matrix	# of Containers	Analyses Requested										Comments
						152301										
SE246356.001	GW1	19/04/2023	0:00:00	Water		X										
SE246356.002	GW2	19/04/2023	0:00:00	Water		X										
SE246356.003	GW3	19/04/2023	0:00:00	Water		X										
SE246356.004	D1	19/04/2023	0:00:00	Water		X										

SGS Alexandria Environmental

SE246356 SUBCON

Received: 20 – Apr – 2023

Sample Condition Upon Receipt at Laboratory:	Cooler temperature:
Special Instructions/Comments: Job Booked by: Emily 26/4/23 Loggin Checked by:	

#1 Released by: (Sig)	Date:	#2 Released by: (Sig)	Date:	#3 Released by: (Sig)	Date:
Company Name:	Time	Company Name:	Time	Company Name:	Time
#1 Received by: (Sig)	Date	#2 Received by: (Sig)	Date	#3 Received by: (Sig)	Date
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:

source:SE_Autoscan.pdf page:1 SGS Ref:SE246356_SUBCON

Envirolab Services Pty Ltd
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ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 320919

Client Details

Client	Foundation Earth Sciences Pty Ltd
Attention	Michael Silk
Address	PO Box 4405, East Gosford, NSW, 2250

Sample Details

Your Reference	**E3019 East Gosford**
Number of Samples	2 Soil
Date samples received	14/04/2023
Date completed instructions received	14/04/2023

Analysis Details

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

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

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

Report Details

Date results requested by	21/04/2023
Date of Issue	20/04/2023

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Results Approved By
Diego Bigolin, Inorganics Supervisor
Hannah Nguyen, Metals Supervisor
Kyle Gavrily, Senior Chemist
Liam Timmins, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date extracted	-	18/04/2023	18/04/2023
Date analysed	-	19/04/2023	19/04/2023
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	99	89

svTRH (C10-C40) in Soil			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date extracted	-	18/04/2023	18/04/2023
Date analysed	-	18/04/2023	19/04/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	85	86

PAHs in Soil			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date extracted	-	18/04/2023	18/04/2023
Date analysed	-	18/04/2023	18/04/2023
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	97	103

Organochlorine Pesticides in soil			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date extracted	-	18/04/2023	18/04/2023
Date analysed	-	18/04/2023	18/04/2023
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	102	107

Organophosphorus Pesticides in Soil			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date extracted	-	18/04/2023	18/04/2023
Date analysed	-	18/04/2023	18/04/2023
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	102	107

PCBs in Soil			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date extracted	-	18/04/2023	18/04/2023
Date analysed	-	18/04/2023	18/04/2023
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	102	107

Acid Extractable metals in soil			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date prepared	-	18/04/2023	18/04/2023
Date analysed	-	18/04/2023	18/04/2023
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	7	8
Copper	mg/kg	3	1
Lead	mg/kg	8	11
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	6	1
Zinc	mg/kg	13	15

Misc Soil - Inorg			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date prepared	-	18/04/2023	18/04/2023
Date analysed	-	18/04/2023	18/04/2023
Total Phenolics (as Phenol)	mg/kg	<5	<5

Moisture			
Our Reference		320919-1	320919-2
Your Reference	UNITS	SS1	SS2
Date Sampled		13/04/2023	13/04/2023
Type of sample		Soil	Soil
Date prepared	-	17/04/2023	17/04/2023
Date analysed	-	18/04/2023	18/04/2023
Moisture	%	13	13

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

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

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	320919-2
Date extracted	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Date analysed	-			19/04/2023	1	19/04/2023	19/04/2023		19/04/2023	19/04/2023
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	99	93
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	99	93
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	104	98
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	101	94
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	96	89
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	98	92
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	104	97
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	103	1	99	91	8	91	84

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	320919-2
Date extracted	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Date analysed	-			18/04/2023	1	18/04/2023	19/04/2023		18/04/2023	19/04/2023
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	133	130
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	89	85
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	90
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	133	130
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	89	85
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	90
Surrogate o-Terphenyl	%		Org-020	83	1	85	84	1	100	91

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	320919-2
Date extracted	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Date analysed	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	95
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	101
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	93
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	100
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	100
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	99
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	105	99
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	100	98
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	99	1	97	98	1	100	101

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	320919-2
Date extracted	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Date analysed	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	108
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	114
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	117	111
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	95	93
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	98	98
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	109
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	120	118
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	105
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	92
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	97
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	102	1	102	101	1	101	104

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	320919-2
Date extracted	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Date analysed	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	117	111
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	99
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	99
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	103
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	102
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	99
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	86
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	102	1	102	101	1	101	104

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	320919-2
Date extracted	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Date analysed	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	88	116
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	102	1	102	101	1	101	104

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	320919-2
Date prepared	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Date analysed	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	18/04/2023
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	102	87
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	106	92
Chromium	mg/kg	1	Metals-020	<1	1	7	5	33	103	95
Copper	mg/kg	1	Metals-020	<1	1	3	4	29	100	97
Lead	mg/kg	1	Metals-020	<1	1	8	7	13	102	95
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	113	114
Nickel	mg/kg	1	Metals-020	<1	1	6	5	18	103	92
Zinc	mg/kg	1	Metals-020	<1	1	13	11	17	108	99

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	[NT]
Date analysed	-			18/04/2023	1	18/04/2023	18/04/2023		18/04/2023	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	1	<5	<5	0	100	[NT]

Result Definitions

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

Quality Control Definitions

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

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; reece@foundationes.com.au ph: +61466 385 221	**Project Manager:**	Michael Silk
		Sampled By:	KV/DG
Delivery Details:	Envirolab Pty Ltd 12 Ashley Street, Chatswood NSW 2067 email: ahle@envirolab.com.au ph: +612 9910 6200	**Purchase Order #:**	N/A
		Page #:	1 of 1

Project #: E3019

Project Name: East Gosford

Quote #:

Turnaround: Standard

#	Sample ID	Depth	Date Sampled	Matrix	Analytes																Sample Comments
					ph	CEC	%CLAY	Heavy Metals (8)	TRH	BTEXN	PAH	OC	PCB	OPP	Phenol		Asbestos ID	TRH C6-C10 & BTEXN	OCP PCB	Envirolab Suites	
1	SS1	-	13.04.2023	Soil				X	X	X	X	X	X	X	x					Combo 8	Keep
2	SS2	-	13.04.2023	Soil				X	X	X	X	X	X	X	x					Combo 8	Keep

Special Directions and Coments:

Relinquished by	KV	Received By	EW
Signature	KV	Signature	EW
Date	14.04.2023	Date	14/4/23

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

ENVIROLAB

Job No: 320919

Date Received: 14/4/23
Time Received: ~~1040~~ 1700 EW.
Received By: EW
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

3168
NOTTING HILL

via ME3 to ME3
UFC001952293
Itm:00301512001952293001

TNT - Road Express
Sort Bin: 30272

26-04-2023 | 1 of 5 | Item Wt. 5kg | Ex SW2

Does Not Contain Dangerous Goods

To: SGS Melbourne
Sample Receipt
10/585 Blackburn Road

NOTTING HILL VIC

From: SGS ALEXANDRIA, Sample Receipt (Sam) 0285940400, 16/33 Maddox Street , ALEXANDRIA

Senders Ref:
5058.201

Ref:
MS22633836

Special Instructions:

CN: UFC001952293 Itm: 00301512001952293001 1 of 5 TO: SGS Melbourne Sample Receipt 0395743200 10/585 Blackburn Road NOTTING HILL VIC 3168	Road Express Con Note Wt: 27kg FROM: SGS ALEXANDRIA Sample Receipt (Sam) 0285940400 16/33 Maddox Street ALEXANDRIA NSW 2015

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STATEMENT OF QA/QC PERFORMANCE

SE246007 R0

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Ben Buckley	Manager	Huong Crawford
Client	FOUNDATION EARTH SCIENCES PTY LTD	Laboratory	SGS Alexandria Environmental
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	(Not specified)	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	ben@foundationes.com.au	Email	au.environmental.sydney@sgs.com
Project	**E3019 East Gosford**	SGS Reference	**SE246007 R0**
Order Number	**E3019**	Date Received	14 Apr 2023
Samples	37	Date Reported	24 Apr 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	pH in soil (1:5)	2 items
Surrogate	Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	1 item
Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	3 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	3 items

SAMPLE SUMMARY

Sample counts by matrix	37 Soil	Date documentation received	14/4/2023
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.0°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

HOLDING TIME SUMMARY

SE246007 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3	SE246007.006	LB277387	13 Apr 2023	14 Apr 2023	11 May 2023	21 Apr 2023	11 May 2023	21 Apr 2023
BH3	SE246007.007	LB277387	13 Apr 2023	14 Apr 2023	11 May 2023	21 Apr 2023	11 May 2023	21 Apr 2023

Fibre Identification in soil

Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH2	SE246007.004	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH3	SE246007.006	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH4	SE246007.008	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH5	SE246007.009	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH6	SE246007.012	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH7	SE246007.013	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH8	SE246007.015	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH9	SE246007.017	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH10	SE246007.019	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH11	SE246007.021	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH12	SE246007.023	LB277266	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH13	SE246007.025	LB277266	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH14	SE246007.027	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH15	SE246007.028	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH16	SE246007.029	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH17	SE246007.031	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH18	SE246007.032	LB277266	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH19	SE246007.033	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH12	SE246007.023	LB277266	13 Apr 2023	14 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023
BH13	SE246007.025	LB277266	13 Apr 2023	14 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023
BH18	SE246007.032	LB277266	13 Apr 2023	14 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH1	SE246007.002	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH1	SE246007.003	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH2	SE246007.004	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH2	SE246007.005	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH3	SE246007.006	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH3	SE246007.007	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH4	SE246007.008	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH5	SE246007.009	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH5	SE246007.010	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH5	SE246007.011	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH6	SE246007.012	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH7	SE246007.013	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH7	SE246007.014	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH8	SE246007.015	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH8	SE246007.016	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH9	SE246007.017	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH9	SE246007.018	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH10	SE246007.019	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH10	SE246007.020	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH11	SE246007.021	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH11	SE246007.022	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH12	SE246007.023	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH12	SE246007.024	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH13	SE246007.025	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH13	SE246007.026	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH14	SE246007.027	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH15	SE246007.028	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023

HOLDING TIME SUMMARY

SE246007 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil (continued)

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH16	SE246007.029	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH16	SE246007.030	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH17	SE246007.031	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH18	SE246007.032	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH19	SE246007.033	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
D1	SE246007.034	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
D2	SE246007.035	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH1	SE246007.002	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH1	SE246007.003	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH2	SE246007.004	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH2	SE246007.005	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH3	SE246007.006	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH3	SE246007.007	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH4	SE246007.008	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH5	SE246007.009	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH5	SE246007.010	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH5	SE246007.011	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH6	SE246007.012	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH7	SE246007.013	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH7	SE246007.014	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH8	SE246007.015	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH8	SE246007.016	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH9	SE246007.017	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH9	SE246007.018	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH10	SE246007.019	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH10	SE246007.020	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH11	SE246007.021	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH11	SE246007.022	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH12	SE246007.023	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH12	SE246007.024	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH13	SE246007.025	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH13	SE246007.026	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH14	SE246007.027	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH15	SE246007.028	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH16	SE246007.029	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH16	SE246007.030	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH17	SE246007.031	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH18	SE246007.032	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH19	SE246007.033	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
D1	SE246007.034	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
D2	SE246007.035	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
TB1	SE246007.037	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

HOLDING TIME SUMMARY

SE246007 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3	SE246007.006	LB277422	13 Apr 2023	14 Apr 2023	20 Apr 2023	21 Apr 2023†	22 Apr 2023	21 Apr 2023
BH3	SE246007.007	LB277422	13 Apr 2023	14 Apr 2023	20 Apr 2023	21 Apr 2023†	22 Apr 2023	21 Apr 2023

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH1	SE246007.002	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH1	SE246007.003	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH2	SE246007.004	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH2	SE246007.005	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH3	SE246007.006	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH3	SE246007.007	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH4	SE246007.008	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH5	SE246007.009	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH5	SE246007.010	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH5	SE246007.011	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH6	SE246007.012	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH7	SE246007.013	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH7	SE246007.014	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH8	SE246007.015	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH8	SE246007.016	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH9	SE246007.017	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH9	SE246007.018	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH10	SE246007.019	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH10	SE246007.020	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH11	SE246007.021	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH11	SE246007.022	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH12	SE246007.023	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH12	SE246007.024	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH13	SE246007.025	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH13	SE246007.026	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH14	SE246007.027	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH15	SE246007.028	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH16	SE246007.029	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH16	SE246007.030	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH17	SE246007.031	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH18	SE246007.032	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH19	SE246007.033	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
D1	SE246007.034	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
D2	SE246007.035	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH1	SE246007.002	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH1	SE246007.003	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH2	SE246007.004	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH2	SE246007.005	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH3	SE246007.006	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH3	SE246007.007	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE246007.008	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.009	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.010	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.011	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH6	SE246007.012	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH7	SE246007.013	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH7	SE246007.014	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH8	SE246007.015	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH8	SE246007.016	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH9	SE246007.017	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH9	SE246007.018	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH10	SE246007.019	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH10	SE246007.020	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH11	SE246007.021	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH11	SE246007.022	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH12	SE246007.023	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH12	SE246007.024	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH13	SE246007.025	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH13	SE246007.026	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH14	SE246007.027	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH15	SE246007.028	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH16	SE246007.029	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH16	SE246007.030	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH17	SE246007.031	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH18	SE246007.032	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH19	SE246007.033	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
D1	SE246007.034	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
D2	SE246007.035	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
TS1	SE246007.036	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
TB1	SE246007.037	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH1	SE246007.002	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH1	SE246007.003	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH2	SE246007.004	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH2	SE246007.005	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH3	SE246007.006	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH3	SE246007.007	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH4	SE246007.008	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.009	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.010	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.011	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH6	SE246007.012	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH7	SE246007.013	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH7	SE246007.014	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH8	SE246007.015	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH8	SE246007.016	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH9	SE246007.017	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH9	SE246007.018	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH10	SE246007.019	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH10	SE246007.020	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH11	SE246007.021	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH11	SE246007.022	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH12	SE246007.023	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH12	SE246007.024	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH13	SE246007.025	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH13	SE246007.026	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH14	SE246007.027	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023

HOLDING TIME SUMMARY

SE246007 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH15	SE246007.028	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH16	SE246007.029	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH16	SE246007.030	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH17	SE246007.031	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH18	SE246007.032	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH19	SE246007.033	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
D1	SE246007.034	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
D2	SE246007.035	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
TS1	SE246007.036	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
TB1	SE246007.037	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH1	SE246007.001	%	60 - 130%	96
	BH1	SE246007.002	%	60 - 130%	98
	BH2	SE246007.004	%	60 - 130%	94
	BH2	SE246007.005	%	60 - 130%	101
	BH3	SE246007.006	%	60 - 130%	99
	BH3	SE246007.007	%	60 - 130%	95
	BH4	SE246007.008	%	60 - 130%	98
	BH5	SE246007.009	%	60 - 130%	93
	BH5	SE246007.010	%	60 - 130%	92
	BH5	SE246007.011	%	60 - 130%	97
	BH6	SE246007.012	%	60 - 130%	92
	BH7	SE246007.013	%	60 - 130%	96
	BH7	SE246007.014	%	60 - 130%	95
	BH8	SE246007.015	%	60 - 130%	92
	BH8	SE246007.016	%	60 - 130%	97
	BH9	SE246007.017	%	60 - 130%	96
	BH9	SE246007.018	%	60 - 130%	97
	BH10	SE246007.019	%	60 - 130%	93
	BH10	SE246007.020	%	60 - 130%	96
	BH11	SE246007.021	%	60 - 130%	100
	BH11	SE246007.022	%	60 - 130%	97
	BH12	SE246007.023	%	60 - 130%	99
	BH12	SE246007.024	%	60 - 130%	99
	BH13	SE246007.025	%	60 - 130%	97
	BH13	SE246007.026	%	60 - 130%	99
	BH14	SE246007.027	%	60 - 130%	106
	BH15	SE246007.028	%	60 - 130%	111
	BH16	SE246007.029	%	60 - 130%	103
	BH16	SE246007.030	%	60 - 130%	104
	BH17	SE246007.031	%	60 - 130%	103
	BH18	SE246007.032	%	60 - 130%	104
	BH19	SE246007.033	%	60 - 130%	104
	D1	SE246007.034	%	60 - 130%	107
	D2	SE246007.035	%	60 - 130%	105

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1	SE246007.001	%	60 - 130%	95
	BH2	SE246007.004	%	60 - 130%	92
	BH3	SE246007.006	%	60 - 130%	89
	BH5	SE246007.009	%	60 - 130%	91
	BH10	SE246007.019	%	60 - 130%	89
	BH13	SE246007.025	%	60 - 130%	89
	BH19	SE246007.033	%	60 - 130%	88
	D1	SE246007.034	%	60 - 130%	86
	D2	SE246007.035	%	60 - 130%	96
	TB1	SE246007.037	%	60 - 130%	100
d14-p-terphenyl (Surrogate)	BH1	SE246007.001	%	60 - 130%	109
	BH2	SE246007.004	%	60 - 130%	106
	BH3	SE246007.006	%	60 - 130%	105
	BH5	SE246007.009	%	60 - 130%	103
	BH10	SE246007.019	%	60 - 130%	104
	BH13	SE246007.025	%	60 - 130%	107
	BH19	SE246007.033	%	60 - 130%	106
	D1	SE246007.034	%	60 - 130%	104
	D2	SE246007.035	%	60 - 130%	118
	TB1	SE246007.037	%	60 - 130%	112

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1	SE246007.001	%	70 - 130%	95
	BH1	SE246007.002	%	70 - 130%	92
	BH1	SE246007.003	%	70 - 130%	90
	BH2	SE246007.004	%	70 - 130%	92
	BH2	SE246007.005	%	70 - 130%	89
	BH3	SE246007.006	%	70 - 130%	89
	BH3	SE246007.007	%	70 - 130%	92
	BH4	SE246007.008	%	70 - 130%	92
	BH5	SE246007.009	%	70 - 130%	91
	BH5	SE246007.010	%	70 - 130%	90
	BH5	SE246007.011	%	70 - 130%	85
	BH6	SE246007.012	%	70 - 130%	91
	BH7	SE246007.013	%	70 - 130%	92
	BH7	SE246007.014	%	70 - 130%	91
	BH8	SE246007.015	%	70 - 130%	90
	BH8	SE246007.016	%	70 - 130%	89
	BH9	SE246007.017	%	70 - 130%	91
	BH9	SE246007.018	%	70 - 130%	88
	BH10	SE246007.019	%	70 - 130%	89
	BH10	SE246007.020	%	70 - 130%	90
	BH11	SE246007.021	%	70 - 130%	97
	BH11	SE246007.022	%	70 - 130%	91
	BH12	SE246007.023	%	70 - 130%	90
	BH12	SE246007.024	%	70 - 130%	88
	BH13	SE246007.025	%	70 - 130%	89
	BH13	SE246007.026	%	70 - 130%	92
	BH14	SE246007.027	%	70 - 130%	92
	BH15	SE246007.028	%	70 - 130%	90
	BH16	SE246007.029	%	70 - 130%	86
	BH16	SE246007.030	%	70 - 130%	92
	BH17	SE246007.031	%	70 - 130%	91
	BH18	SE246007.032	%	70 - 130%	92
	BH19	SE246007.033	%	70 - 130%	88
	D1	SE246007.034	%	70 - 130%	86
	D2	SE246007.035	%	70 - 130%	96
	TB1	SE246007.037	%	70 - 130%	100
d14-p-terphenyl (Surrogate)	BH1	SE246007.001	%	70 - 130%	109
	BH1	SE246007.002	%	70 - 130%	104
	BH1	SE246007.003	%	70 - 130%	103
	BH2	SE246007.004	%	70 - 130%	106
	BH2	SE246007.005	%	70 - 130%	105
	BH3	SE246007.006	%	70 - 130%	105
	BH3	SE246007.007	%	70 - 130%	106
	BH4	SE246007.008	%	70 - 130%	106
	BH5	SE246007.009	%	70 - 130%	103
	BH5	SE246007.010	%	70 - 130%	105
	BH5	SE246007.011	%	70 - 130%	103
	BH6	SE246007.012	%	70 - 130%	111
	BH7	SE246007.013	%	70 - 130%	102
	BH7	SE246007.014	%	70 - 130%	109
	BH8	SE246007.015	%	70 - 130%	105
	BH8	SE246007.016	%	70 - 130%	107
	BH9	SE246007.017	%	70 - 130%	120
	BH9	SE246007.018	%	70 - 130%	103
	BH10	SE246007.019	%	70 - 130%	104
	BH10	SE246007.020	%	70 - 130%	105
	BH11	SE246007.021	%	70 - 130%	114
	BH11	SE246007.022	%	70 - 130%	105
	BH12	SE246007.023	%	70 - 130%	107
	BH12	SE246007.024	%	70 - 130%	106
	BH13	SE246007.025	%	70 - 130%	107

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	BH13	SE246007.026	%	70 - 130%	107
	BH14	SE246007.027	%	70 - 130%	111
	BH15	SE246007.028	%	70 - 130%	107
	BH16	SE246007.029	%	70 - 130%	102
	BH16	SE246007.030	%	70 - 130%	105
	BH17	SE246007.031	%	70 - 130%	106
	BH18	SE246007.032	%	70 - 130%	107
	BH19	SE246007.033	%	70 - 130%	106
	D1	SE246007.034	%	70 - 130%	104
	D2	SE246007.035	%	70 - 130%	118
	TB1	SE246007.037	%	70 - 130%	112
d5-nitrobenzene (Surrogate)	BH1	SE246007.001	%	70 - 130%	97
	BH1	SE246007.002	%	70 - 130%	96
	BH1	SE246007.003	%	70 - 130%	95
	BH2	SE246007.004	%	70 - 130%	95
	BH2	SE246007.005	%	70 - 130%	95
	BH3	SE246007.006	%	70 - 130%	94
	BH3	SE246007.007	%	70 - 130%	95
	BH4	SE246007.008	%	70 - 130%	94
	BH5	SE246007.009	%	70 - 130%	94
	BH5	SE246007.010	%	70 - 130%	94
	BH5	SE246007.011	%	70 - 130%	90
	BH6	SE246007.012	%	70 - 130%	96
	BH7	SE246007.013	%	70 - 130%	95
	BH7	SE246007.014	%	70 - 130%	94
	BH8	SE246007.015	%	70 - 130%	93
	BH8	SE246007.016	%	70 - 130%	90
	BH9	SE246007.017	%	70 - 130%	95
	BH9	SE246007.018	%	70 - 130%	93
	BH10	SE246007.019	%	70 - 130%	96
	BH10	SE246007.020	%	70 - 130%	94
	BH11	SE246007.021	%	70 - 130%	98
	BH11	SE246007.022	%	70 - 130%	94
	BH12	SE246007.023	%	70 - 130%	91
	BH12	SE246007.024	%	70 - 130%	92
	BH13	SE246007.025	%	70 - 130%	93
	BH13	SE246007.026	%	70 - 130%	94
	BH14	SE246007.027	%	70 - 130%	96
	BH15	SE246007.028	%	70 - 130%	96
	BH16	SE246007.029	%	70 - 130%	91
	BH16	SE246007.030	%	70 - 130%	94
	BH17	SE246007.031	%	70 - 130%	93
	BH18	SE246007.032	%	70 - 130%	96
	BH19	SE246007.033	%	70 - 130%	95
	D1	SE246007.034	%	70 - 130%	96
	D2	SE246007.035	%	70 - 130%	86
	TB1	SE246007.037	%	70 - 130%	86

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH1	SE246007.001	%	60 - 130%	95
	BH1	SE246007.002	%	60 - 130%	98
	BH2	SE246007.004	%	60 - 130%	94
	BH2	SE246007.005	%	60 - 130%	101
	BH3	SE246007.006	%	60 - 130%	99
	BH3	SE246007.007	%	60 - 130%	95
	BH4	SE246007.008	%	60 - 130%	98
	BH5	SE246007.009	%	60 - 130%	93
	BH5	SE246007.010	%	60 - 130%	92
	BH5	SE246007.011	%	60 - 130%	97
	BH6	SE246007.012	%	60 - 130%	92

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PCBs in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH7	SE246007.013	%	60 - 130%	95
	BH7	SE246007.014	%	60 - 130%	95
	BH8	SE246007.015	%	60 - 130%	93
	BH8	SE246007.016	%	60 - 130%	96
	BH9	SE246007.017	%	60 - 130%	95
	BH9	SE246007.018	%	60 - 130%	97
	BH10	SE246007.019	%	60 - 130%	92
	BH10	SE246007.020	%	60 - 130%	100
	BH11	SE246007.021	%	60 - 130%	104
	BH11	SE246007.022	%	60 - 130%	101
	BH12	SE246007.023	%	60 - 130%	103
	BH12	SE246007.024	%	60 - 130%	103
	BH13	SE246007.025	%	60 - 130%	102
	BH13	SE246007.026	%	60 - 130%	103
	BH14	SE246007.027	%	60 - 130%	112
	BH15	SE246007.028	%	60 - 130%	115
	BH16	SE246007.029	%	60 - 130%	108
	BH16	SE246007.030	%	60 - 130%	109
	BH17	SE246007.031	%	60 - 130%	107
	BH18	SE246007.032	%	60 - 130%	108
	BH19	SE246007.033	%	60 - 130%	109
	D1	SE246007.034	%	60 - 130%	112
	D2	SE246007.035	%	60 - 130%	110

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples — **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 130%	59
	BH1	SE246007.003	%	0 - 130%	91
	BH2	SE246007.004	%	0 - 130%	61
	BH3	SE246007.006	%	0 - 130%	115
	BH5	SE246007.010	%	0 - 130%	62
	BH19	SE246007.033	%	0 - 130%	57
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	114
	BH1	SE246007.003	%	0 - 150%	107
	BH2	SE246007.004	%	0 - 150%	105
	BH3	SE246007.006	%	0 - 150%	120
	BH5	SE246007.010	%	0 - 150%	103
	BH19	SE246007.033	%	0 - 150%	75
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	85
	BH1	SE246007.003	%	0 - 150%	89
	BH2	SE246007.004	%	0 - 150%	92
	BH3	SE246007.006	%	0 - 150%	91
	BH5	SE246007.010	%	0 - 150%	78
	BH19	SE246007.033	%	0 - 150%	58
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	79
	BH1	SE246007.003	%	0 - 150%	71
	BH2	SE246007.004	%	0 - 150%	91
	BH3	SE246007.006	%	0 - 150%	67
	BH5	SE246007.010	%	0 - 150%	73
	BH19	SE246007.033	%	0 - 150%	72
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	60
	BH1	SE246007.003	%	0 - 150%	73
	BH2	SE246007.004	%	0 - 150%	55
	BH3	SE246007.006	%	0 - 150%	89
	BH5	SE246007.010	%	0 - 150%	67
	BH19	SE246007.033	%	0 - 150%	71
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	81
	BH1	SE246007.003	%	0 - 150%	128
	BH2	SE246007.004	%	0 - 150%	92
	BH3	SE246007.006	%	0 - 150%	183 †
	BH5	SE246007.010	%	0 - 150%	72

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued) **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	BH19	SE246007.033	%	0 - 150%	52
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	144
	BH1	SE246007.003	%	0 - 150%	134
	BH2	SE246007.004	%	0 - 150%	128
	BH3	SE246007.006	%	0 - 150%	142
	BH5	SE246007.010	%	0 - 150%	139
	BH19	SE246007.033	%	0 - 150%	128
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	104
	BH1	SE246007.003	%	0 - 150%	102
	BH2	SE246007.004	%	0 - 150%	100
	BH3	SE246007.006	%	0 - 150%	96
	BH5	SE246007.010	%	0 - 150%	89
	BH19	SE246007.033	%	0 - 150%	98
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	85
	BH1	SE246007.003	%	0 - 150%	87
	BH2	SE246007.004	%	0 - 150%	91
	BH3	SE246007.006	%	0 - 150%	87
	BH5	SE246007.010	%	0 - 150%	88
	BH19	SE246007.033	%	0 - 150%	96
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	98
	BH1	SE246007.003	%	0 - 150%	95
	BH2	SE246007.004	%	0 - 150%	96
	BH3	SE246007.006	%	0 - 150%	97
	BH5	SE246007.010	%	0 - 150%	96
	BH19	SE246007.033	%	0 - 150%	98
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	99
	BH1	SE246007.003	%	0 - 150%	86
	BH2	SE246007.004	%	0 - 150%	95
	BH3	SE246007.006	%	0 - 150%	105
	BH5	SE246007.010	%	0 - 150%	106
	BH19	SE246007.033	%	0 - 150%	102
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	130
	BH1	SE246007.003	%	0 - 150%	107
	BH2	SE246007.004	%	0 - 150%	115
	BH3	SE246007.006	%	0 - 150%	129
	BH5	SE246007.010	%	0 - 150%	125
	BH19	SE246007.033	%	0 - 150%	123
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	80
	BH1	SE246007.003	%	0 - 150%	75
	BH2	SE246007.004	%	0 - 150%	77
	BH3	SE246007.006	%	0 - 150%	79
	BH5	SE246007.010	%	0 - 150%	82
	BH19	SE246007.033	%	0 - 150%	94
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	88
	BH1	SE246007.003	%	0 - 150%	103
	BH2	SE246007.004	%	0 - 150%	117
	BH3	SE246007.006	%	0 - 150%	117
	BH5	SE246007.010	%	0 - 150%	122
	BH19	SE246007.033	%	0 - 150%	125
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	72
	BH1	SE246007.003	%	0 - 150%	73
	BH2	SE246007.004	%	0 - 150%	78
	BH3	SE246007.006	%	0 - 150%	87
	BH5	SE246007.010	%	0 - 150%	75
	BH19	SE246007.033	%	0 - 150%	79
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	71
	BH1	SE246007.003	%	0 - 150%	81
	BH2	SE246007.004	%	0 - 150%	99
	BH3	SE246007.006	%	0 - 150%	96
	BH5	SE246007.010	%	0 - 150%	124
	BH19	SE246007.033	%	0 - 150%	109

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)

Method: MA-1523

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	55
	BH1	SE246007.003	%	0 - 150%	95
	BH2	SE246007.004	%	0 - 150%	75
	BH3	SE246007.006	%	0 - 150%	83
	BH5	SE246007.010	%	0 - 150%	93
	BH19	SE246007.033	%	0 - 150%	110
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	87
	BH1	SE246007.003	%	0 - 150%	87
	BH2	SE246007.004	%	0 - 150%	79
	BH3	SE246007.006	%	0 - 150%	76
	BH5	SE246007.010	%	0 - 150%	81
	BH19	SE246007.033	%	0 - 150%	75
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	68
	BH1	SE246007.003	%	0 - 150%	84
	BH2	SE246007.004	%	0 - 150%	79
	BH3	SE246007.006	%	0 - 150%	106
	BH5	SE246007.010	%	0 - 150%	97
	BH19	SE246007.033	%	0 - 150%	91
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	87
	BH1	SE246007.003	%	0 - 150%	61
	BH2	SE246007.004	%	0 - 150%	85
	BH3	SE246007.006	%	0 - 150%	103
	BH5	SE246007.010	%	0 - 150%	87
	BH19	SE246007.033	%	0 - 150%	81
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	61
	BH1	SE246007.003	%	0 - 150%	78
	BH2	SE246007.004	%	0 - 150%	60
	BH3	SE246007.006	%	0 - 150%	114
	BH5	SE246007.010	%	0 - 150%	83
	BH19	SE246007.033	%	0 - 150%	43
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	69
	BH1	SE246007.003	%	0 - 150%	67
	BH2	SE246007.004	%	0 - 150%	69
	BH3	SE246007.006	%	0 - 150%	85
	BH5	SE246007.010	%	0 - 150%	111
	BH19	SE246007.033	%	0 - 150%	74
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	62
	BH1	SE246007.003	%	0 - 150%	75
	BH2	SE246007.004	%	0 - 150%	86
	BH3	SE246007.006	%	0 - 150%	99
	BH5	SE246007.010	%	0 - 150%	48
	BH19	SE246007.033	%	0 - 150%	75
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	88
	BH1	SE246007.003	%	0 - 150%	97
	BH2	SE246007.004	%	0 - 150%	44
	BH3	SE246007.006	%	0 - 150%	116
	BH5	SE246007.010	%	0 - 150%	44
	BH19	SE246007.033	%	0 - 150%	111

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	BH1	SE246007.001	%	70 - 130%	123
	BH2	SE246007.004	%	70 - 130%	122
	BH3	SE246007.006	%	70 - 130%	122
	BH5	SE246007.009	%	70 - 130%	117
	BH19	SE246007.033	%	70 - 130%	100
	D1	SE246007.034	%	70 - 130%	123
	D2	SE246007.035	%	70 - 130%	128
d5-phenol (Surrogate)	BH1	SE246007.001	%	50 - 130%	104
	BH2	SE246007.004	%	50 - 130%	100
	BH3	SE246007.006	%	50 - 130%	102

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Speciated Phenols in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d5-phenol (Surrogate)	BH5	SE246007.009	%	50 - 130%	98
	BH19	SE246007.033	%	50 - 130%	85
	D1	SE246007.034	%	50 - 130%	100
	D2	SE246007.035	%	50 - 130%	105

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1	SE246007.001	%	60 - 130%	74
	BH1	SE246007.002	%	60 - 130%	77
	BH1	SE246007.003	%	60 - 130%	82
	BH2	SE246007.004	%	60 - 130%	80
	BH2	SE246007.005	%	60 - 130%	79
	BH3	SE246007.006	%	60 - 130%	83
	BH3	SE246007.007	%	60 - 130%	84
	BH4	SE246007.008	%	60 - 130%	81
	BH5	SE246007.009	%	60 - 130%	77
	BH5	SE246007.010	%	60 - 130%	76
	BH5	SE246007.011	%	60 - 130%	88
	BH6	SE246007.012	%	60 - 130%	78
	BH7	SE246007.013	%	60 - 130%	78
	BH7	SE246007.014	%	60 - 130%	79
	BH8	SE246007.015	%	60 - 130%	82
	BH8	SE246007.016	%	60 - 130%	79
	BH9	SE246007.017	%	60 - 130%	78
	BH9	SE246007.018	%	60 - 130%	73
	BH10	SE246007.019	%	60 - 130%	76
	BH10	SE246007.020	%	60 - 130%	75
	BH11	SE246007.021	%	60 - 130%	74
	BH11	SE246007.022	%	60 - 130%	78
	BH12	SE246007.023	%	60 - 130%	78
	BH12	SE246007.024	%	60 - 130%	72
	BH13	SE246007.025	%	60 - 130%	78
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	74
	BH15	SE246007.028	%	60 - 130%	76
	BH16	SE246007.029	%	60 - 130%	74
	BH16	SE246007.030	%	60 - 130%	79
	BH17	SE246007.031	%	60 - 130%	77
	BH18	SE246007.032	%	60 - 130%	72
	BH19	SE246007.033	%	60 - 130%	77
	D1	SE246007.034	%	60 - 130%	81
	D2	SE246007.035	%	60 - 130%	77
	TS1	SE246007.036	%	60 - 130%	85
	TB1	SE246007.037	%	60 - 130%	84
d4-1,2-dichloroethane (Surrogate)	BH1	SE246007.001	%	60 - 130%	75
	BH1	SE246007.002	%	60 - 130%	75
	BH1	SE246007.003	%	60 - 130%	82
	BH2	SE246007.004	%	60 - 130%	77
	BH2	SE246007.005	%	60 - 130%	77
	BH3	SE246007.006	%	60 - 130%	83
	BH3	SE246007.007	%	60 - 130%	83
	BH4	SE246007.008	%	60 - 130%	86
	BH5	SE246007.009	%	60 - 130%	78
	BH5	SE246007.010	%	60 - 130%	75
	BH5	SE246007.011	%	60 - 130%	85
	BH6	SE246007.012	%	60 - 130%	78
	BH7	SE246007.013	%	60 - 130%	77
	BH7	SE246007.014	%	60 - 130%	77
	BH8	SE246007.015	%	60 - 130%	80
	BH8	SE246007.016	%	60 - 130%	78
	BH9	SE246007.017	%	60 - 130%	78

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	BH9	SE246007.018	%	60 - 130%	72
	BH10	SE246007.019	%	60 - 130%	77
	BH10	SE246007.020	%	60 - 130%	80
	BH11	SE246007.021	%	60 - 130%	74
	BH11	SE246007.022	%	60 - 130%	74
	BH12	SE246007.023	%	60 - 130%	81
	BH12	SE246007.024	%	60 - 130%	74
	BH13	SE246007.025	%	60 - 130%	83
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	81
	BH15	SE246007.028	%	60 - 130%	78
	BH16	SE246007.029	%	60 - 130%	79
	BH16	SE246007.030	%	60 - 130%	84
	BH17	SE246007.031	%	60 - 130%	82
	BH18	SE246007.032	%	60 - 130%	83
	BH19	SE246007.033	%	60 - 130%	83
	D1	SE246007.034	%	60 - 130%	91
	D2	SE246007.035	%	60 - 130%	86
	TS1	SE246007.036	%	60 - 130%	82
	TB1	SE246007.037	%	60 - 130%	92
d8-toluene (Surrogate)	BH1	SE246007.001	%	60 - 130%	74
	BH1	SE246007.002	%	60 - 130%	80
	BH1	SE246007.003	%	60 - 130%	83
	BH2	SE246007.004	%	60 - 130%	84
	BH2	SE246007.005	%	60 - 130%	80
	BH3	SE246007.006	%	60 - 130%	86
	BH3	SE246007.007	%	60 - 130%	86
	BH4	SE246007.008	%	60 - 130%	85
	BH5	SE246007.009	%	60 - 130%	83
	BH5	SE246007.010	%	60 - 130%	80
	BH5	SE246007.011	%	60 - 130%	93
	BH6	SE246007.012	%	60 - 130%	81
	BH7	SE246007.013	%	60 - 130%	81
	BH7	SE246007.014	%	60 - 130%	82
	BH8	SE246007.015	%	60 - 130%	82
	BH8	SE246007.016	%	60 - 130%	79
	BH9	SE246007.017	%	60 - 130%	80
	BH9	SE246007.018	%	60 - 130%	72
	BH10	SE246007.019	%	60 - 130%	77
	BH10	SE246007.020	%	60 - 130%	79
	BH11	SE246007.021	%	60 - 130%	79
	BH11	SE246007.022	%	60 - 130%	77
	BH12	SE246007.023	%	60 - 130%	84
	BH12	SE246007.024	%	60 - 130%	77
	BH13	SE246007.025	%	60 - 130%	88
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	85
	BH15	SE246007.028	%	60 - 130%	79
	BH16	SE246007.029	%	60 - 130%	80
	BH16	SE246007.030	%	60 - 130%	87
	BH17	SE246007.031	%	60 - 130%	84
	BH18	SE246007.032	%	60 - 130%	81
	BH19	SE246007.033	%	60 - 130%	86
	D1	SE246007.034	%	60 - 130%	92
	D2	SE246007.035	%	60 - 130%	87
	TS1	SE246007.036	%	60 - 130%	82
	TB1	SE246007.037	%	60 - 130%	95

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1	SE246007.001	%	60 - 130%	74
	BH1	SE246007.002	%	60 - 130%	77
	BH1	SE246007.003	%	60 - 130%	82
	BH2	SE246007.004	%	60 - 130%	80
	BH2	SE246007.005	%	60 - 130%	79
	BH3	SE246007.006	%	60 - 130%	83
	BH3	SE246007.007	%	60 - 130%	84
	BH4	SE246007.008	%	60 - 130%	81
	BH5	SE246007.009	%	60 - 130%	77
	BH5	SE246007.010	%	60 - 130%	76
	BH5	SE246007.011	%	60 - 130%	88
	BH6	SE246007.012	%	60 - 130%	78
	BH7	SE246007.013	%	60 - 130%	78
	BH7	SE246007.014	%	60 - 130%	79
	BH8	SE246007.015	%	60 - 130%	82
	BH8	SE246007.016	%	60 - 130%	79
	BH9	SE246007.017	%	60 - 130%	78
	BH9	SE246007.018	%	60 - 130%	73
	BH10	SE246007.019	%	60 - 130%	76
	BH10	SE246007.020	%	60 - 130%	75
	BH11	SE246007.021	%	60 - 130%	74
	BH11	SE246007.022	%	60 - 130%	78
	BH12	SE246007.023	%	60 - 130%	78
	BH12	SE246007.024	%	60 - 130%	72
	BH13	SE246007.025	%	60 - 130%	78
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	74
	BH15	SE246007.028	%	60 - 130%	76
	BH16	SE246007.029	%	60 - 130%	74
	BH16	SE246007.030	%	60 - 130%	79
	BH17	SE246007.031	%	60 - 130%	77
	BH18	SE246007.032	%	60 - 130%	72
	BH19	SE246007.033	%	60 - 130%	77
	D1	SE246007.034	%	60 - 130%	81
	D2	SE246007.035	%	60 - 130%	77
	TB1	SE246007.037	%	60 - 130%	84
d4-1,2-dichloroethane (Surrogate)	BH1	SE246007.001	%	60 - 130%	75
	BH1	SE246007.002	%	60 - 130%	75
	BH1	SE246007.003	%	60 - 130%	82
	BH2	SE246007.004	%	60 - 130%	77
	BH2	SE246007.005	%	60 - 130%	77
	BH3	SE246007.006	%	60 - 130%	83
	BH3	SE246007.007	%	60 - 130%	83
	BH4	SE246007.008	%	60 - 130%	86
	BH5	SE246007.009	%	60 - 130%	78
	BH5	SE246007.010	%	60 - 130%	75
	BH5	SE246007.011	%	60 - 130%	85
	BH6	SE246007.012	%	60 - 130%	78
	BH7	SE246007.013	%	60 - 130%	77
	BH7	SE246007.014	%	60 - 130%	77
	BH8	SE246007.015	%	60 - 130%	80
	BH8	SE246007.016	%	60 - 130%	78
	BH9	SE246007.017	%	60 - 130%	78
	BH9	SE246007.018	%	60 - 130%	72
	BH10	SE246007.019	%	60 - 130%	77
	BH10	SE246007.020	%	60 - 130%	80
	BH11	SE246007.021	%	60 - 130%	74
	BH11	SE246007.022	%	60 - 130%	74
	BH12	SE246007.023	%	60 - 130%	81
	BH12	SE246007.024	%	60 - 130%	74
	BH13	SE246007.025	%	60 - 130%	83

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	81
	BH15	SE246007.028	%	60 - 130%	78
	BH16	SE246007.029	%	60 - 130%	79
	BH16	SE246007.030	%	60 - 130%	84
	BH17	SE246007.031	%	60 - 130%	82
	BH18	SE246007.032	%	60 - 130%	83
	BH19	SE246007.033	%	60 - 130%	83
	D1	SE246007.034	%	60 - 130%	91
	D2	SE246007.035	%	60 - 130%	86
	TB1	SE246007.037	%	60 - 130%	92
d8-toluene (Surrogate)	BH1	SE246007.001	%	60 - 130%	74
	BH1	SE246007.002	%	60 - 130%	80
	BH1	SE246007.003	%	60 - 130%	83
	BH2	SE246007.004	%	60 - 130%	84
	BH2	SE246007.005	%	60 - 130%	80
	BH3	SE246007.006	%	60 - 130%	86
	BH3	SE246007.007	%	60 - 130%	86
	BH4	SE246007.008	%	60 - 130%	85
	BH5	SE246007.009	%	60 - 130%	83
	BH5	SE246007.010	%	60 - 130%	80
	BH5	SE246007.011	%	60 - 130%	93
	BH6	SE246007.012	%	60 - 130%	81
	BH7	SE246007.013	%	60 - 130%	81
	BH7	SE246007.014	%	60 - 130%	82
	BH8	SE246007.015	%	60 - 130%	82
	BH8	SE246007.016	%	60 - 130%	79
	BH9	SE246007.017	%	60 - 130%	80
	BH9	SE246007.018	%	60 - 130%	72
	BH10	SE246007.019	%	60 - 130%	77
	BH10	SE246007.020	%	60 - 130%	79
	BH11	SE246007.021	%	60 - 130%	79
	BH11	SE246007.022	%	60 - 130%	77
	BH12	SE246007.023	%	60 - 130%	84
	BH12	SE246007.024	%	60 - 130%	77
	BH13	SE246007.025	%	60 - 130%	88
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	85
	BH15	SE246007.028	%	60 - 130%	79
	BH16	SE246007.029	%	60 - 130%	80
	BH16	SE246007.030	%	60 - 130%	87
	BH17	SE246007.031	%	60 - 130%	84
	BH18	SE246007.032	%	60 - 130%	81
	BH19	SE246007.033	%	60 - 130%	86
	D1	SE246007.034	%	60 - 130%	92
	D2	SE246007.035	%	60 - 130%	87
	TB1	SE246007.037	%	60 - 130%	95

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result
LB277387.001	Exchangeable Sodium, Na	mg/kg	2	-0.449
	Exchangeable Potassium, K	mg/kg	2	-0.407607
	Exchangeable Calcium, Ca	mg/kg	2	-0.179235
	Exchangeable Magnesium, Mg	mg/kg	2	-0.0695981

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB277157.001	Mercury	mg/kg	0.05	<0.05
LB277163.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277150.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	90
LB277151.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	90

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Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277150.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	106
		d14-p-terphenyl (Surrogate)	%	-	115
LB277151.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	91
		d14-p-terphenyl (Surrogate)	%	-	111

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277150.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	124
		2-fluorobiphenyl (Surrogate)	%	-	106
		d14-p-terphenyl (Surrogate)	%	-	115
LB277151.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1

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Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277151.001		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	93
		2-fluorobiphenyl (Surrogate)	%	-	91
		d14-p-terphenyl (Surrogate)	%	-	111

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277150.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	90
LB277151.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	94

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277148.001		Phenol	mg/kg	0.5	<0.5
		2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
		3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
		2-chlorophenol	mg/kg	0.5	<0.5
		2,4-dimethylphenol	mg/kg	0.5	<0.5
		2,6-dichlorophenol	mg/kg	0.5	<0.5
		2,4-dichlorophenol	mg/kg	0.5	<0.5
		4-chloro-3-methylphenol	mg/kg	2	<2
		2,4,6-trichlorophenol	mg/kg	0.5	<0.5
		2-nitrophenol	mg/kg	0.5	<0.5
		4-nitrophenol	mg/kg	1	<1
		2,4,5-trichlorophenol	mg/kg	0.5	<0.5
		2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
		Pentachlorophenol	mg/kg	0.5	<0.5
		2,4-dinitrophenol	mg/kg	2	<2
	Surrogates	2,4,6-Tribromophenol (Surrogate)	%	-	122
		d5-phenol (Surrogate)	%	-	105

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB277156.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB277156.001	Zinc, Zn	mg/kg	2	<2.0
LB277166.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB277150.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110
LB277151.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277158.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	89
		d8-toluene (Surrogate)	%	-	97
		Bromofluorobenzene (Surrogate)	%	-	90
	Totals	Total BTEX*	mg/kg	0.6	<0.6
LB277159.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	76
		d8-toluene (Surrogate)	%	-	81
		Bromofluorobenzene (Surrogate)	%	-	75
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277158.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	89
LB277159.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	76

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.010	LB277157.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE246007.019	LB277157.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE246007.029	LB277163.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE246007.035	LB277163.021	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.010	LB277164.011	% Moisture	%w/w	1	18.2	18.1	36	0
SE246007.019	LB277164.021	% Moisture	%w/w	1	11.4	11.8	39	3
SE246007.029	LB277165.011	% Moisture	%w/w	1	17.8	16.9	36	5
SE246007.037	LB277165.019	% Moisture	%w/w	1	<1.0	<1.0	200	0

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	3
SE246007.019	LB277150.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OC Pesticides in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.019	LB277150.024		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	1
SE246007.029	LB277151.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.16	30	3
SE246007.035	LB277151.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.035	LB277151.024		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.16	30	1

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE246007.019	LB277150.024		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE246007.035	LB277151.024		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	15
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	16

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	3
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE246007.019	LB277150.024		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE246007.029	LB277151.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.029	LB277151.014		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5
SE246007.035	LB277151.024		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	7
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	15
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	16

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	3
SE246007.019	LB277150.024		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.019	LB277150.024		Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	3
SE246007.029	LB277151.014		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	3
SE246007.035	LB277151.024		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	2

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.007	LB277422.006	pH	pH Units	0.1	4.9	4.7	32	5

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.035	LB277148.011		Phenol	mg/kg	0.5	<0.5	<0.5	200	0
			2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	<0.5	200	0
			3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	<1	200	0
			Total Cresol	mg/kg	1.5	<1.5	<1.5	200	0
			2-chlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dimethylphenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,6-dichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			4-chloro-3-methylphenol	mg/kg	2	<2	<2	200	0
			2,4,6-trichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2-nitrophenol	mg/kg	0.5	<0.5	<0.5	200	0
			4-nitrophenol	mg/kg	1	<1	<1	200	0
			2,4,5-trichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	<1	200	0
			Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dinitrophenol	mg/kg	2	<2	<2	200	0
		Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	6.4	6.3	30	1
			d5-phenol (Surrogate)	mg/kg	-	2.1	2.1	30	0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.019	LB277156.024	Arsenic, As	mg/kg	1	2	1	90	59
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	14	33	42 ②
		Copper, Cu	mg/kg	0.5	10	6.3	36	48 ②
		Nickel, Ni	mg/kg	0.5	24	15	33	47 ②
		Lead, Pb	mg/kg	1	8	6	45	29
		Zinc, Zn	mg/kg	2	13	9.1	48	36

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.029	LB277166.014		Arsenic, As	mg/kg	1	3	3	66	10
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	23	35	32	44 ②
			Copper, Cu	mg/kg	0.5	<0.5	<0.5	200	0
			Nickel, Ni	mg/kg	0.5	3.5	3.8	44	9
			Lead, Pb	mg/kg	1	8	16	38	59 ②
			Zinc, Zn	mg/kg	2	11	14	46	29
SE246007.035	LB277166.021		Arsenic, As	mg/kg	1	1	1	113	4
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	6.9	7.3	37	5
			Copper, Cu	mg/kg	0.5	1.0	1.1	77	12
			Nickel, Ni	mg/kg	0.5	1.2	1.3	70	7
			Lead, Pb	mg/kg	1	11	10	39	9
			Zinc, Zn	mg/kg	2	12	12	47	5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE246007.019	LB277150.024		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE246007.029	LB277151.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE246007.035	LB277151.024		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate	Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.010	LB277158.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.7	50	2
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.1	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.6	7.6	50	0
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE246007.019	LB277158.024	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	7.7	50	0
			d8-toluene (Surrogate)	mg/kg	-	7.7	7.5	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.6	7.5	50	2
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE246007.029	LB277159.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.1	50	3
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.7	50	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.4	7.5	50	2
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE246007.035	LB277159.026	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.6	8.1	50	5
			d8-toluene (Surrogate)	mg/kg	-	8.7	8.2	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	7.4	50	4
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.010	LB277158.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.7	30	2
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.1	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.6	7.6	30	0
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE246007.019	LB277158.024		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	7.7	30	0
			d8-toluene (Surrogate)	mg/kg	-	7.7	7.5	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.6	7.5	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.029	LB277159.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.1	30	3
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.7	30	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.4	7.5	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE246007.035	LB277159.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.6	8.1	30	5
			d8-toluene (Surrogate)	mg/kg	-	8.7	8.2	30	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	7.4	30	4
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277387.002	Exchangeable Sodium, Na	meq/100g	0.01	0.21	0.194	80 - 120	107
	Exchangeable Potassium, K	meq/100g	0.01	0.60	0.63	80 - 120	95
	Exchangeable Calcium, Ca	meq/100g	0.01	5.8	6.3	80 - 120	93
	Exchangeable Magnesium, Mg	meq/100g	0.02	1.0	1.11	80 - 120	91

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277157.002	Mercury	mg/kg	0.05	0.20	0.2	80 - 120	99
LB277163.002	Mercury	mg/kg	0.05	0.21	0.2	80 - 120	103

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	76
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	85
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	83
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	86
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	93
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	89
LB277151.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	87
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	91
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	88
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	97
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	88
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	90

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	93
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	92
		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	78
		Ethion	mg/kg	0.2	1.7	2	60 - 140	84
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100
LB277151.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	92
		Diazinon (Dimpylate)	mg/kg	0.5	1.9	2	60 - 140	94
		Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	74
		Ethion	mg/kg	0.2	1.6	2	60 - 140	80
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	106

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002		Naphthalene	mg/kg	0.1	4.6	4	60 - 140	116
		Acenaphthylene	mg/kg	0.1	4.5	4	60 - 140	114
		Acenaphthene	mg/kg	0.1	5.0	4	60 - 140	124
		Phenanthrene	mg/kg	0.1	4.8	4	60 - 140	120
		Anthracene	mg/kg	0.1	4.8	4	60 - 140	119
		Fluoranthene	mg/kg	0.1	4.7	4	60 - 140	117
		Pyrene	mg/kg	0.1	5.1	4	60 - 140	127
		Benzo(a)pyrene	mg/kg	0.1	4.9	4	60 - 140	122
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100
LB277151.002		Naphthalene	mg/kg	0.1	4.2	4	60 - 140	104
		Acenaphthylene	mg/kg	0.1	4.4	4	60 - 140	109
		Acenaphthene	mg/kg	0.1	4.6	4	60 - 140	114
		Phenanthrene	mg/kg	0.1	4.3	4	60 - 140	107
		Anthracene	mg/kg	0.1	4.2	4	60 - 140	106
		Fluoranthene	mg/kg	0.1	4.1	4	60 - 140	103
		Pyrene	mg/kg	0.1	5.0	4	60 - 140	125

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277151.002		Benzo(a)pyrene	mg/kg	0.1	4.5	4	60 - 140	114
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	106

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	95
LB277151.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	102

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277422.003	pH	pH Units	0.1	7.4	7.415	98 - 102	100

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277148.002		Phenol	mg/kg	0.5	1.2	1	70 - 130	120
		2,4-dichlorophenol	mg/kg	0.5	1.0	1	70 - 130	102
		2,4,6-trichlorophenol	mg/kg	0.5	0.9	1	70 - 130	94
		Pentachlorophenol	mg/kg	0.5	0.7	1	70 - 130	70
	Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	6.4	5	40 - 130	128
		d5-phenol (Surrogate)	mg/kg	-	2.1	2	40 - 130	105

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277156.002	Arsenic, As	mg/kg	1	310	318.22	80 - 120	99
	Cadmium, Cd	mg/kg	0.3	3.6	4.81	70 - 130	74
	Chromium, Cr	mg/kg	0.5	33	38.31	80 - 120	87
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	101
	Nickel, Ni	mg/kg	0.5	170	187	80 - 120	93
	Lead, Pb	mg/kg	1	88	89.9	80 - 120	97
	Zinc, Zn	mg/kg	2	260	273	80 - 120	94
LB277166.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	104
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	91
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	108
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	102
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	97
	Lead, Pb	mg/kg	1	88	89.9	80 - 120	98
	Zinc, Zn	mg/kg	2	260	273	80 - 120	97

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002		TRH C10-C14	mg/kg	20	42	40	60 - 140	105
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	102
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	90
	TRH F Bands	TRH >C10-C16	mg/kg	25	42	40	60 - 140	104
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	101
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	92
LB277151.002		TRH C10-C14	mg/kg	20	40	40	60 - 140	100
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	101
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	95
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	101
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	101
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	101

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277158.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.9	5	60 - 140	99
		Toluene	mg/kg	0.1	4.7	5	60 - 140	95
		Ethylbenzene	mg/kg	0.1	4.6	5	60 - 140	92
		m/p-xylene	mg/kg	0.2	8.8	10	60 - 140	88

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277158.002	Monocyclic	o-xylene	mg/kg	0.1	4.7	5	60 - 140	94
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.5	10	70 - 130	95
		d8-toluene (Surrogate)	mg/kg	-	9.7	10	70 - 130	97
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
LB277159.002	Monocyclic	Benzene	mg/kg	0.1	5.0	5	60 - 140	99
	Aromatic	Toluene	mg/kg	0.1	4.8	5	60 - 140	96
		Ethylbenzene	mg/kg	0.1	4.7	5	60 - 140	93
		m/p-xylene	mg/kg	0.2	9.0	10	60 - 140	90
		o-xylene	mg/kg	0.1	4.8	5	60 - 140	95
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.8	10	70 - 130	88
		d8-toluene (Surrogate)	mg/kg	-	9.0	10	70 - 130	90
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	10	70 - 130	94

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277158.002		TRH C6-C10	mg/kg	25	94	92.5	60 - 140	102
		TRH C6-C9	mg/kg	20	82	80	60 - 140	102
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.5	10	70 - 130	95
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	67	62.5	60 - 140	106
LB277159.002		TRH C6-C10	mg/kg	25	96	92.5	60 - 140	104
		TRH C6-C9	mg/kg	20	85	80	60 - 140	107
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.8	10	70 - 130	88
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	68	62.5	60 - 140	109

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277157.004	Mercury	mg/kg	0.05	0.18	<0.05	0.2	84
SE246007.020	LB277163.004	Mercury	mg/kg	0.05	0.21	<0.05	0.2	89

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	83
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	93
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	92
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	95
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	98
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	91
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14	-	98
SE246007.020	LB277151.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	94
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	97
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	93
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	95
			Endrin	mg/kg	0.2	0.2	<0.2	0.2	103
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	90
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.020	LB277151.004		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14	-	98

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	<0.2	2	90
			Diazinon (Dimpylate)	mg/kg	0.5	1.8	<0.5	2	91
			Dichlorvos	mg/kg	0.5	1.6	<0.5	2	79
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.9	<0.2	2	95
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	7.2	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	94
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		Naphthalene	mg/kg	0.1	4.4	<0.1	4	111
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.4	<0.1	4	110
			Acenaphthene	mg/kg	0.1	4.8	<0.1	4	120
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.7	<0.1	4	117
			Anthracene	mg/kg	0.1	4.5	<0.1	4	113
			Fluoranthene	mg/kg	0.1	4.9	<0.1	4	123
			Pyrene	mg/kg	0.1	4.8	<0.1	4	119
			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	4.7	<0.1	4	118
			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	4.7	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.8	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.8	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	37	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	93
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	94
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99
SE246007.020	LB277151.004		Naphthalene	mg/kg	0.1	4.1	<0.1	4	102
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.2	<0.1	4	106
			Acenaphthene	mg/kg	0.1	4.5	<0.1	4	111
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.2	<0.1	4	104
			Anthracene	mg/kg	0.1	4.1	<0.1	4	102
			Fluoranthene	mg/kg	0.1	4.0	<0.1	4	100
			Pyrene	mg/kg	0.1	4.8	<0.1	4	120
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.020	LB277151.004		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	4.4	<0.1	4	110
			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	4.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.5	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.5	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	34	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	-	86
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	85
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	102

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	100
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	-	98
SE246007.020	LB277151.004		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	103
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	-	103

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277156.004	Arsenic, As	mg/kg	1	46	2	50	87
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	50	20	50	60 ④
		Copper, Cu	mg/kg	0.5	50	13	50	74
		Nickel, Ni	mg/kg	0.5	51	27	50	48 ④
		Lead, Pb	mg/kg	1	50	14	50	73
		Zinc, Zn	mg/kg	2	55	24	50	64 ④
SE246007.020	LB277166.004	Arsenic, As	mg/kg	1	46	3	50	87
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	86
		Chromium, Cr	mg/kg	0.5	61	17	50	88
		Copper, Cu	mg/kg	0.5	47	1.5	50	90
		Nickel, Ni	mg/kg	0.5	50	5.9	50	88
		Lead, Pb	mg/kg	1	49	5	50	87
		Zinc, Zn	mg/kg	2	50	5.1	50	89

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004	TRH C10-C14	mg/kg	20	41	<20	40	95
		TRH C15-C28	mg/kg	45	<45	<45	40	91
		TRH C29-C36	mg/kg	45	47	<45	40	95
		TRH C37-C40	mg/kg	100	<100	<100	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	41	<25	40	95
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	41	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	93
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE246007.020	LB277151.004		TRH C10-C14	mg/kg	20	44	<20	40	102
			TRH C15-C28	mg/kg	45	<45	<45	40	101
			TRH C29-C36	mg/kg	45	<45	<45	40	100
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	45	<25	40	103
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	45	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	98
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277158.004	Monocyclic	Benzene	mg/kg	0.1	5.2	<0.1	5	103
		Aromatic	Toluene	mg/kg	0.1	5.1	<0.1	5	101
			Ethylbenzene	mg/kg	0.1	5.0	<0.1	5	99
			m/p-xylene	mg/kg	0.2	9.7	<0.2	10	96
			o-xylene	mg/kg	0.1	5.2	<0.1	5	103
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	7.5	10	83
			d8-toluene (Surrogate)	mg/kg	-	7.9	7.4	10	79
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5	7.4	10	85
		Totals	Total BTEX*	mg/kg	0.6	30	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	15	<0.3	-	-
SE246007.020	LB277159.004	Monocyclic	Benzene	mg/kg	0.1	4.3	<0.1	5	86
		Aromatic	Toluene	mg/kg	0.1	4.4	<0.1	5	87
			Ethylbenzene	mg/kg	0.1	4.4	<0.1	5	89
			m/p-xylene	mg/kg	0.2	8.7	<0.2	10	87
			o-xylene	mg/kg	0.1	4.7	<0.1	5	94
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.0	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.0	7.9	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.6	7.5	10	86
		Totals	Total BTEX*	mg/kg	0.6	26	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	13	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277158.004		TRH C6-C10	mg/kg	25	96	<25	92.5	103
			TRH C6-C9	mg/kg	20	83	<20	80	103
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	7.5	10	83
			d8-toluene (Surrogate)	mg/kg	-	7.9	7.4	10	79
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5	7.4	-	85
		VPH F	Benzene (F0)	mg/kg	0.1	5.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	65	<25	62.5	104
SE246007.020	LB277159.004		TRH C6-C10	mg/kg	25	90	<25	92.5	97
			TRH C6-C9	mg/kg	20	80	<20	80	100
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.0	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.0	7.9	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.6	7.5	-	86
		VPH F	Benzene (F0)	mg/kg	0.1	4.3	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	64	<25	62.5	101

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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E-MAILED
26/4/23 @ 11:58 am

SGS EHS Alexandria Laboratory

SE246356 COC
Received: 20 – Apr – 2023

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; reece@foundationes.com.au ph: +61466 385 221	**Project Manager:**	Michael Silk	**Project #:** E3019	
		Sampled By:	KV	**Project Name:** East Gosford	
Delivery Details:	SGS Laboratories Pty Ltd Unit 16, 33 Maddox Street, Alexandria NSW 2015 email: au.samplereceipt@sgs.com ph: +612 8594 0400	**Purchase Order #:**	N/A	**Quote #:**	
		Page #:	1	**Turnaround:** Standard	

#	Sample ID	Depth	Date Sampled	Matrix	Analytes														Sample Comments
					ph	CEC		HM	TRH	BTEXN	PAH (low)		VOC	PFAS	TRH (C6-C10) & BTEXN	Phenol		Suites	
1	GW1	-	19.04.2023	Water										X					Keep
2	GW2	-	19.04.2023	Water										X					Keep
3	GW3	-	19.04.2023	Water										X					Keep
4	D1	-	19.04.2023	Water										X					Keep
																		-	Keep
																		-	Keep

Special Directions and Coments: FOUND - IE - MAR 23 - 328961

Relinquished by	KV	**Received By**	
Signature		**Signature**	
Date	20.04.2023	**Date**	20/4/23 @ 4.45p

source:SE_Autoscan.pdf page:1 SGS Ref:SE246356_COC

SAMPLE RECEIPT ADVICE

SE246356

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford**
Order Number	**E3019**
Samples	4

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	Thu 20/4/2023
Report Due	Wed 3/5/2023
SGS Reference	**SE246356**

SUBMISSION DETAILS

This is to confirm that 4 samples were received on Thursday 20/4/2023. Results are expected to be ready by COB Wednesday 3/5/2023.
Please quote SGS reference SE246356 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	4 Water	Date documentation received	26/4/2023@11:58am
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	3°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

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

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420.

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SAMPLE RECEIPT ADVICE

SE246356

CLIENT DETAILS

Client FOUNDATION EARTH SCIENCES PTY LTD

Project E3019 East Gosford

SUMMARY OF ANALYSIS

No.	Sample ID	Per- and Polyfluoroalkyl Substances (PFAS) in
001	GW1	59
002	GW2	59
003	GW3	59
004	D1	59

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 .

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**E3019 East Gosford**
Order Number	**E3019**
Samples	37

LABORATORY DETAILS

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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE246007 R0**
Date Received	14/4/2023
Date Reported	24/4/2023

COMMENTS

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

Clay content subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Report No. CE166189.

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Report No. ME333565.
MA-1523: Majority of surrogate recoveries within acceptance criteria.

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Dong LIANG
Metals/Inorganics Team Leader

Huong CRAWFORD
Production Manager

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane MCDERMOTT
Inorganic/Metals Chemist

Ying Ying ZHANG
Laboratory Technician

VOC's in Soil [AN433] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH1 SOIL 1.9-2.0 13/4/2023 SE246007.003	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005
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
Naphthalene (VOC)*	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

PARAMETER	UOM	LOR	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010
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
Naphthalene (VOC)*	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

PARAMETER	UOM	LOR	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015
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
Naphthalene (VOC)*	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

PARAMETER	UOM	LOR	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020
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
Naphthalene (VOC)*	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

VOC's in Soil [AN433] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025
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
Naphthalene (VOC)*	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

PARAMETER	UOM	LOR	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030
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
Naphthalene (VOC)*	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

PARAMETER	UOM	LOR	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
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
Naphthalene (VOC)*	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

PARAMETER	UOM	LOR	TS1 SOIL - 13/4/2023 SE246007.036	TB1 SOIL - 13/4/2023 SE246007.037
Benzene	mg/kg	0.1	[104%]	<0.1
Toluene	mg/kg	0.1	[101%]	<0.1
Ethylbenzene	mg/kg	0.1	[102%]	<0.1
m/p-xylene	mg/kg	0.2	[103%]	<0.2
o-xylene	mg/kg	0.1	[103%]	<0.1
Naphthalene (VOC)*	mg/kg	0.1	-	<0.1
Total Xylenes*	mg/kg	0.3	-	<0.3
Total BTEX*	mg/kg	0.6	-	<0.6

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH1 SOIL 1.9-2.0 13/4/2023 SE246007.003	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
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	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
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	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
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	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
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	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
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	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
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

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
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	TB1 SOIL - 13/4/2023 SE246007.037
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C9	mg/kg	20	<20
TRH C6-C10	mg/kg	25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH1 SOIL 1.9-2.0 13/4/2023 SE246007.003	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005
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	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010
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	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015
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

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020
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	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025
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	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	**55**	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	**110**	<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	**120**	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	**160**	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	**180**	<45	<45	<45
TRH C29-C36	mg/kg	45	**55**	**97**	<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	**240**	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	**280**	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	**240**	<210	<210	<210

PARAMETER	UOM	LOR	TB1 SOIL - 13/4/2023 SE246007.037
TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	45	<45
TRH C29-C36	mg/kg	45	<45
TRH C37-C40	mg/kg	100	<100
TRH >C10-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120
TRH C10-C36 Total	mg/kg	110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH1 SOIL 1.9-2.0 13/4/2023 SE246007.003	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005
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	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010
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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015
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	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020
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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025
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	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030
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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
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	**0.2**	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	**0.2**	<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	**1.2**	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	**1.2**	<0.8	<0.8

PARAMETER	UOM	LOR	TB1 SOIL - 13/4/2023 SE246007.037
Naphthalene	mg/kg	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1
Pyrene	mg/kg	0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8

Speciated Phenols in Soil [AN420] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033
Phenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	<1	<1	<1	<1
Total Cresol	mg/kg	1.5	<1.5	<1.5	<1.5	<1.5	<1.5
2-chlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-dichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitrophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-nitrophenol	mg/kg	1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	<1	<1	<1	<1
Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dinitrophenol	mg/kg	2	<2	<2	<2	<2	<2
4-chloro-3-methylphenol	mg/kg	2	<2	<2	<2	<2	<2

PARAMETER	UOM	LOR	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
Phenol	mg/kg	0.5	<0.5	<0.5
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	<0.5
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	<1
Total Cresol	mg/kg	1.5	<1.5	<1.5
2-chlorophenol	mg/kg	0.5	<0.5	<0.5
2,4-dimethylphenol	mg/kg	0.5	<0.5	<0.5
2,6-dichlorophenol	mg/kg	0.5	<0.5	<0.5
2,4-dichlorophenol	mg/kg	0.5	<0.5	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	<0.5	<0.5
2-nitrophenol	mg/kg	0.5	<0.5	<0.5
4-nitrophenol	mg/kg	1	<1	<1
2,4,5-trichlorophenol	mg/kg	0.5	<0.5	<0.5
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	<1
Pentachlorophenol	mg/kg	0.5	<0.5	<0.5
2,4-dinitrophenol	mg/kg	2	<2	<2
4-chloro-3-methylphenol	mg/kg	2	<2	<2

OC Pesticides in Soil [AN420] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006
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 (gamma BHC)	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
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011
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 (gamma BHC)	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
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016
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 (gamma BHC)	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
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021
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 (gamma BHC)	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
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026
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 (gamma BHC)	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
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031
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 (gamma BHC)	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
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	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
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	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
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	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
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019
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	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035	TB1 SOIL - 13/4/2023 SE246007.037
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

PCBs in Soil [AN420] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006
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	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011
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	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016
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

PCBs in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021
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	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026
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	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031
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

PCBs in Soil [AN420] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1

pH in soil (1:5) [AN101] Tested: 21/4/2023

PARAMETER	UOM	LOR	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007
pH	pH Units	0.1	**5.6**	**4.9**

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 21/4/2023

PARAMETER	UOM	LOR	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007
Exchangeable Calcium, Ca	mg/kg	2	450	210
Exchangeable Calcium, Ca	meq/100g	0.01	2.3	1.1
Exchangeable Calcium Percentage*	%	0.1	63.9	49.0
Exchangeable Potassium, K	mg/kg	2	82	61
Exchangeable Potassium, K	meq/100g	0.01	0.21	0.16
Exchangeable Potassium Percentage*	%	0.1	5.9	7.2
Exchangeable Magnesium, Mg	mg/kg	2	120	97
Exchangeable Magnesium, Mg	meq/100g	0.02	0.96	0.80
Exchangeable Magnesium Percentage*	%	0.1	27.3	37.1
Exchangeable Sodium, Na	mg/kg	2	23	33
Exchangeable Sodium, Na	meq/100g	0.01	0.10	0.14
Exchangeable Sodium Percentage*	%	0.1	2.9	6.7
Cation Exchange Capacity	meq/100g	0.02	3.5	2.1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH1 SOIL 1.9-2.0 13/4/2023 SE246007.003	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005
Arsenic, As	mg/kg	1	2	1	3	2	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	20	7.1	9.7	21	28
Copper, Cu	mg/kg	0.5	13	<0.5	0.7	<0.5	<0.5
Lead, Pb	mg/kg	1	14	5	9	10	13
Nickel, Ni	mg/kg	0.5	27	0.6	0.8	0.6	1.1
Zinc, Zn	mg/kg	2	24	<2.0	2.7	3.3	4.7

PARAMETER	UOM	LOR	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010
Arsenic, As	mg/kg	1	1	2	4	1	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	7.1	12	25	7.1	12
Copper, Cu	mg/kg	0.5	1.3	<0.5	1.5	25	0.7
Lead, Pb	mg/kg	1	11	8	19	28	14
Nickel, Ni	mg/kg	0.5	1.3	0.8	2.2	2.2	0.6
Zinc, Zn	mg/kg	2	11	3.3	12	47	5.5

PARAMETER	UOM	LOR	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015
Arsenic, As	mg/kg	1	6	3	4	3	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	0.6	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	18	7.6	18	14	4.3
Copper, Cu	mg/kg	0.5	1.0	20	9.5	1.6	0.8
Lead, Pb	mg/kg	1	19	9	55	17	7
Nickel, Ni	mg/kg	0.5	0.6	4.0	5.0	1.3	1.4
Zinc, Zn	mg/kg	2	11	7.7	77	18	3.8

PARAMETER	UOM	LOR	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020
Arsenic, As	mg/kg	1	1	2	2	2	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.0	22	21	21	17
Copper, Cu	mg/kg	0.5	<0.5	14	4.9	10	1.5
Lead, Pb	mg/kg	1	4	8	10	8	5
Nickel, Ni	mg/kg	0.5	0.6	31	11	24	5.9
Zinc, Zn	mg/kg	2	<2.0	19	12	13	5.1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 19/4/2023

(continued)

PARAMETER	UOM	LOR	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025
Arsenic, As	mg/kg	1	3	4	7	7	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	15	24	47	19	6.9
Copper, Cu	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	5.1
Lead, Pb	mg/kg	1	8	11	15	14	41
Nickel, Ni	mg/kg	0.5	0.9	0.7	0.9	<0.5	0.8
Zinc, Zn	mg/kg	2	5.8	6.7	7.1	2.9	160

PARAMETER	UOM	LOR	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030
Arsenic, As	mg/kg	1	3	2	2	3	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	24	11	11	23	29
Copper, Cu	mg/kg	0.5	<0.5	10	20	<0.5	<0.5
Lead, Pb	mg/kg	1	9	44	82	8	8
Nickel, Ni	mg/kg	0.5	0.6	7.5	6.5	3.5	3.4
Zinc, Zn	mg/kg	2	18	63	180	11	7.4

PARAMETER	UOM	LOR	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
Arsenic, As	mg/kg	1	2	2	2	<1	1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.6	12	14	3.7	6.9
Copper, Cu	mg/kg	0.5	5.8	26	2.1	1.4	1.0
Lead, Pb	mg/kg	1	31	65	17	6	11
Nickel, Ni	mg/kg	0.5	1.8	9.6	1.3	2.6	1.2
Zinc, Zn	mg/kg	2	46	410	12	7.4	12

Mercury in Soil [AN312] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH1 SOIL 1.9-2.0 13/4/2023 SE246007.003	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015
Mercury	mg/kg	0.05	<0.05	<0.05	**0.07**	<0.05	<0.05

PARAMETER	UOM	LOR	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
Mercury	mg/kg	0.05	<0.05	**0.08**	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 19/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 0.9-1.0 13/4/2023 SE246007.002	BH1 SOIL 1.9-2.0 13/4/2023 SE246007.003	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH2 SOIL 0.9-1.0 13/4/2023 SE246007.005
% Moisture	%w/w	1	13.6	15.1	17.4	18.2	20.2

PARAMETER	UOM	LOR	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010
% Moisture	%w/w	1	13.3	15.1	19.7	12.2	18.2

PARAMETER	UOM	LOR	BH5 SOIL 0.8-0.9 13/4/2023 SE246007.011	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH7 SOIL 0.4-0.5 13/4/2023 SE246007.014	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015
% Moisture	%w/w	1	24.0	17.8	10.8	20.0	11.7

PARAMETER	UOM	LOR	BH8 SOIL 0.6-0.7 13/4/2023 SE246007.016	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH9 SOIL 0.9-1.0 13/4/2023 SE246007.018	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019	BH10 SOIL 0.9-1.0 13/4/2023 SE246007.020
% Moisture	%w/w	1	13.8	9.0	18.3	11.4	15.5

PARAMETER	UOM	LOR	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021	BH11 SOIL 0.8-0.9 13/4/2023 SE246007.022	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH12 SOIL 0.8-0.9 13/4/2023 SE246007.024	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025
% Moisture	%w/w	1	14.3	16.6	14.1	16.9	12.5

PARAMETER	UOM	LOR	BH13 SOIL 0.8-0.9 13/4/2023 SE246007.026	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH16 SOIL 1.0-1.1 13/4/2023 SE246007.030
% Moisture	%w/w	1	19.6	17.8	24.3	17.8	17.5

PARAMETER	UOM	LOR	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033	D1 SOIL - 13/4/2023 SE246007.034	D2 SOIL - 13/4/2023 SE246007.035
% Moisture	%w/w	1	13.5	17.2	11.5	12.8	13.6

Moisture Content [AN002] Tested: 19/4/2023 (continued)

PARAMETER	UOM	LOR	TB1 SOIL - 13/4/2023 SE246007.037
% Moisture	%w/w	1	<1.0

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 24/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH1 SOIL 1.9-2.0 13/4/2023 SE246007.003	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH5 SOIL 0.6-0.7 13/4/2023 SE246007.010
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	<0.0032	<0.0032	<0.0032	<0.0032	<0.0032
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	<0.016	<0.016	<0.016	<0.016
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	<0.016	<0.016	<0.016	<0.016
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Total of PFAS (n=30)	mg/kg	0.08	<0.08	<0.08	<0.08	<0.08	<0.08

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 24/4/2023 (continued)

PARAMETER	UOM	LOR	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	<0.0016
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	<0.0016
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	<0.0016
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	<0.0016
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	<0.0008
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	<0.0016
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	<0.0016
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	<0.0016
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	<0.0016
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	<0.0016
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	<0.0016
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	<0.0032
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	<0.0016
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	<0.0016
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	<0.0016
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	<0.0016
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	<0.0016
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	<0.0016
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	<0.0016
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	<0.0016
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	<0.0016
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	<0.0016
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	<0.0016
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	<0.0016
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	<0.0016
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2)	mg/kg	0.0016	<0.0016
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	mg/kg	0.008	<0.008
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	<0.008
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	<0.008
Total of PFAS (n=30)	mg/kg	0.08	<0.08

Fibre Identification in soil [AS4964/AN602] Tested: 20/4/2023

PARAMETER	UOM	LOR	BH1 SOIL 0.3-0.4 13/4/2023 SE246007.001	BH2 SOIL 0.2-0.3 13/4/2023 SE246007.004	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH4 SOIL 0.1-0.2 13/4/2023 SE246007.008	BH5 SOIL 0.1-0.2 13/4/2023 SE246007.009
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	BH6 SOIL 0.1-0.2 13/4/2023 SE246007.012	BH7 SOIL 0.2-0.3 13/4/2023 SE246007.013	BH8 SOIL 0.3-0.4 13/4/2023 SE246007.015	BH9 SOIL 0.2-0.3 13/4/2023 SE246007.017	BH10 SOIL 0.2-0.3 13/4/2023 SE246007.019
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	BH11 SOIL 0.3-0.4 13/4/2023 SE246007.021	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025	BH14 SOIL 0.1-0.2 13/4/2023 SE246007.027	BH15 SOIL 0.1-0.2 13/4/2023 SE246007.028
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	BH16 SOIL 0.3-0.4 13/4/2023 SE246007.029	BH17 SOIL 0.0-0.1 13/4/2023 SE246007.031	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032	BH19 SOIL 1.1-1.2 13/4/2023 SE246007.033
Asbestos Detected	No unit	-	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 20/4/2023

PARAMETER	UOM	LOR	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032
Total Sample Weight*	g	1	**538**	**577**	**510**
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD

Particle sizing of soils by sieving [AN005] Tested: 24/4/2023

PARAMETER	UOM	LOR	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007
Passing 75µm*	%w/w	1	**51**	**53**
Retained 75µm*	%w/w	1	**49**	**47**

Particle sizing of soils <75µm by hydrometer [AN005] Tested: 24/4/2023

PARAMETER	UOM	LOR	BH3 SOIL 0.2-0.3 13/4/2023 SE246007.006	BH3 SOIL 0.9-1.0 13/4/2023 SE246007.007
Clay (<0.002mm)*	%w/w	0.1	**10**	**22**

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.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.
AN005	Following wet sieving of the sample,(particles smaller than 75 µm) a dispersing solution is added and a hydrometer is used to measure sedimentation. Soil density is determined and the percentage of each size fraction calculated. Referenced to AS1289.3.6.3.
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.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN122	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ICP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100g or soil can be pre-treated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g.
AN122	The Exchangeable Sodium Percentage (ESP) is calculated as the exchangeable sodium divided by the CEC (all in meq/100g) times 100. ESP can be used to categorise the sodicity of the soil as below: ESP < 6% non-sodic ESP 6-15% sodic ESP >15% strongly sodic Method is referenced to Rayment and Lyons, 2011, sections 15D3 and 15N1.-
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
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 Recoverable Hydrocarbons - Silica (TRH-Si) 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/AS4964	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/AS4964	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	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/reporting limit (RL) 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/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) 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.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..
MA-1523	This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification.

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.		
***	Indicates that both * and ** apply.				

Unless it is reported that sampling has been performed by SGS, the samples have been 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 and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE246007 R0

CLIENT DETAILS		LABORATORY DETAILS	
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Project	**E3019 East Gosford**	SGS Reference	**SE246007 R0**
Order Number	**E3019**	Date Received	14 Apr 2023
Samples	37	Date Reported	24 Apr 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	pH in soil (1:5)	2 items
Surrogate	Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	1 item
Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	3 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	3 items

SAMPLE SUMMARY

Sample counts by matrix	37 Soil	Date documentation received	14/4/2023
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.0°C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

HOLDING TIME SUMMARY

SE246007 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3	SE246007.006	LB277387	13 Apr 2023	14 Apr 2023	11 May 2023	21 Apr 2023	11 May 2023	21 Apr 2023
BH3	SE246007.007	LB277387	13 Apr 2023	14 Apr 2023	11 May 2023	21 Apr 2023	11 May 2023	21 Apr 2023

Fibre Identification in soil

Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH2	SE246007.004	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH3	SE246007.006	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH4	SE246007.008	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH5	SE246007.009	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH6	SE246007.012	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH7	SE246007.013	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH8	SE246007.015	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH9	SE246007.017	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH10	SE246007.019	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH11	SE246007.021	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH12	SE246007.023	LB277266	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH13	SE246007.025	LB277266	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH14	SE246007.027	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH15	SE246007.028	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH16	SE246007.029	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH17	SE246007.031	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH18	SE246007.032	LB277266	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023
BH19	SE246007.033	LB277272	13 Apr 2023	14 Apr 2023	12 Apr 2024	20 Apr 2023	12 Apr 2024	21 Apr 2023

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH12	SE246007.023	LB277266	13 Apr 2023	14 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023
BH13	SE246007.025	LB277266	13 Apr 2023	14 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023
BH18	SE246007.032	LB277266	13 Apr 2023	14 Apr 2023	10 Oct 2023	20 Apr 2023	10 Oct 2023	21 Apr 2023

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH1	SE246007.002	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH1	SE246007.003	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH2	SE246007.004	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH2	SE246007.005	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH3	SE246007.006	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH3	SE246007.007	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH4	SE246007.008	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH5	SE246007.009	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH5	SE246007.010	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH5	SE246007.011	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH6	SE246007.012	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH7	SE246007.013	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH7	SE246007.014	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH8	SE246007.015	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH8	SE246007.016	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH9	SE246007.017	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH9	SE246007.018	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH10	SE246007.019	LB277157	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH10	SE246007.020	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH11	SE246007.021	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH11	SE246007.022	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH12	SE246007.023	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH12	SE246007.024	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH13	SE246007.025	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH13	SE246007.026	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH14	SE246007.027	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH15	SE246007.028	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023

HOLDING TIME SUMMARY

SE246007 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil (continued)

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH16	SE246007.029	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH16	SE246007.030	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH17	SE246007.031	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH18	SE246007.032	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
BH19	SE246007.033	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
D1	SE246007.034	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023
D2	SE246007.035	LB277163	13 Apr 2023	14 Apr 2023	11 May 2023	19 Apr 2023	11 May 2023	21 Apr 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH1	SE246007.002	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH1	SE246007.003	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH2	SE246007.004	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH2	SE246007.005	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH3	SE246007.006	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH3	SE246007.007	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH4	SE246007.008	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH5	SE246007.009	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH5	SE246007.010	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH5	SE246007.011	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH6	SE246007.012	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH7	SE246007.013	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH7	SE246007.014	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH8	SE246007.015	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH8	SE246007.016	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH9	SE246007.017	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH9	SE246007.018	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH10	SE246007.019	LB277164	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH10	SE246007.020	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH11	SE246007.021	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH11	SE246007.022	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH12	SE246007.023	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH12	SE246007.024	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH13	SE246007.025	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH13	SE246007.026	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH14	SE246007.027	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH15	SE246007.028	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH16	SE246007.029	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH16	SE246007.030	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH17	SE246007.031	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH18	SE246007.032	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
BH19	SE246007.033	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
D1	SE246007.034	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
D2	SE246007.035	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023
TB1	SE246007.037	LB277165	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	24 Apr 2023	21 Apr 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

HOLDING TIME SUMMARY

SE246007 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	21 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

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Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH3	SE246007.006	LB277422	13 Apr 2023	14 Apr 2023	20 Apr 2023	21 Apr 2023†	22 Apr 2023	21 Apr 2023
BH3	SE246007.007	LB277422	13 Apr 2023	14 Apr 2023	20 Apr 2023	21 Apr 2023†	22 Apr 2023	21 Apr 2023

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277148	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH1	SE246007.002	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH1	SE246007.003	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH2	SE246007.004	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH2	SE246007.005	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH3	SE246007.006	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH3	SE246007.007	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH4	SE246007.008	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH5	SE246007.009	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH5	SE246007.010	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH5	SE246007.011	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH6	SE246007.012	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH7	SE246007.013	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH7	SE246007.014	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH8	SE246007.015	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH8	SE246007.016	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH9	SE246007.017	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH9	SE246007.018	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH10	SE246007.019	LB277156	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH10	SE246007.020	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH11	SE246007.021	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH11	SE246007.022	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH12	SE246007.023	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH12	SE246007.024	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH13	SE246007.025	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH13	SE246007.026	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH14	SE246007.027	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH15	SE246007.028	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH16	SE246007.029	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH16	SE246007.030	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH17	SE246007.031	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH18	SE246007.032	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
BH19	SE246007.033	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
D1	SE246007.034	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023
D2	SE246007.035	LB277166	13 Apr 2023	14 Apr 2023	10 Oct 2023	19 Apr 2023	10 Oct 2023	21 Apr 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.002	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH1	SE246007.003	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.004	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH2	SE246007.005	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.006	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH3	SE246007.007	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH4	SE246007.008	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.009	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.010	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH5	SE246007.011	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH6	SE246007.012	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.013	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH7	SE246007.014	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.015	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH8	SE246007.016	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.017	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH9	SE246007.018	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.019	LB277150	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH10	SE246007.020	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.021	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH11	SE246007.022	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.023	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH12	SE246007.024	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.025	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH13	SE246007.026	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH14	SE246007.027	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH15	SE246007.028	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.029	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH16	SE246007.030	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH17	SE246007.031	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH18	SE246007.032	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
BH19	SE246007.033	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D1	SE246007.034	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
D2	SE246007.035	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023
TB1	SE246007.037	LB277151	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	29 May 2023	24 Apr 2023

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH1	SE246007.002	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH1	SE246007.003	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH2	SE246007.004	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH2	SE246007.005	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH3	SE246007.006	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH3	SE246007.007	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4	SE246007.008	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.009	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.010	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.011	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH6	SE246007.012	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH7	SE246007.013	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH7	SE246007.014	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH8	SE246007.015	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH8	SE246007.016	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH9	SE246007.017	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH9	SE246007.018	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH10	SE246007.019	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH10	SE246007.020	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH11	SE246007.021	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH11	SE246007.022	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH12	SE246007.023	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH12	SE246007.024	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH13	SE246007.025	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH13	SE246007.026	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH14	SE246007.027	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH15	SE246007.028	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH16	SE246007.029	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH16	SE246007.030	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH17	SE246007.031	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH18	SE246007.032	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH19	SE246007.033	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
D1	SE246007.034	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
D2	SE246007.035	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
TS1	SE246007.036	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
TB1	SE246007.037	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1	SE246007.001	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH1	SE246007.002	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH1	SE246007.003	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH2	SE246007.004	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH2	SE246007.005	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH3	SE246007.006	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH3	SE246007.007	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH4	SE246007.008	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.009	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.010	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH5	SE246007.011	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH6	SE246007.012	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH7	SE246007.013	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH7	SE246007.014	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH8	SE246007.015	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH8	SE246007.016	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH9	SE246007.017	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH9	SE246007.018	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH10	SE246007.019	LB277158	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	21 Apr 2023
BH10	SE246007.020	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH11	SE246007.021	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH11	SE246007.022	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH12	SE246007.023	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH12	SE246007.024	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH13	SE246007.025	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH13	SE246007.026	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH14	SE246007.027	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023

HOLDING TIME SUMMARY

SE246007 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH15	SE246007.028	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH16	SE246007.029	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH16	SE246007.030	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH17	SE246007.031	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH18	SE246007.032	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
BH19	SE246007.033	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
D1	SE246007.034	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
D2	SE246007.035	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
TS1	SE246007.036	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023
TB1	SE246007.037	LB277159	13 Apr 2023	14 Apr 2023	27 Apr 2023	19 Apr 2023	27 Apr 2023	24 Apr 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH1	SE246007.001	%	60 - 130%	96
	BH1	SE246007.002	%	60 - 130%	98
	BH2	SE246007.004	%	60 - 130%	94
	BH2	SE246007.005	%	60 - 130%	101
	BH3	SE246007.006	%	60 - 130%	99
	BH3	SE246007.007	%	60 - 130%	95
	BH4	SE246007.008	%	60 - 130%	98
	BH5	SE246007.009	%	60 - 130%	93
	BH5	SE246007.010	%	60 - 130%	92
	BH5	SE246007.011	%	60 - 130%	97
	BH6	SE246007.012	%	60 - 130%	92
	BH7	SE246007.013	%	60 - 130%	96
	BH7	SE246007.014	%	60 - 130%	95
	BH8	SE246007.015	%	60 - 130%	92
	BH8	SE246007.016	%	60 - 130%	97
	BH9	SE246007.017	%	60 - 130%	96
	BH9	SE246007.018	%	60 - 130%	97
	BH10	SE246007.019	%	60 - 130%	93
	BH10	SE246007.020	%	60 - 130%	96
	BH11	SE246007.021	%	60 - 130%	100
	BH11	SE246007.022	%	60 - 130%	97
	BH12	SE246007.023	%	60 - 130%	99
	BH12	SE246007.024	%	60 - 130%	99
	BH13	SE246007.025	%	60 - 130%	97
	BH13	SE246007.026	%	60 - 130%	99
	BH14	SE246007.027	%	60 - 130%	106
	BH15	SE246007.028	%	60 - 130%	111
	BH16	SE246007.029	%	60 - 130%	103
	BH16	SE246007.030	%	60 - 130%	104
	BH17	SE246007.031	%	60 - 130%	103
	BH18	SE246007.032	%	60 - 130%	104
	BH19	SE246007.033	%	60 - 130%	104
	D1	SE246007.034	%	60 - 130%	107
	D2	SE246007.035	%	60 - 130%	105

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1	SE246007.001	%	60 - 130%	95
	BH2	SE246007.004	%	60 - 130%	92
	BH3	SE246007.006	%	60 - 130%	89
	BH5	SE246007.009	%	60 - 130%	91
	BH10	SE246007.019	%	60 - 130%	89
	BH13	SE246007.025	%	60 - 130%	89
	BH19	SE246007.033	%	60 - 130%	88
	D1	SE246007.034	%	60 - 130%	86
	D2	SE246007.035	%	60 - 130%	96
	TB1	SE246007.037	%	60 - 130%	100
d14-p-terphenyl (Surrogate)	BH1	SE246007.001	%	60 - 130%	109
	BH2	SE246007.004	%	60 - 130%	106
	BH3	SE246007.006	%	60 - 130%	105
	BH5	SE246007.009	%	60 - 130%	103
	BH10	SE246007.019	%	60 - 130%	104
	BH13	SE246007.025	%	60 - 130%	107
	BH19	SE246007.033	%	60 - 130%	106
	D1	SE246007.034	%	60 - 130%	104
	D2	SE246007.035	%	60 - 130%	118
	TB1	SE246007.037	%	60 - 130%	112

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1	SE246007.001	%	70 - 130%	95
	BH1	SE246007.002	%	70 - 130%	92
	BH1	SE246007.003	%	70 - 130%	90
	BH2	SE246007.004	%	70 - 130%	92
	BH2	SE246007.005	%	70 - 130%	89
	BH3	SE246007.006	%	70 - 130%	89
	BH3	SE246007.007	%	70 - 130%	92
	BH4	SE246007.008	%	70 - 130%	92
	BH5	SE246007.009	%	70 - 130%	91
	BH5	SE246007.010	%	70 - 130%	90
	BH5	SE246007.011	%	70 - 130%	85
	BH6	SE246007.012	%	70 - 130%	91
	BH7	SE246007.013	%	70 - 130%	92
	BH7	SE246007.014	%	70 - 130%	91
	BH8	SE246007.015	%	70 - 130%	90
	BH8	SE246007.016	%	70 - 130%	89
	BH9	SE246007.017	%	70 - 130%	91
	BH9	SE246007.018	%	70 - 130%	88
	BH10	SE246007.019	%	70 - 130%	89
	BH10	SE246007.020	%	70 - 130%	90
	BH11	SE246007.021	%	70 - 130%	97
	BH11	SE246007.022	%	70 - 130%	91
	BH12	SE246007.023	%	70 - 130%	90
	BH12	SE246007.024	%	70 - 130%	88
	BH13	SE246007.025	%	70 - 130%	89
	BH13	SE246007.026	%	70 - 130%	92
	BH14	SE246007.027	%	70 - 130%	92
	BH15	SE246007.028	%	70 - 130%	90
	BH16	SE246007.029	%	70 - 130%	86
	BH16	SE246007.030	%	70 - 130%	92
	BH17	SE246007.031	%	70 - 130%	91
	BH18	SE246007.032	%	70 - 130%	92
	BH19	SE246007.033	%	70 - 130%	88
	D1	SE246007.034	%	70 - 130%	86
	D2	SE246007.035	%	70 - 130%	96
	TB1	SE246007.037	%	70 - 130%	100
d14-p-terphenyl (Surrogate)	BH1	SE246007.001	%	70 - 130%	109
	BH1	SE246007.002	%	70 - 130%	104
	BH1	SE246007.003	%	70 - 130%	103
	BH2	SE246007.004	%	70 - 130%	106
	BH2	SE246007.005	%	70 - 130%	105
	BH3	SE246007.006	%	70 - 130%	105
	BH3	SE246007.007	%	70 - 130%	106
	BH4	SE246007.008	%	70 - 130%	106
	BH5	SE246007.009	%	70 - 130%	103
	BH5	SE246007.010	%	70 - 130%	105
	BH5	SE246007.011	%	70 - 130%	103
	BH6	SE246007.012	%	70 - 130%	111
	BH7	SE246007.013	%	70 - 130%	102
	BH7	SE246007.014	%	70 - 130%	109
	BH8	SE246007.015	%	70 - 130%	105
	BH8	SE246007.016	%	70 - 130%	107
	BH9	SE246007.017	%	70 - 130%	120
	BH9	SE246007.018	%	70 - 130%	103
	BH10	SE246007.019	%	70 - 130%	104
	BH10	SE246007.020	%	70 - 130%	105
	BH11	SE246007.021	%	70 - 130%	114
	BH11	SE246007.022	%	70 - 130%	105
	BH12	SE246007.023	%	70 - 130%	107
	BH12	SE246007.024	%	70 - 130%	106
	BH13	SE246007.025	%	70 - 130%	107

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	BH13	SE246007.026	%	70 - 130%	107
	BH14	SE246007.027	%	70 - 130%	111
	BH15	SE246007.028	%	70 - 130%	107
	BH16	SE246007.029	%	70 - 130%	102
	BH16	SE246007.030	%	70 - 130%	105
	BH17	SE246007.031	%	70 - 130%	106
	BH18	SE246007.032	%	70 - 130%	107
	BH19	SE246007.033	%	70 - 130%	106
	D1	SE246007.034	%	70 - 130%	104
	D2	SE246007.035	%	70 - 130%	118
	TB1	SE246007.037	%	70 - 130%	112
d5-nitrobenzene (Surrogate)	BH1	SE246007.001	%	70 - 130%	97
	BH1	SE246007.002	%	70 - 130%	96
	BH1	SE246007.003	%	70 - 130%	95
	BH2	SE246007.004	%	70 - 130%	95
	BH2	SE246007.005	%	70 - 130%	95
	BH3	SE246007.006	%	70 - 130%	94
	BH3	SE246007.007	%	70 - 130%	95
	BH4	SE246007.008	%	70 - 130%	94
	BH5	SE246007.009	%	70 - 130%	94
	BH5	SE246007.010	%	70 - 130%	94
	BH5	SE246007.011	%	70 - 130%	90
	BH6	SE246007.012	%	70 - 130%	96
	BH7	SE246007.013	%	70 - 130%	95
	BH7	SE246007.014	%	70 - 130%	94
	BH8	SE246007.015	%	70 - 130%	93
	BH8	SE246007.016	%	70 - 130%	90
	BH9	SE246007.017	%	70 - 130%	95
	BH9	SE246007.018	%	70 - 130%	93
	BH10	SE246007.019	%	70 - 130%	96
	BH10	SE246007.020	%	70 - 130%	94
	BH11	SE246007.021	%	70 - 130%	98
	BH11	SE246007.022	%	70 - 130%	94
	BH12	SE246007.023	%	70 - 130%	91
	BH12	SE246007.024	%	70 - 130%	92
	BH13	SE246007.025	%	70 - 130%	93
	BH13	SE246007.026	%	70 - 130%	94
	BH14	SE246007.027	%	70 - 130%	96
	BH15	SE246007.028	%	70 - 130%	96
	BH16	SE246007.029	%	70 - 130%	91
	BH16	SE246007.030	%	70 - 130%	94
	BH17	SE246007.031	%	70 - 130%	93
	BH18	SE246007.032	%	70 - 130%	96
	BH19	SE246007.033	%	70 - 130%	95
	D1	SE246007.034	%	70 - 130%	96
	D2	SE246007.035	%	70 - 130%	86
	TB1	SE246007.037	%	70 - 130%	86

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH1	SE246007.001	%	60 - 130%	95
	BH1	SE246007.002	%	60 - 130%	98
	BH2	SE246007.004	%	60 - 130%	94
	BH2	SE246007.005	%	60 - 130%	101
	BH3	SE246007.006	%	60 - 130%	99
	BH3	SE246007.007	%	60 - 130%	95
	BH4	SE246007.008	%	60 - 130%	98
	BH5	SE246007.009	%	60 - 130%	93
	BH5	SE246007.010	%	60 - 130%	92
	BH5	SE246007.011	%	60 - 130%	97
	BH6	SE246007.012	%	60 - 130%	92

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PCBs in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	BH7	SE246007.013	%	60 - 130%	95
	BH7	SE246007.014	%	60 - 130%	95
	BH8	SE246007.015	%	60 - 130%	93
	BH8	SE246007.016	%	60 - 130%	96
	BH9	SE246007.017	%	60 - 130%	95
	BH9	SE246007.018	%	60 - 130%	97
	BH10	SE246007.019	%	60 - 130%	92
	BH10	SE246007.020	%	60 - 130%	100
	BH11	SE246007.021	%	60 - 130%	104
	BH11	SE246007.022	%	60 - 130%	101
	BH12	SE246007.023	%	60 - 130%	103
	BH12	SE246007.024	%	60 - 130%	103
	BH13	SE246007.025	%	60 - 130%	102
	BH13	SE246007.026	%	60 - 130%	103
	BH14	SE246007.027	%	60 - 130%	112
	BH15	SE246007.028	%	60 - 130%	115
	BH16	SE246007.029	%	60 - 130%	108
	BH16	SE246007.030	%	60 - 130%	109
	BH17	SE246007.031	%	60 - 130%	107
	BH18	SE246007.032	%	60 - 130%	108
	BH19	SE246007.033	%	60 - 130%	109
	D1	SE246007.034	%	60 - 130%	112
	D2	SE246007.035	%	60 - 130%	110

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples — **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 130%	59
	BH1	SE246007.003	%	0 - 130%	91
	BH2	SE246007.004	%	0 - 130%	61
	BH3	SE246007.006	%	0 - 130%	115
	BH5	SE246007.010	%	0 - 130%	62
	BH19	SE246007.033	%	0 - 130%	57
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	114
	BH1	SE246007.003	%	0 - 150%	107
	BH2	SE246007.004	%	0 - 150%	105
	BH3	SE246007.006	%	0 - 150%	120
	BH5	SE246007.010	%	0 - 150%	103
	BH19	SE246007.033	%	0 - 150%	75
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	85
	BH1	SE246007.003	%	0 - 150%	89
	BH2	SE246007.004	%	0 - 150%	92
	BH3	SE246007.006	%	0 - 150%	91
	BH5	SE246007.010	%	0 - 150%	78
	BH19	SE246007.033	%	0 - 150%	58
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	79
	BH1	SE246007.003	%	0 - 150%	71
	BH2	SE246007.004	%	0 - 150%	91
	BH3	SE246007.006	%	0 - 150%	67
	BH5	SE246007.010	%	0 - 150%	73
	BH19	SE246007.033	%	0 - 150%	72
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	60
	BH1	SE246007.003	%	0 - 150%	73
	BH2	SE246007.004	%	0 - 150%	55
	BH3	SE246007.006	%	0 - 150%	89
	BH5	SE246007.010	%	0 - 150%	67
	BH19	SE246007.033	%	0 - 150%	71
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	81
	BH1	SE246007.003	%	0 - 150%	128
	BH2	SE246007.004	%	0 - 150%	92
	BH3	SE246007.006	%	0 - 150%	183 †
	BH5	SE246007.010	%	0 - 150%	72

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued) **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	BH19	SE246007.033	%	0 - 150%	52
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	144
	BH1	SE246007.003	%	0 - 150%	134
	BH2	SE246007.004	%	0 - 150%	128
	BH3	SE246007.006	%	0 - 150%	142
	BH5	SE246007.010	%	0 - 150%	139
	BH19	SE246007.033	%	0 - 150%	128
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	104
	BH1	SE246007.003	%	0 - 150%	102
	BH2	SE246007.004	%	0 - 150%	100
	BH3	SE246007.006	%	0 - 150%	96
	BH5	SE246007.010	%	0 - 150%	89
	BH19	SE246007.033	%	0 - 150%	98
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	85
	BH1	SE246007.003	%	0 - 150%	87
	BH2	SE246007.004	%	0 - 150%	91
	BH3	SE246007.006	%	0 - 150%	87
	BH5	SE246007.010	%	0 - 150%	88
	BH19	SE246007.033	%	0 - 150%	96
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	98
	BH1	SE246007.003	%	0 - 150%	95
	BH2	SE246007.004	%	0 - 150%	96
	BH3	SE246007.006	%	0 - 150%	97
	BH5	SE246007.010	%	0 - 150%	96
	BH19	SE246007.033	%	0 - 150%	98
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	99
	BH1	SE246007.003	%	0 - 150%	86
	BH2	SE246007.004	%	0 - 150%	95
	BH3	SE246007.006	%	0 - 150%	105
	BH5	SE246007.010	%	0 - 150%	106
	BH19	SE246007.033	%	0 - 150%	102
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	130
	BH1	SE246007.003	%	0 - 150%	107
	BH2	SE246007.004	%	0 - 150%	115
	BH3	SE246007.006	%	0 - 150%	129
	BH5	SE246007.010	%	0 - 150%	125
	BH19	SE246007.033	%	0 - 150%	123
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	80
	BH1	SE246007.003	%	0 - 150%	75
	BH2	SE246007.004	%	0 - 150%	77
	BH3	SE246007.006	%	0 - 150%	79
	BH5	SE246007.010	%	0 - 150%	82
	BH19	SE246007.033	%	0 - 150%	94
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	88
	BH1	SE246007.003	%	0 - 150%	103
	BH2	SE246007.004	%	0 - 150%	117
	BH3	SE246007.006	%	0 - 150%	117
	BH5	SE246007.010	%	0 - 150%	122
	BH19	SE246007.033	%	0 - 150%	125
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	72
	BH1	SE246007.003	%	0 - 150%	73
	BH2	SE246007.004	%	0 - 150%	78
	BH3	SE246007.006	%	0 - 150%	87
	BH5	SE246007.010	%	0 - 150%	75
	BH19	SE246007.033	%	0 - 150%	79
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	71
	BH1	SE246007.003	%	0 - 150%	81
	BH2	SE246007.004	%	0 - 150%	99
	BH3	SE246007.006	%	0 - 150%	96
	BH5	SE246007.010	%	0 - 150%	124
	BH19	SE246007.033	%	0 - 150%	109

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples (continued)

Method: MA-1523

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	55
	BH1	SE246007.003	%	0 - 150%	95
	BH2	SE246007.004	%	0 - 150%	75
	BH3	SE246007.006	%	0 - 150%	83
	BH5	SE246007.010	%	0 - 150%	93
	BH19	SE246007.033	%	0 - 150%	110
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	87
	BH1	SE246007.003	%	0 - 150%	87
	BH2	SE246007.004	%	0 - 150%	79
	BH3	SE246007.006	%	0 - 150%	76
	BH5	SE246007.010	%	0 - 150%	81
	BH19	SE246007.033	%	0 - 150%	75
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	68
	BH1	SE246007.003	%	0 - 150%	84
	BH2	SE246007.004	%	0 - 150%	79
	BH3	SE246007.006	%	0 - 150%	106
	BH5	SE246007.010	%	0 - 150%	97
	BH19	SE246007.033	%	0 - 150%	91
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	87
	BH1	SE246007.003	%	0 - 150%	61
	BH2	SE246007.004	%	0 - 150%	85
	BH3	SE246007.006	%	0 - 150%	103
	BH5	SE246007.010	%	0 - 150%	87
	BH19	SE246007.033	%	0 - 150%	81
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	61
	BH1	SE246007.003	%	0 - 150%	78
	BH2	SE246007.004	%	0 - 150%	60
	BH3	SE246007.006	%	0 - 150%	114
	BH5	SE246007.010	%	0 - 150%	83
	BH19	SE246007.033	%	0 - 150%	43
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	69
	BH1	SE246007.003	%	0 - 150%	67
	BH2	SE246007.004	%	0 - 150%	69
	BH3	SE246007.006	%	0 - 150%	85
	BH5	SE246007.010	%	0 - 150%	111
	BH19	SE246007.033	%	0 - 150%	74
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	62
	BH1	SE246007.003	%	0 - 150%	75
	BH2	SE246007.004	%	0 - 150%	86
	BH3	SE246007.006	%	0 - 150%	99
	BH5	SE246007.010	%	0 - 150%	48
	BH19	SE246007.033	%	0 - 150%	75
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	BH1	SE246007.001	%	0 - 150%	88
	BH1	SE246007.003	%	0 - 150%	97
	BH2	SE246007.004	%	0 - 150%	44
	BH3	SE246007.006	%	0 - 150%	116
	BH5	SE246007.010	%	0 - 150%	44
	BH19	SE246007.033	%	0 - 150%	111

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	BH1	SE246007.001	%	70 - 130%	123
	BH2	SE246007.004	%	70 - 130%	122
	BH3	SE246007.006	%	70 - 130%	122
	BH5	SE246007.009	%	70 - 130%	117
	BH19	SE246007.033	%	70 - 130%	100
	D1	SE246007.034	%	70 - 130%	123
	D2	SE246007.035	%	70 - 130%	128
d5-phenol (Surrogate)	BH1	SE246007.001	%	50 - 130%	104
	BH2	SE246007.004	%	50 - 130%	100
	BH3	SE246007.006	%	50 - 130%	102

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Speciated Phenols in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d5-phenol (Surrogate)	BH5	SE246007.009	%	50 - 130%	98
	BH19	SE246007.033	%	50 - 130%	85
	D1	SE246007.034	%	50 - 130%	100
	D2	SE246007.035	%	50 - 130%	105

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1	SE246007.001	%	60 - 130%	74
	BH1	SE246007.002	%	60 - 130%	77
	BH1	SE246007.003	%	60 - 130%	82
	BH2	SE246007.004	%	60 - 130%	80
	BH2	SE246007.005	%	60 - 130%	79
	BH3	SE246007.006	%	60 - 130%	83
	BH3	SE246007.007	%	60 - 130%	84
	BH4	SE246007.008	%	60 - 130%	81
	BH5	SE246007.009	%	60 - 130%	77
	BH5	SE246007.010	%	60 - 130%	76
	BH5	SE246007.011	%	60 - 130%	88
	BH6	SE246007.012	%	60 - 130%	78
	BH7	SE246007.013	%	60 - 130%	78
	BH7	SE246007.014	%	60 - 130%	79
	BH8	SE246007.015	%	60 - 130%	82
	BH8	SE246007.016	%	60 - 130%	79
	BH9	SE246007.017	%	60 - 130%	78
	BH9	SE246007.018	%	60 - 130%	73
	BH10	SE246007.019	%	60 - 130%	76
	BH10	SE246007.020	%	60 - 130%	75
	BH11	SE246007.021	%	60 - 130%	74
	BH11	SE246007.022	%	60 - 130%	78
	BH12	SE246007.023	%	60 - 130%	78
	BH12	SE246007.024	%	60 - 130%	72
	BH13	SE246007.025	%	60 - 130%	78
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	74
	BH15	SE246007.028	%	60 - 130%	76
	BH16	SE246007.029	%	60 - 130%	74
	BH16	SE246007.030	%	60 - 130%	79
	BH17	SE246007.031	%	60 - 130%	77
	BH18	SE246007.032	%	60 - 130%	72
	BH19	SE246007.033	%	60 - 130%	77
	D1	SE246007.034	%	60 - 130%	81
	D2	SE246007.035	%	60 - 130%	77
	TS1	SE246007.036	%	60 - 130%	85
	TB1	SE246007.037	%	60 - 130%	84
d4-1,2-dichloroethane (Surrogate)	BH1	SE246007.001	%	60 - 130%	75
	BH1	SE246007.002	%	60 - 130%	75
	BH1	SE246007.003	%	60 - 130%	82
	BH2	SE246007.004	%	60 - 130%	77
	BH2	SE246007.005	%	60 - 130%	77
	BH3	SE246007.006	%	60 - 130%	83
	BH3	SE246007.007	%	60 - 130%	83
	BH4	SE246007.008	%	60 - 130%	86
	BH5	SE246007.009	%	60 - 130%	78
	BH5	SE246007.010	%	60 - 130%	75
	BH5	SE246007.011	%	60 - 130%	85
	BH6	SE246007.012	%	60 - 130%	78
	BH7	SE246007.013	%	60 - 130%	77
	BH7	SE246007.014	%	60 - 130%	77
	BH8	SE246007.015	%	60 - 130%	80
	BH8	SE246007.016	%	60 - 130%	78
	BH9	SE246007.017	%	60 - 130%	78

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	BH9	SE246007.018	%	60 - 130%	72
	BH10	SE246007.019	%	60 - 130%	77
	BH10	SE246007.020	%	60 - 130%	80
	BH11	SE246007.021	%	60 - 130%	74
	BH11	SE246007.022	%	60 - 130%	74
	BH12	SE246007.023	%	60 - 130%	81
	BH12	SE246007.024	%	60 - 130%	74
	BH13	SE246007.025	%	60 - 130%	83
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	81
	BH15	SE246007.028	%	60 - 130%	78
	BH16	SE246007.029	%	60 - 130%	79
	BH16	SE246007.030	%	60 - 130%	84
	BH17	SE246007.031	%	60 - 130%	82
	BH18	SE246007.032	%	60 - 130%	83
	BH19	SE246007.033	%	60 - 130%	83
	D1	SE246007.034	%	60 - 130%	91
	D2	SE246007.035	%	60 - 130%	86
	TS1	SE246007.036	%	60 - 130%	82
	TB1	SE246007.037	%	60 - 130%	92
d8-toluene (Surrogate)	BH1	SE246007.001	%	60 - 130%	74
	BH1	SE246007.002	%	60 - 130%	80
	BH1	SE246007.003	%	60 - 130%	83
	BH2	SE246007.004	%	60 - 130%	84
	BH2	SE246007.005	%	60 - 130%	80
	BH3	SE246007.006	%	60 - 130%	86
	BH3	SE246007.007	%	60 - 130%	86
	BH4	SE246007.008	%	60 - 130%	85
	BH5	SE246007.009	%	60 - 130%	83
	BH5	SE246007.010	%	60 - 130%	80
	BH5	SE246007.011	%	60 - 130%	93
	BH6	SE246007.012	%	60 - 130%	81
	BH7	SE246007.013	%	60 - 130%	81
	BH7	SE246007.014	%	60 - 130%	82
	BH8	SE246007.015	%	60 - 130%	82
	BH8	SE246007.016	%	60 - 130%	79
	BH9	SE246007.017	%	60 - 130%	80
	BH9	SE246007.018	%	60 - 130%	72
	BH10	SE246007.019	%	60 - 130%	77
	BH10	SE246007.020	%	60 - 130%	79
	BH11	SE246007.021	%	60 - 130%	79
	BH11	SE246007.022	%	60 - 130%	77
	BH12	SE246007.023	%	60 - 130%	84
	BH12	SE246007.024	%	60 - 130%	77
	BH13	SE246007.025	%	60 - 130%	88
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	85
	BH15	SE246007.028	%	60 - 130%	79
	BH16	SE246007.029	%	60 - 130%	80
	BH16	SE246007.030	%	60 - 130%	87
	BH17	SE246007.031	%	60 - 130%	84
	BH18	SE246007.032	%	60 - 130%	81
	BH19	SE246007.033	%	60 - 130%	86
	D1	SE246007.034	%	60 - 130%	92
	D2	SE246007.035	%	60 - 130%	87
	TS1	SE246007.036	%	60 - 130%	82
	TB1	SE246007.037	%	60 - 130%	95

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1	SE246007.001	%	60 - 130%	74
	BH1	SE246007.002	%	60 - 130%	77
	BH1	SE246007.003	%	60 - 130%	82
	BH2	SE246007.004	%	60 - 130%	80
	BH2	SE246007.005	%	60 - 130%	79
	BH3	SE246007.006	%	60 - 130%	83
	BH3	SE246007.007	%	60 - 130%	84
	BH4	SE246007.008	%	60 - 130%	81
	BH5	SE246007.009	%	60 - 130%	77
	BH5	SE246007.010	%	60 - 130%	76
	BH5	SE246007.011	%	60 - 130%	88
	BH6	SE246007.012	%	60 - 130%	78
	BH7	SE246007.013	%	60 - 130%	78
	BH7	SE246007.014	%	60 - 130%	79
	BH8	SE246007.015	%	60 - 130%	82
	BH8	SE246007.016	%	60 - 130%	79
	BH9	SE246007.017	%	60 - 130%	78
	BH9	SE246007.018	%	60 - 130%	73
	BH10	SE246007.019	%	60 - 130%	76
	BH10	SE246007.020	%	60 - 130%	75
	BH11	SE246007.021	%	60 - 130%	74
	BH11	SE246007.022	%	60 - 130%	78
	BH12	SE246007.023	%	60 - 130%	78
	BH12	SE246007.024	%	60 - 130%	72
	BH13	SE246007.025	%	60 - 130%	78
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	74
	BH15	SE246007.028	%	60 - 130%	76
	BH16	SE246007.029	%	60 - 130%	74
	BH16	SE246007.030	%	60 - 130%	79
	BH17	SE246007.031	%	60 - 130%	77
	BH18	SE246007.032	%	60 - 130%	72
	BH19	SE246007.033	%	60 - 130%	77
	D1	SE246007.034	%	60 - 130%	81
	D2	SE246007.035	%	60 - 130%	77
	TB1	SE246007.037	%	60 - 130%	84
d4-1,2-dichloroethane (Surrogate)	BH1	SE246007.001	%	60 - 130%	75
	BH1	SE246007.002	%	60 - 130%	75
	BH1	SE246007.003	%	60 - 130%	82
	BH2	SE246007.004	%	60 - 130%	77
	BH2	SE246007.005	%	60 - 130%	77
	BH3	SE246007.006	%	60 - 130%	83
	BH3	SE246007.007	%	60 - 130%	83
	BH4	SE246007.008	%	60 - 130%	86
	BH5	SE246007.009	%	60 - 130%	78
	BH5	SE246007.010	%	60 - 130%	75
	BH5	SE246007.011	%	60 - 130%	85
	BH6	SE246007.012	%	60 - 130%	78
	BH7	SE246007.013	%	60 - 130%	77
	BH7	SE246007.014	%	60 - 130%	77
	BH8	SE246007.015	%	60 - 130%	80
	BH8	SE246007.016	%	60 - 130%	78
	BH9	SE246007.017	%	60 - 130%	78
	BH9	SE246007.018	%	60 - 130%	72
	BH10	SE246007.019	%	60 - 130%	77
	BH10	SE246007.020	%	60 - 130%	80
	BH11	SE246007.021	%	60 - 130%	74
	BH11	SE246007.022	%	60 - 130%	74
	BH12	SE246007.023	%	60 - 130%	81
	BH12	SE246007.024	%	60 - 130%	74
	BH13	SE246007.025	%	60 - 130%	83

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	81
	BH15	SE246007.028	%	60 - 130%	78
	BH16	SE246007.029	%	60 - 130%	79
	BH16	SE246007.030	%	60 - 130%	84
	BH17	SE246007.031	%	60 - 130%	82
	BH18	SE246007.032	%	60 - 130%	83
	BH19	SE246007.033	%	60 - 130%	83
	D1	SE246007.034	%	60 - 130%	91
	D2	SE246007.035	%	60 - 130%	86
	TB1	SE246007.037	%	60 - 130%	92
d8-toluene (Surrogate)	BH1	SE246007.001	%	60 - 130%	74
	BH1	SE246007.002	%	60 - 130%	80
	BH1	SE246007.003	%	60 - 130%	83
	BH2	SE246007.004	%	60 - 130%	84
	BH2	SE246007.005	%	60 - 130%	80
	BH3	SE246007.006	%	60 - 130%	86
	BH3	SE246007.007	%	60 - 130%	86
	BH4	SE246007.008	%	60 - 130%	85
	BH5	SE246007.009	%	60 - 130%	83
	BH5	SE246007.010	%	60 - 130%	80
	BH5	SE246007.011	%	60 - 130%	93
	BH6	SE246007.012	%	60 - 130%	81
	BH7	SE246007.013	%	60 - 130%	81
	BH7	SE246007.014	%	60 - 130%	82
	BH8	SE246007.015	%	60 - 130%	82
	BH8	SE246007.016	%	60 - 130%	79
	BH9	SE246007.017	%	60 - 130%	80
	BH9	SE246007.018	%	60 - 130%	72
	BH10	SE246007.019	%	60 - 130%	77
	BH10	SE246007.020	%	60 - 130%	79
	BH11	SE246007.021	%	60 - 130%	79
	BH11	SE246007.022	%	60 - 130%	77
	BH12	SE246007.023	%	60 - 130%	84
	BH12	SE246007.024	%	60 - 130%	77
	BH13	SE246007.025	%	60 - 130%	88
	BH13	SE246007.026	%	60 - 130%	77
	BH14	SE246007.027	%	60 - 130%	85
	BH15	SE246007.028	%	60 - 130%	79
	BH16	SE246007.029	%	60 - 130%	80
	BH16	SE246007.030	%	60 - 130%	87
	BH17	SE246007.031	%	60 - 130%	84
	BH18	SE246007.032	%	60 - 130%	81
	BH19	SE246007.033	%	60 - 130%	86
	D1	SE246007.034	%	60 - 130%	92
	D2	SE246007.035	%	60 - 130%	87
	TB1	SE246007.037	%	60 - 130%	95

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result
LB277387.001	Exchangeable Sodium, Na	mg/kg	2	-0.449
	Exchangeable Potassium, K	mg/kg	2	-0.407607
	Exchangeable Calcium, Ca	mg/kg	2	-0.179235
	Exchangeable Magnesium, Mg	mg/kg	2	-0.0695981

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB277157.001	Mercury	mg/kg	0.05	<0.05
LB277163.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277150.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	90
LB277151.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	90

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277150.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	106
		d14-p-terphenyl (Surrogate)	%	-	115
LB277151.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	91
		d14-p-terphenyl (Surrogate)	%	-	111

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277150.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	124
		2-fluorobiphenyl (Surrogate)	%	-	106
		d14-p-terphenyl (Surrogate)	%	-	115
LB277151.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277151.001		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	93
		2-fluorobiphenyl (Surrogate)	%	-	91
		d14-p-terphenyl (Surrogate)	%	-	111

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277150.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	90
LB277151.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	94

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB277148.001		Phenol	mg/kg	0.5	<0.5
		2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
		3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
		2-chlorophenol	mg/kg	0.5	<0.5
		2,4-dimethylphenol	mg/kg	0.5	<0.5
		2,6-dichlorophenol	mg/kg	0.5	<0.5
		2,4-dichlorophenol	mg/kg	0.5	<0.5
		4-chloro-3-methylphenol	mg/kg	2	<2
		2,4,6-trichlorophenol	mg/kg	0.5	<0.5
		2-nitrophenol	mg/kg	0.5	<0.5
		4-nitrophenol	mg/kg	1	<1
		2,4,5-trichlorophenol	mg/kg	0.5	<0.5
		2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
		Pentachlorophenol	mg/kg	0.5	<0.5
		2,4-dinitrophenol	mg/kg	2	<2
	Surrogates	2,4,6-Tribromophenol (Surrogate)	%	-	122
		d5-phenol (Surrogate)	%	-	105

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB277156.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB277156.001	Zinc, Zn	mg/kg	2	<2.0
LB277166.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB277150.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110
LB277151.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277158.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	89
		d8-toluene (Surrogate)	%	-	97
		Bromofluorobenzene (Surrogate)	%	-	90
	Totals	Total BTEX*	mg/kg	0.6	<0.6
LB277159.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	76
		d8-toluene (Surrogate)	%	-	81
		Bromofluorobenzene (Surrogate)	%	-	75
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB277158.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	89
LB277159.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	76

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.010	LB277157.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE246007.019	LB277157.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE246007.029	LB277163.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE246007.035	LB277163.021	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.010	LB277164.011	% Moisture	%w/w	1	18.2	18.1	36	0
SE246007.019	LB277164.021	% Moisture	%w/w	1	11.4	11.8	39	3
SE246007.029	LB277165.011	% Moisture	%w/w	1	17.8	16.9	36	5
SE246007.037	LB277165.019	% Moisture	%w/w	1	<1.0	<1.0	200	0

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	3
SE246007.019	LB277150.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OC Pesticides in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.019	LB277150.024		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	1
SE246007.029	LB277151.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.16	30	3
SE246007.035	LB277151.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.035	LB277151.024		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.16	30	1

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE246007.019	LB277150.024		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE246007.035	LB277151.024		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	15
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	16

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	3
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE246007.019	LB277150.024		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE246007.029	LB277151.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.029	LB277151.014		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	5
SE246007.035	LB277151.024		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	7
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	15
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	16

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	3
SE246007.019	LB277150.024		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.019	LB277150.024		Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	3
SE246007.029	LB277151.014		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	3
SE246007.035	LB277151.024		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	2

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.007	LB277422.006	pH	pH Units	0.1	4.9	4.7	32	5

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.035	LB277148.011		Phenol	mg/kg	0.5	<0.5	<0.5	200	0
			2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	<0.5	200	0
			3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	<1	200	0
			Total Cresol	mg/kg	1.5	<1.5	<1.5	200	0
			2-chlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dimethylphenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,6-dichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			4-chloro-3-methylphenol	mg/kg	2	<2	<2	200	0
			2,4,6-trichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2-nitrophenol	mg/kg	0.5	<0.5	<0.5	200	0
			4-nitrophenol	mg/kg	1	<1	<1	200	0
			2,4,5-trichlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1	<1	200	0
			Pentachlorophenol	mg/kg	0.5	<0.5	<0.5	200	0
			2,4-dinitrophenol	mg/kg	2	<2	<2	200	0
		Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	6.4	6.3	30	1
			d5-phenol (Surrogate)	mg/kg	-	2.1	2.1	30	0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.019	LB277156.024	Arsenic, As	mg/kg	1	2	1	90	59
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	21	14	33	42 ②
		Copper, Cu	mg/kg	0.5	10	6.3	36	48 ②
		Nickel, Ni	mg/kg	0.5	24	15	33	47 ②
		Lead, Pb	mg/kg	1	8	6	45	29
		Zinc, Zn	mg/kg	2	13	9.1	48	36

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.029	LB277166.014		Arsenic, As	mg/kg	1	3	3	66	10
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	23	35	32	44 ②
			Copper, Cu	mg/kg	0.5	<0.5	<0.5	200	0
			Nickel, Ni	mg/kg	0.5	3.5	3.8	44	9
			Lead, Pb	mg/kg	1	8	16	38	59 ②
			Zinc, Zn	mg/kg	2	11	14	46	29
SE246007.035	LB277166.021		Arsenic, As	mg/kg	1	1	1	113	4
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	6.9	7.3	37	5
			Copper, Cu	mg/kg	0.5	1.0	1.1	77	12
			Nickel, Ni	mg/kg	0.5	1.2	1.3	70	7
			Lead, Pb	mg/kg	1	11	10	39	9
			Zinc, Zn	mg/kg	2	12	12	47	5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.009	LB277150.026		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE246007.019	LB277150.024		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE246007.029	LB277151.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE246007.035	LB277151.024		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate	Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.010	LB277158.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.7	50	2
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.1	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.6	7.6	50	0
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE246007.019	LB277158.024	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	7.7	50	0
			d8-toluene (Surrogate)	mg/kg	-	7.7	7.5	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.6	7.5	50	2
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE246007.029	LB277159.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.1	50	3
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.7	50	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.4	7.5	50	2
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE246007.035	LB277159.026	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.6	8.1	50	5
			d8-toluene (Surrogate)	mg/kg	-	8.7	8.2	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	7.4	50	4
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.010	LB277158.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.7	30	2
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.1	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.6	7.6	30	0
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE246007.019	LB277158.024		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	7.7	30	0
			d8-toluene (Surrogate)	mg/kg	-	7.7	7.5	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.6	7.5	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE246007.029	LB277159.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.1	30	3
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.7	30	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.4	7.5	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE246007.035	LB277159.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.6	8.1	30	5
			d8-toluene (Surrogate)	mg/kg	-	8.7	8.2	30	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	7.4	30	4
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277387.002	Exchangeable Sodium, Na	meq/100g	0.01	0.21	0.194	80 - 120	107
	Exchangeable Potassium, K	meq/100g	0.01	0.60	0.63	80 - 120	95
	Exchangeable Calcium, Ca	meq/100g	0.01	5.8	6.3	80 - 120	93
	Exchangeable Magnesium, Mg	meq/100g	0.02	1.0	1.11	80 - 120	91

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277157.002	Mercury	mg/kg	0.05	0.20	0.2	80 - 120	99
LB277163.002	Mercury	mg/kg	0.05	0.21	0.2	80 - 120	103

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	76
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	85
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	83
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	86
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	93
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	89
LB277151.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	87
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	91
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	88
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	97
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	88
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	90

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	93
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	92
		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	78
		Ethion	mg/kg	0.2	1.7	2	60 - 140	84
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100
LB277151.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	92
		Diazinon (Dimpylate)	mg/kg	0.5	1.9	2	60 - 140	94
		Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	74
		Ethion	mg/kg	0.2	1.6	2	60 - 140	80
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	106

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002		Naphthalene	mg/kg	0.1	4.6	4	60 - 140	116
		Acenaphthylene	mg/kg	0.1	4.5	4	60 - 140	114
		Acenaphthene	mg/kg	0.1	5.0	4	60 - 140	124
		Phenanthrene	mg/kg	0.1	4.8	4	60 - 140	120
		Anthracene	mg/kg	0.1	4.8	4	60 - 140	119
		Fluoranthene	mg/kg	0.1	4.7	4	60 - 140	117
		Pyrene	mg/kg	0.1	5.1	4	60 - 140	127
		Benzo(a)pyrene	mg/kg	0.1	4.9	4	60 - 140	122
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	100
LB277151.002		Naphthalene	mg/kg	0.1	4.2	4	60 - 140	104
		Acenaphthylene	mg/kg	0.1	4.4	4	60 - 140	109
		Acenaphthene	mg/kg	0.1	4.6	4	60 - 140	114
		Phenanthrene	mg/kg	0.1	4.3	4	60 - 140	107
		Anthracene	mg/kg	0.1	4.2	4	60 - 140	106
		Fluoranthene	mg/kg	0.1	4.1	4	60 - 140	103
		Pyrene	mg/kg	0.1	5.0	4	60 - 140	125

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277151.002		Benzo(a)pyrene	mg/kg	0.1	4.5	4	60 - 140	114
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	106

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	95
LB277151.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	102

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277422.003	pH	pH Units	0.1	7.4	7.415	98 - 102	100

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277148.002		Phenol	mg/kg	0.5	1.2	1	70 - 130	120
		2,4-dichlorophenol	mg/kg	0.5	1.0	1	70 - 130	102
		2,4,6-trichlorophenol	mg/kg	0.5	0.9	1	70 - 130	94
		Pentachlorophenol	mg/kg	0.5	0.7	1	70 - 130	70
	Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	6.4	5	40 - 130	128
		d5-phenol (Surrogate)	mg/kg	-	2.1	2	40 - 130	105

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277156.002	Arsenic, As	mg/kg	1	310	318.22	80 - 120	99
	Cadmium, Cd	mg/kg	0.3	3.6	4.81	70 - 130	74
	Chromium, Cr	mg/kg	0.5	33	38.31	80 - 120	87
	Copper, Cu	mg/kg	0.5	290	290	80 - 120	101
	Nickel, Ni	mg/kg	0.5	170	187	80 - 120	93
	Lead, Pb	mg/kg	1	88	89.9	80 - 120	97
	Zinc, Zn	mg/kg	2	260	273	80 - 120	94
LB277166.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	104
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	91
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	108
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	102
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	97
	Lead, Pb	mg/kg	1	88	89.9	80 - 120	98
	Zinc, Zn	mg/kg	2	260	273	80 - 120	97

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277150.002		TRH C10-C14	mg/kg	20	42	40	60 - 140	105
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	102
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	90
	TRH F Bands	TRH >C10-C16	mg/kg	25	42	40	60 - 140	104
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	101
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	92
LB277151.002		TRH C10-C14	mg/kg	20	40	40	60 - 140	100
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	101
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	95
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	101
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	101
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	101

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277158.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.9	5	60 - 140	99
		Toluene	mg/kg	0.1	4.7	5	60 - 140	95
		Ethylbenzene	mg/kg	0.1	4.6	5	60 - 140	92
		m/p-xylene	mg/kg	0.2	8.8	10	60 - 140	88

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277158.002	Monocyclic	o-xylene	mg/kg	0.1	4.7	5	60 - 140	94
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.5	10	70 - 130	95
		d8-toluene (Surrogate)	mg/kg	-	9.7	10	70 - 130	97
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
LB277159.002	Monocyclic	Benzene	mg/kg	0.1	5.0	5	60 - 140	99
	Aromatic	Toluene	mg/kg	0.1	4.8	5	60 - 140	96
		Ethylbenzene	mg/kg	0.1	4.7	5	60 - 140	93
		m/p-xylene	mg/kg	0.2	9.0	10	60 - 140	90
		o-xylene	mg/kg	0.1	4.8	5	60 - 140	95
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.8	10	70 - 130	88
		d8-toluene (Surrogate)	mg/kg	-	9.0	10	70 - 130	90
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	10	70 - 130	94

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB277158.002		TRH C6-C10	mg/kg	25	94	92.5	60 - 140	102
		TRH C6-C9	mg/kg	20	82	80	60 - 140	102
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.5	10	70 - 130	95
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	67	62.5	60 - 140	106
LB277159.002		TRH C6-C10	mg/kg	25	96	92.5	60 - 140	104
		TRH C6-C9	mg/kg	20	85	80	60 - 140	107
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.8	10	70 - 130	88
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	68	62.5	60 - 140	109

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277157.004	Mercury	mg/kg	0.05	0.18	<0.05	0.2	84
SE246007.020	LB277163.004	Mercury	mg/kg	0.05	0.21	<0.05	0.2	89

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	83
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	93
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	92
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	95
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	98
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	91
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14	-	98
SE246007.020	LB277151.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	94
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	97
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	93
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	95
			Endrin	mg/kg	0.2	0.2	<0.2	0.2	103
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	90
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.020	LB277151.004		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
			Total OC VIC EPA	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14	-	98

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	<0.2	2	90
			Diazinon (Dimpylate)	mg/kg	0.5	1.8	<0.5	2	91
			Dichlorvos	mg/kg	0.5	1.6	<0.5	2	79
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.9	<0.2	2	95
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	7.2	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	94
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		Naphthalene	mg/kg	0.1	4.4	<0.1	4	111
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.4	<0.1	4	110
			Acenaphthene	mg/kg	0.1	4.8	<0.1	4	120
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.7	<0.1	4	117
			Anthracene	mg/kg	0.1	4.5	<0.1	4	113
			Fluoranthene	mg/kg	0.1	4.9	<0.1	4	123
			Pyrene	mg/kg	0.1	4.8	<0.1	4	119
			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	4.7	<0.1	4	118
			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	4.7	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.8	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.8	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	37	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	93
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	94
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99
SE246007.020	LB277151.004		Naphthalene	mg/kg	0.1	4.1	<0.1	4	102
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.2	<0.1	4	106
			Acenaphthene	mg/kg	0.1	4.5	<0.1	4	111
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.2	<0.1	4	104
			Anthracene	mg/kg	0.1	4.1	<0.1	4	102
			Fluoranthene	mg/kg	0.1	4.0	<0.1	4	100
			Pyrene	mg/kg	0.1	4.8	<0.1	4	120
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.020	LB277151.004		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	4.4	<0.1	4	110
			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	4.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.5	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.5	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	34	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	-	86
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	85
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	102

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	100
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	-	98
SE246007.020	LB277151.004		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	103
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	-	103

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277156.004	Arsenic, As	mg/kg	1	46	2	50	87
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	50	20	50	60 ④
		Copper, Cu	mg/kg	0.5	50	13	50	74
		Nickel, Ni	mg/kg	0.5	51	27	50	48 ④
		Lead, Pb	mg/kg	1	50	14	50	73
		Zinc, Zn	mg/kg	2	55	24	50	64 ④
SE246007.020	LB277166.004	Arsenic, As	mg/kg	1	46	3	50	87
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	86
		Chromium, Cr	mg/kg	0.5	61	17	50	88
		Copper, Cu	mg/kg	0.5	47	1.5	50	90
		Nickel, Ni	mg/kg	0.5	50	5.9	50	88
		Lead, Pb	mg/kg	1	49	5	50	87
		Zinc, Zn	mg/kg	2	50	5.1	50	89

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004	TRH C10-C14	mg/kg	20	41	<20	40	95
		TRH C15-C28	mg/kg	45	<45	<45	40	91
		TRH C29-C36	mg/kg	45	47	<45	40	95
		TRH C37-C40	mg/kg	100	<100	<100	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277150.004		TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	41	<25	40	95
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	41	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	93
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE246007.020	LB277151.004		TRH C10-C14	mg/kg	20	44	<20	40	102
			TRH C15-C28	mg/kg	45	<45	<45	40	101
			TRH C29-C36	mg/kg	45	<45	<45	40	100
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	45	<25	40	103
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	45	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	98
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277158.004	Monocyclic	Benzene	mg/kg	0.1	5.2	<0.1	5	103
		Aromatic	Toluene	mg/kg	0.1	5.1	<0.1	5	101
			Ethylbenzene	mg/kg	0.1	5.0	<0.1	5	99
			m/p-xylene	mg/kg	0.2	9.7	<0.2	10	96
			o-xylene	mg/kg	0.1	5.2	<0.1	5	103
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	7.5	10	83
			d8-toluene (Surrogate)	mg/kg	-	7.9	7.4	10	79
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5	7.4	10	85
		Totals	Total BTEX*	mg/kg	0.6	30	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	15	<0.3	-	-
SE246007.020	LB277159.004	Monocyclic	Benzene	mg/kg	0.1	4.3	<0.1	5	86
		Aromatic	Toluene	mg/kg	0.1	4.4	<0.1	5	87
			Ethylbenzene	mg/kg	0.1	4.4	<0.1	5	89
			m/p-xylene	mg/kg	0.2	8.7	<0.2	10	87
			o-xylene	mg/kg	0.1	4.7	<0.1	5	94
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.0	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.0	7.9	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.6	7.5	10	86
		Totals	Total BTEX*	mg/kg	0.6	26	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	13	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE246007.001	LB277158.004		TRH C6-C10	mg/kg	25	96	<25	92.5	103
			TRH C6-C9	mg/kg	20	83	<20	80	103
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	7.5	10	83
			d8-toluene (Surrogate)	mg/kg	-	7.9	7.4	10	79
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.5	7.4	-	85
		VPH F	Benzene (F0)	mg/kg	0.1	5.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	65	<25	62.5	104
SE246007.020	LB277159.004		TRH C6-C10	mg/kg	25	90	<25	92.5	97
			TRH C6-C9	mg/kg	20	80	<20	80	100
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	8.0	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.0	7.9	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.6	7.5	-	86
		VPH F	Benzene (F0)	mg/kg	0.1	4.3	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	64	<25	62.5	101

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Order Number	**E3019**
Samples	19

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SGS Reference	**SE246007 R0**
Date Received	14 Apr 2023
Date Reported	24 Apr 2023

COMMENTS

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

Clay content subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Report No. CE166189.

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Report No. ME333565.
MA-1523: Majority of surrogate recoveries within acceptance criteria.

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin

SIGNATORIES

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE246007.001	BH1	Soil	54g Sand,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.004	BH2	Soil	118g Clay,Sand,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.006	BH3	Soil	49g Clay,Sand,Soil	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.008	BH4	Soil	110g Clay,Sand,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.009	BH5	Soil	35g Sand,Soil,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.012	BH6	Soil	69g Clay,Sand,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.013	BH7	Soil	59g Clay,Sand,Soil, Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE246007.015	BH8	Soil	80g Clay,Sand	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.017	BH9	Soil	171g Clay,Sand,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.019	BH10	Soil	130g Clay,Sand,Soil, Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE246007.021	BH11	Soil	133g Clay,Sand,Soil, Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.023	BH12	Soil	538g Clay,Sand,Soil	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.025	BH13	Soil	577g Clay,Sand,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.027	BH14	Soil	65g Sand,Soil,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE246007.028	BH15	Soil	36g Sand,Soil	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE246007.029	BH16	Soil	41g Clay,Sand,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.031	BH17	Soil	39g Sand,Soil,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.032	BH18	Soil	510g Sand,Soil,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE246007.033	BH19	Soil	76g Sand,Soil,Rocks	13 Apr 2023	No Asbestos Found at RL of 0.1g/kg	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 20/4/2023

PARAMETER	UOM	LOR	BH12 SOIL 0.3-0.4 13/4/2023 SE246007.023	BH13 SOIL 0.3-0.4 13/4/2023 SE246007.025	BH18 SOIL 0.2-0.3 13/4/2023 SE246007.032
Total Sample Weight*	g	1	**538**	**577**	**510**
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	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/AS4964	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	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/reporting limit (RL) 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/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) 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.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

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.
			***	-	Indicates that both * and ** apply.

(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.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

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 and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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ANALYTICAL REPORT

Accreditation No. 2562

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Order Number	**SE246007**
Samples	2

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SGS Reference	**CE166189 R0**
Date Received	18 Apr 2023
Date Reported	21 Apr 2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(3146/19038)

SIGNATORIES

Anthony NILSSON
Operations Manager

Jon DICKER
Manager Northern QLD

Parameter	Units	LOR	Sample Number: CE166189.006 Sample Matrix: Soil Sample Depth: 0.2-0.3 Sample Date: 13 Apr 2023 Sample Name: SE246007.006	Sample Number: CE166189.007 Sample Matrix: Soil Sample Depth: 0.9-1.0 Sample Date: 13 Apr 2023 Sample Name: SE246007.007
Moisture Content Method: AN002 Tested: 20/4/2023				
% Moisture	%w/w	1	**13.9**	**16.0**
Particle sizing of soils by sieving Method: AN005 Tested: 21/4/2023				
Passing 75µm	%w/w	1	**51**	**53**
Retained 75µm	%w/w	1	**49**	**47**
Particle sizing of soils <75µm by hydrometer Method: AN005 Tested: 20/4/2023				
Clay (<0.002mm)	%w/w	0.1	**10**	**22**

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

No QC samples were reported for this job.

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.
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.
AN005	Following wet sieving of the sample,(particles smaller than 75 µm) a dispersing solution is added and a hydrometer is used to measure sedimentation. Soil density is determined and the percentage of each size fraction calculated. Referenced to AS1289.3.6.3.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
***	Indicates that both * and ** apply.	NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been 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 calcuated 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 and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**East Gosford**
Order Number	**E3019**
Samples	2

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	**SE246008 R0**
Date Received	14 Apr 2023
Date Reported	21 Apr 2023

COMMENTS

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

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES

S. Ravee

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre ID in bulk materials — Method S4964

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE246008.001	F1	Other	50x30x3mm Cement Sheet Fragment	13 Apr 2023	Chrysotile Asbestos Detected	
SE246008.002	F2	Other	40x35x3mm Cement Sheet Fragment	13 Apr 2023	Amosite & Chrysotile Asbestos Detected	

[] Tested: -

PARAMETER	UOM	LOR

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	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/AS4964	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	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."

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.
			***	-	Indicates that both * and ** apply.

(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.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

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 and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety .

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SGS EHS Sydney COC

SE246008

FOUNDATION EARTH SCIENCES

Chain of Custody Record

Client Details:	Foundation Earth Sciences PO Box 4405, East Gosford NSW 2250 email: ben@foundationes.com.au michael@foundationes.com.au; reece@foundationes.com.au ph: +61466 385 221	**Project Manager:** Michael Silk **Sampled By:** KV/DG	**Project #:** E3019 **Project Name:** East Gosford
Delivery Details:	SGS Laboratories Pty Ltd Unit 16, 33 Maddox Street, Alexandria NSW 2015 email: au.samplereceipt@sgs.com ph: +612 8594 0400	**Purchase Order #:** N/A **Page #:** 1	**Quote #:** **Turnaround:** Standard

#	Sample ID	Depth	Date Sampled	Matrix	Analytes																Sample Comments
					ph	CEC	%CLAY	Heavy Metals	TRH	BTEXN	PAH	OC	PCB	OPP	Phenol	TRH C6-C10 & BTEXN	Asbestos NEPM	Asbestos ID	PFAS	Suites	
1	F1	Surface	13.04.2023	Fragment														X			Keep
2	F2	Surface	13.04.2023	Fragment														X			Keep

Special Directions and Coments: QUOTE NUMBER: FOUND - IE - MAR 23 - 328961

Relinquished by	KV	**Received By**	B. Subaran
Signature	Kv	**Signature**	
Date	14.04.2023	**Date**	14/04/23 @ 4:30

SAMPLE RECEIPT ADVICE

SE246008

CLIENT DETAILS

Contact	Ben Buckley
Client	FOUNDATION EARTH SCIENCES PTY LTD
Address	UNIT 119/14 LOYALTY ROAD NORTH ROCKS NSW 2151
Telephone	(Not specified)
Facsimile	(Not specified)
Email	ben@foundationes.com.au
Project	**East Gosford**
Order Number	**E3019**
Samples	2

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	Fri 14/4/2023
Report Due	Fri 21/4/2023
SGS Reference	**SE246008**

SUBMISSION DETAILS

This is to confirm that 2 samples were received on Friday 14/4/2023. Results are expected to be ready by COB Friday 21/4/2023. Please quote SGS reference SE246008 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	2 Material	Date documentation received	14/4/2023
Samples received in good order	Yes	Samples received without headspace	N/A
Sample temperature upon receipt	10.0C	Turnaround time requested	Standard
Sample cooling method	Ice Bricks		

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

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SAMPLE RECEIPT ADVICE

SE246008

CLIENT DETAILS

Client FOUNDATION EARTH SCIENCES PTY LTD

Project East Gosford

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre ID in bulk materials
001	F1 Surface	1
002	F2 Surface	1

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 I: FIELD RECORD FORMS

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GROUNDWATER MONITORING RECORD FORM

PROJECT INFORMAION			
Client:		Monitoring Well ID:	GW1
Site Address:	Elanora Hotel	Logged By:	KV
Project:	E3019	Date:	17/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed:		Depth (m) as measured:	4.0
Finish:	Gerit	Co-ordinates:	–
Condition:	Good	Surveyed levels:	–

METHODOLOGY AND EQUIPMENT			
Water measurement device:	Dip Tape	Reference point:	Ground Surface
Water quality meter:	YSI	Reference point to ground surface (mm):	0.0
GW Extraction method:	peristaltic pump		

GROUNDWATER GAUGING (PRE-PURGE)		GROUNDWATER GAUGING (POST-PURGE)	
SWL (m bgl):	1.3	SWL (m bgl):	1.4
Depth to Product (m bgl):	–	Depth to product (m bgl):	–
Product thickness (mm):	–	Product thickness (mm):	–
Time:	10:12	Time:	11:00

PURGING AND PHYSICO-CHEMICAL PARAMETERS

Time (started)	Time (finished)	Volume purged	Pump rate (mL/min)	Temperature (°c)	DO (mg/L)	pH (pH units)	EC (us/cm)	Redox potential (mv)
10:25	10:27							
[redacted] 10:32	[redacted] 10:34	0.6L	300	26.3	0.80	5.11	329.1	111.7
[redacted] 10:45	[redacted] 10:47	0.6L	300	26.3	0.31	5.29	336.0	90.8
		0.6L	300	26.1	0.57	5.22	322.4	90.1
		Stabilisation criteria		± 0.2 °c	± 0.2 mg/L	± 0.1 pH Units	± 5%	± 10 mV

OBSERVATIONS			
Odour:	NO	Sheen:	NO
Colour/ Turbidity:	light brown/ ~~Rough~~ clear low	Recent rain (days):	–

SAMPLING					
Samples taken:	Primary	Blind	Split	Rinsate	TS/TB
Containers:					
Field filtered:					
Preservation:					

GROUNDWATER MONITORING RECORD FORM

PROJECT INFORMAION			
Client:		Monitoring Well ID:	GW2
Site Address:	Elanora Hotel	Logged By:	KV
Project:	E3019	Date:	17/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed:		Depth (m) as measured:	3.4m
Finish:	gest	Co-ordinates:	—
Condition:	good	Surveyed levels:	—

METHODOLOGY AND EQUIPMENT			
Water measurement device:	D/P tape	Reference point:	ground surface
Water quality meter:	YSI	Reference point to ground surface (mm):	00
GW Extraction method:	peri pump		

GROUNDWATER GAUGING (PRE-PURGE)		GROUNDWATER GAUGING (POST-PURGE)	
SWL (m bgl):	1.05	SWL (m bgl):	1.8
Depth to Product (m bgl):	—	Depth to product (m bgl):	—
Product thickness (mm):	—	Product thickness (mm):	—
Time:	9:40	Time:	10:10

PURGING AND PHYSICO-CHEMICAL PARAMETERS

Time (started)	Time (finished)	Volume purged	Pump rate (mL/min)	Temperature (°c)	DO (mg/L)	pH (pH units)	EC (us/cm)	Redox potential (mv)
9:55	9:57	0.6L ~~600ml~~	300	25.3	1.55	5.72	843	136
9:59	10:01	0.6L	300	25.5	1.84	5.72	696	123.2
10:03	10:05	0.6L	300	25.5	2.56	5.71	654	121.7
		Stabilisation criteria		± 0.2 °c	± 0.2 mg/L	± 0.1 pH Units	± 5%	± 10 mV

OBSERVATIONS			
Odour:	NO	Sheen:	NO
Colour/ Turbidity:	light brown/ green - low	Recent rain (days):	-

SAMPLING					
Samples taken:	(Primary)	Blind	Split	Rinsate	TS/TB
Containers:					
Field filtered:					
Preservation:					

GROUNDWATER MONITORING RECORD FORM

PROJECT INFORMAION			
Client:		Monitoring Well ID:	GW3
Site Address:	Elamora Hotel	Logged By:	KV
Project:	E3014	Date:	17/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed:		Depth (m) as measured:	3.8m
Finish:	good	Co-ordinates:	—
Condition:	good	Surveyed levels:	—

METHODOLOGY AND EQUIPMENT			
Water measurement device:	Dip Tape	Reference point:	Ground Surface
Water quality meter:	YSI	Reference point to ground surface (mm):	0.0
GW Extraction method:	peripump		

GROUNDWATER GAUGING (PRE-PURGE)		GROUNDWATER GAUGING (POST-PURGE)	
SWL (m bgl):	1.7	SWL (m bgl):	2.6
Depth to Product (m bgl):	—	Depth to product (m bgl):	—
Product thickness (mm):	—	Product thickness (mm):	—
Time:	11.23	Time:	11:50

PURGING AND PHYSICO-CHEMICAL PARAMETERS

Time (started)	Time (finished)	Volume purged	Pump rate (mL/min)	Temperature (°c)	DO (mg/L)	pH (pH units)	EC (us/cm)	Redox potential (mv)
11:28	11:30	0.6L	300	23.7	1.55	5.13	547	61.6
11:32	11:34	0.6L	300	23.6	1.34	5.22	525	52.7
11:38	11:38	0.6L	300	23.4	0.86	5.10	511	25.6
		Stabilisation criteria		± 0.2 °c	± 0.2 mg/L	± 0.1 pH Units	± 5%	± 10 mV

OBSERVATIONS			
Odour:	~~No~~ Slight	Sheen:	No
Colour/ Turbidity:	clear / No turbidity	Recent rain (days):	—

SAMPLING					
Samples taken:	Primary	Blind	Split	Rinsate	TS/TB
Containers:					
Field filtered:					
Preservation:					

FOUNDATION EARTH SCIENCES

Well Installation and Development Details

PROJECT DETAILS	
Client:	Monitoring Well ID: GW1
Site Address: Elanora Hotel	Logged By: KV
Project: E3019	Date: 13/04/2023
METHODOLOGY AND EQUIPMENT	
Water Measurement Device: Dip Tape	Reference Zone: ground surface
Groundwater Extraction Method: Hand Bail	Reference Point to Ground Surface (mm): 0.0
WELL INSTALLATION DETAILS	
Total Bore Depth (m): 4.1 m	Screening Zone (m bgl): 4.1 - 0.6 m
Borehole Diameter: 100 mm	Finish: grid
Standpipe Diameter: 50 mm	Coordinates: -
GROUNDWATER GAUGING (PRE-DEVELOPMENT)	**GROUNDWATER GAUGING (POST-DEVELOPMENT)**
SWL (m bgl): 1.3 m	SWL (m bgl): 2.8
Depth to product (m bgl): -	Depth to product (m bgl): -
Product Thickness (mm): -	Product Thickness (mm): -
Time: 10:40	Time: 10:55
	Total GW Volume Extracted (L): 20 Bails
OBSERVATIONS (PRE-DEVELOPMENT)	**OBSERVATIONS (POST-DEVELOPMENT)**
Odour: Slight	Odour: Slight
Sheen: - No	Sheen: No
Colour: red brown	Colour: light brown
Turbidity: High	Turbidity: High
Other: No	Other: No

FOUNDATION EARTH SCIENCES

Well Installation and Development Details

PROJECT DETAILS	
Client:	**Monitoring Well ID:** GW2
Site Address: Elanora Hotel	**Logged By:** DG
Project: E3019	**Date:** 13/4/23
METHODOLOGY AND EQUIPMENT	
Water Measurement Device	**Reference Zone:**
Groundwater Extraction Method:	**Reference Point to Ground Surface (mm):**
WELL INSTALLATION DETAILS	
Total Bore Depth (m): 3.64	**Screening Zone (m bgl):** 3.64
Borehole Diameter:	**Finish:**
Standpipe Diameter:	**Coordinates:**
GROUNDWATER GAUGING (PRE-DEVELOPMENT)	**GROUNDWATER GAUGING (POST-DEVELOPMENT)**
SWL (m bgl): 0.3	**SWL (m bgl):** 3.6
Depth to product (m bgl):	**Depth to product (m bgl):**
Product Thickness (mm):	**Product Thickness (mm):**
Time: 2:10	**Time:** 3
	Total GW Volume Extracted (L): 15
OBSERVATIONS (PRE-DEVELOPMENT)	**OBSERVATIONS (POST-DEVELOPMENT)**
Odour: No	**Odour:** No
Sheen: No	**Sheen:** No
Colour: Murky	**Colour:** Pink/red
Turbidity: Med	**Turbidity:** High
Other:	**Other:**

FOUNDATION EARTH SCIENCES

Well Installation and Development Details

PROJECT DETAILS	
Client:	**Monitoring Well ID:** GW3
Site Address: Elamora Hotel	**Logged By:** DL
Project: E3019	**Date:** 13/4/23
METHODOLOGY AND EQUIPMENT	
Water Measurement Device	**Reference Zone:**
Groundwater Extraction Method:	**Reference Point to Ground Surface (mm):**
WELL INSTALLATION DETAILS	
Total Bore Depth (m): ~~4.5~~ 4.1	**Screening Zone (m bgl):** 3.5
Borehole Diameter:	**Finish:**
Standpipe Diameter:	**Coordinates:**
GROUNDWATER GAUGING (PRE-DEVELOPMENT)	**GROUNDWATER GAUGING (POST-DEVELOPMENT)**
SWL (m bgl): None	**SWL (m bgl):** None
Depth to product (m bgl):	**Depth to product (m bgl):**
Product Thickness (mm):	**Product Thickness (mm):**
Time:	**Time:**
	Total GW Volume Extracted (L):
OBSERVATIONS (PRE-DEVELOPMENT)	**OBSERVATIONS (POST-DEVELOPMENT)**
Odour:	**Odour:**
Sheen:	**Sheen:**
Colour:	**Colour:**
Turbidity:	**Turbidity:**
Other:	**Other:**

APPENDIX J: HISTORICAL AERIAL PHOTOGRAPHS

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Historical Aerial Photographs

29-31 and 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, East Gosford NSW

1954:

1965:

Broader view of East Gosford, including the landfill at Hylton Moore Park

1976:

Broader view of East Gosford, including the landfill at Hylton Moore Park

1984:

Broader view of East Gosford, including the landfill at Hylton Moore Park

1990:

Broader view of East Gosford, including the landfill at Hylton Moore Park

1993:

2003:

2005:

Broader view of East Gosford, including the landfill at Hylton Moore Park

2013:

Current (Six Maps):

APPENDIX K: SUMMARY TABLES

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Table K1

Sample Information				Heavy Metals (mg/kg)								TRH (mg/kg)						BTEX (mg/kg)					PAH (mg/kg)				OCP (mg/kg)												OPP (mg/kg)		Total Phenolics	PCB	PFAS(ug/kg)			Asbestos		
Label	Depth (m BGL)	Date	Soil Type	ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	ZINC	F1 (C_6-C_{10}) [2]	F2 (>C_{10}-C_{16}) [3]	F1 (C_6-C_{10})	F2 (>C_{10}-C_{16})	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{40})	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	NAPHTHALENE	BENZO(A)PYRENE	CARINOGENIC PAHs (as Bap TEQ)	TOTAL PAH	NAPHTHALENE	DDT + DDD + DDE	ALDRIN + DIELDRIN	CHLORDANE	ENDOSULFAN	ENDRIN	HEPTACHLOR	HCB	METHOXYCHLOR	DDT	Chlorpyrifos	Other OPP	Total Phenolics	TOTAL PCB(mg/kg)	Sum of PFOS and PFHxS	PFOA	PFOS	%w/w FA & AF	%w/w ACM - Commercial	Asbestos ID
FES DSI 2023																																														
BH1	0.3-0.4	13.04.2023	F: Silty Clay	2	<0.3	20	13	14	<0.05	27	24	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	<0.5	<1	<0.0016	<0.0008	<0.0016	-	-	ND
BH1	0.9-1.0	13.04.2023	F: Silty Clay	1	<0.3	7.1	<0.5	5	<0.05	0.6	<2	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH1	1.9-2.0	13.04.2023	N: Silty CLAY	3	<0.3	9.7	0.7	9	<0.05	0.8	2.7	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0016	<0.0008	<0.0016	-	-	-
BH2	0.2-0.3	13.04.2023	N: Silty CLAY	2	<0.3	21	<0.5	10	<0.05	0.6	3.3	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	<0.5	<1	<0.0016	<0.0008	<0.0016	-	-	ND
BH2	0.9-1.0	13.04.2023	N: Silty CLAY	4	<0.3	28	<0.5	13	<0.05	1.1	4.7	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH3	0.2-0.3	13.04.2023	F: Silty Sandy Clay	1	<0.3	7.1	1.3	11	<0.05	1.3	11	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	<0.5	<1	<0.0016	<0.0008	<0.0016	-	-	ND
BH3	0.9-1.0	13.04.2023	N: Silty CLAY	2	<0.3	12	<0.5	8	<0.05	0.8	3.3	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH4	0.1-0.2	13.04.2023	N: CLAY	4	<0.3	25	1.5	19	<0.05	2.2	12	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH5	0.1-0.2	13.04.2023	F: Silty Clay	1	<0.3	7.1	25	28	<0.05	2.2	47	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	<0.5	<1	-	-	-	-	-	ND
BH5	0.6-0.7	13.04.2023	F: Silty Clay	3	<0.3	12	0.7	14	<0.05	0.6	5.5	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	<0.0016	<0.0008	<0.0016	-	-	-
BH5	0.1-0.2	13.04.2023	N: Silty CLAY	6	<0.3	18	1.0	19	<0.05	0.6	11	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH6	0.1-0.2	13.04.2023	F: Sandy Clay	3	<0.3	7.6	20	9	<0.05	4.0	7.7	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH7	0.2-0.3	13.04.2023	F: Silty Clay	4	0.6	18	9.5	55	0.07	5.0	77	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH7	0.4-0.5	13.04.2023	N: Silty CLAY	3	<0.3	14	1.6	17	<0.05	1.3	18	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH8	0.3-0.4	13.04.2023	F: Silty Clay	<1	<0.3	4.3	0.8	7	<0.05	1.4	3.8	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH8	0.6-0.7	13.04.2023	N: Silty CLAY	1	<0.3	8.0	<0.5	4	<0.05	0.6	<2	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH9	0.2-0.3	13.04.2023	F: Silty Sandy Clay	2	<0.3	22	14	8	<0.05	31	19	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH9	0.9-1.0	13.04.2023	N: Silty CLAY	2	<0.3	21	4.9	10	<0.05	11	12	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH10	0.2-0.3	13.04.2023	F: Silty Clay	2	<0.3	21	10	8	<0.05	24	13	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	-	<1	-	-	-	-	-	ND
BH10	0.9-1.0	13.04.2023	N: Silty CLAY	3	<0.3	17	1.5	5	<0.05	5.9	5.1	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH11	0.3-0.4	13.04.2023	F: Silty Clay	3	<0.3	15	<0.5	8	<0.05	0.9	5.8	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH11	0.8-0.9	13.04.2023	N: Silty CLAY	4	<0.3	24	<0.5	11	<0.05	0.7	6.7	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH12	0.3-0.4	13.04.2023	F: Silty Clay	7	<0.3	47	<0.5	15	<0.05	0.9	7.1	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	<0.001	<0.01	ND
BH12	0.8-0.9	13.04.2023	N: CLAY	7	<0.3	19	<0.5	14	<0.05	<0.5	2.9	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH13	0.3-0.4	13.04.2023	F: Clayey Silt	2	<0.3	6.9	5.1	41	<0.05	0.8	160	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	-	<1	-	-	-	<0.001	<0.01	ND
BH13	0.8-0.9	13.04.2023	N: Silty CLAY	3	<0.3	24	<0.5	9	<0.05	0.6	18	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH14	0.1-0.2	13.04.2023	F: Sandy Clay	2	<0.3	11	10	44	<0.05	7.5	63	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH15	0.1-0.2	13.04.2023	F: Sandy Clay	2	<0.3	11	20	82	<0.05	6.5	180	<25	<25	<25	<25	120	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH16	0.3-0.4	13.04.2023	F: Silty Clay	3	<0.3	23	<0.5	8	<0.05	3.5	11	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH16	1.0-1.1	13.04.2023	N: Silty CLAY	3	<0.3	29	<0.5	8	<0.05	3.4	7.4	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	-
BH17	0.0-0.1	13.04.2023	F: Silty Clay	2	<0.3	8.6	5.8	31	<0.05	1.8	46	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	-	-	ND
BH18	0.2-0.3	13.04.2023	F: Silty Clay	2	<0.3	12	26	65	0.08	9.6	410	<25	<25	<25	<25	240	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.2	<0.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	-	-	-	<1	-	-	-	<0.001	<0.01	ND
BH19	1.1-1.2	13.04.2023	F: Silty Clay	2	<0.3	14	2.1	17	<0.05	1.3	12	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	0.1	0.2	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	<0.5	<1	<0.0016	<0.0008	<0.0016	-	-	ND
F1	surface	13.04.2023	Fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
F2	surface	13.04.2023	Fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Detected
D1	-	13.04.2023	-	<1	<0.3	3.7	1.4	6	<0.05	2.6	7.4	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	<0.5	<1	-	-	-	-	-	-
D2	-	13.04.2023	-	1	<0.3	6.9	1.0	11	<0.05	1.2	12	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.3	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<1.7	<0.5	<1	-	-	-	-	-	-
SS1	-	13.04.2023	-	<4	<0.4	7	3	8	<0.1	6	13	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<0.1	-	-	-	-	-	-
SS2	-	13.04.2023	-	<4	<0.4	8	1	11	<0.1	1	15	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	<0.05	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<0.1	-	-	-	-	-	-
Statistical Analysis																																													
No of observations											19																																			
Minimum											2																																			
Maximum											410																																			
Mean											58.15																																			
Standard Deviation											99.37																																			
95%UCL											**157.5**																																			
Limit of Resolution (LOR)				4	0.4	1	1	1	0.1	1	1	25	50	25	50	100	100	0.2	0.5	1	1	1	0.05	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			0.5	0.1				-	-	-
NEPM (2013) HIL D				**3000**	**900**	**3,600**	**240,000**	**1,500**	**730**	**6,000**	**400,000**												**40**	**4000**		**3600**	**45**	**530**	**2000**	**100**	**50**	**80**	**2500**		**340**		**240000**	**7**	**20,000**	**50,000**						
NEPM (2013) EIL & ESLs [1]				160																					370							640												
Fill BH3 (0.2-0.3m)						670	140	1810		55	290																																		
Nat BH3 (0.9-1.0m)						670	140	1810		56	215																																		
NEPM (2013) ESLs - (Fine Grain Soil - Clay / Silt) [1]												215	170			2,500	6,600	95	135	185	95		1.4																							
NEPM (2013) HSL D (CLAY)																																														
0m to <1m												310	NL					4	NL	NL	NL	NL																								
1m to <2m												480	NL					6	NL	NL	NL	NL																								
Soil Saturation Concentration (Csat)												850	560					430	630	68	330	10																								
NEPM (2013) HSL D (SILT)																																													
0m to <1m												250	NL					4	NL	NL	NL	NL																								
Soil Saturation Concentration (Csat)												910	570					440	640	69	330	10																								
NEPM (2013) Management Limit (Fine Grain Soil)														800	1,000	5,000	10,000																												
PFAS NEMP 2020																																													
Ecological Direct Exposure																																											**10,000ug/kg**	**1,000ug/kg**		
Ecological indirect exposure																																											**10ug/kg**		
NEPM (2013) HSL - Asbestos																																												<0.001%	Detected	
%w/w asbestos for FA and AF																																												<0.05 %	
%w/w asbestos for ACM - Commercial / Industrial																																												

Notes

1 Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7

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

3 To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.

NL Calculated HSL is Non Limiting per NEPM (2013)

ND Not detected

Table K2

Sample Information		Heavy Metals								TRH		BTEX							PAH					PFAS		Ammonia
SAMPLE ID	Date	ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	ZINC	F1 (C_6-C_{10}) [2]	F2 (>C_{10}-C_{16}) [3]	BENZENE	TOLUENE	ETHYL BENZENE	M/P-XYLENE	O-XYLENE	NAPHTHALENE	TOTAL-XYLENE	BENZO(A)PYRENE	ANTHRACENE	PHENANTHRENE	FLUORANTHENE	NAPHTHALENE	PFOS	PFOA	Ammonia
FES DSI 2023																										
GW1	17.04.2023	<1	0.2	<1	<1	<1	<0.0001	3	<5	<50	<60	<1	<0.5	<0.5	<1	<0.5	<0.5	<1.5	<0.1	<0.1	<0.1	<0.1	<0.1			350
GW2	17.04.2023	<1	<0.1	<1	1	<1	0.0001	**12**	**32**	<50	<60	<1	<0.5	<0.5	<1	<0.5	<0.5	<1.5	<0.1	<0.1	<0.1	<0.1	<0.1			<10
GW3	17.04.2023	<1	<0.1	<1	<1	<1	<0.0001	**16**	**55**	<50	110	<1	<0.5	<0.5	<1	<0.5	<0.5	<1.5	<0.1	<0.1	<0.1	<0.1	<0.1			50
D1	17.04.2023	1	0.2	<1	<1	<1	<0.0001	**66**	12	<50	<60	<1	<0.5	<0.5	<1	<0.5	<0.5	<1.5	<0.1	<0.1	<0.1	<0.1	<0.1			230
SS1	17.04.2023	<1	<0.1	<1	<1	<1	<0.05	1	4	<10	<50	<0.5	<1	<1	<2	<1	<1	<3	<0.1	<0.1	<0.1	<0.1	<0.2			-
GW1	19.04.2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.059	0.007	-
GW2	19.04.2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.024	0.004	-
GW3	19.04.2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002	-
D1	19.04.2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.011	0.003	-
GWSS1	19.04.2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.01	-
Limit of Resolution (LOR)		1	0.1	1	1	1	0.05	1	1	10	50	1	1	1	2	1	1	2	0.1	0.1	0.1	0.1	0.2	10	50	10
GILs - NEPM (2013) - Groundwater Investigation Levels																										
Fresh Waters [2]		24 / 13	0.20	1.00	1.40	3.40	0.06	11.00	8.00			950	-	-	200	350			-	-	-	-	16			900
Fresh Waters - Low Reliability (Trigger Values) [3]													180	80					0.1	0.01	0.6	1	-			
Marine Water [2]		**-**	**0.70**	**4.40**	**1.30**	**4.40**	**0.10**	**7.00**	**15.00**			**500**	**-**	**-**	**-**	**-**			**-**	**-**	**-**	**1**	**50**			**910**
Drinking Water [4]		10.00	2.00	50.00	2000.00	10.00	1.00	20.00	-			1	800	300		600			0.01	-	-	-	-			
Groundwater HSLs - NEPM (2013) HSL D (CLAY)																										
2m to <4m										NL	NL	30,000	NL	NL	-	-	NL	NL								
4m to <8m										NL	NL	30,000	NL	NL	-	-	NL	NL								
Solubility Limit										9,000	3,000	59,000	61,000	3,900	-	-	170	21,000								
PFAS NEPM 2020																										
Fresh Waters - 95% Species protection																								**0.13**	**220**	**0.13**
Marine - Interim																								**0.13**	**220**	**0.13**

Notes

1	All units are in ug/L
2	Investigation Levels apply to typical slightly-moderately disturbed systems
3	QSAR derived, statistical distribution method used, 95% trigger values applied as per ANZECC 2000
4	Investigation levels are taken from the health values of the Australian Drinking Water Guidelines NHMRC 2011
NL	Non Limiting

Table K3

Sample Information		ALKANES							ALKENES					BENZENES												Other VOC	
SAMPLE ID	GME DATE	TETRACHLOROMETHANE (CARBON TETRACHLORID	TRICHLOROMETHANE (CHLOROFORM)	BROMODICHLOROMETHANE	TRIHALOMETHANES (TOTAL)	1, 2-DICHLOROETHANE	CYCLOHEXANE	1,1,2-TRICHLOROETHANE	CHLOROETHENE (VINYL CHLORIDE)	TRICHLOROETHENE	CIS-1,2-DICHLOROETHENE	1,1-DICHLOROETHENE	TETRACHLOROETHENE (PCE PERCHLOROETHENE)	CHLOROBENZENE	1,2-DICHLOROBENZENE	1,3-DICHLOROBENZENE	1,4-DICHLOROBENZENE	1,2,3-TRICHLOROBENZENE	1,2,4-TRICHLOROBENZENE	ISOPROPYL BENZENE (CUMENE)	SEC-BUTYL BENZENE	1,3,5-TRIMETHYL BENZENE	N-PROPYL BENZENE	N-BUTYL BENZENE	1.2.4 - TRIMETHYLBENZENE	4-ISOPROPYL TOULENE	HEXACHLOROBUTADIENE
FES DSI 2023																										
GW1	17.04.2023	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
GW2	17.04.2023	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
GW3	17.04.2023	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
D1	17.04.2023	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SS1	17.04.2023	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Limit of Resolution (LOR)		1	1	1	1	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GILs - NEPM (2013) - Groundwater Investigation Levels																										
Fresh Waters[2]		NV	NV		-	NV	NV	6,500	NV	NV	NV	NV	NV	NV	160	260	60	3	85						NV		NV
Marine Waters [2]								**1,900**									**60**		**20**								
Marine Low reliability										330.00																
Fresh Water Low reliability (Trigger Values -99%) [a]			370		-																					
Fresh Water Low reliability (Trigger Values -95%) [b]					-					330										30						
Drinking Water [4]		3	**3**		250	3			0.30		60	30	50													
US EPA Regional Screening Levels (RSLs) May 2016																										
US EPA MCLs [c]							NV													NV	NV	NV	NV	NV	NV	NV	
US EPA Tapwater [d]							13,000													NV	2,000	120	660	1,000	15	NV	

Notes

1	All units are in ug/L
2	Investigation levels apply to typical slightly-moderately disturbed systems
4	Investigation levels are taken from the health values of the Australian Drinking Water Guidelines NHMRC 2011
-	NV - no derived value
-	" - " Not Tested
a:	QSAR derived, statistical distribution method used, 99% trigger value applied as per ANZECC guidelines for slightly-moderately disturbed systems
b:	QSAR derived, statistical distribution method used, 95% trigger value applied as per ANZECC guidelines for slightly-moderately disturbed systems
c:	US EPA Region 9 RSL (MCLs) utilised in absence of criteria from NEPM 2013. MCLs are legally enforceable USEPA drinking water standards
d:	US EPA Region 9 RSL (Tapwater) utilised in absence of criteria from NEPM 2013. Non cancer

Table K4

	Heavy Metals (mg/kg)								TRH (mg/kg)					BTEX (mg/kg)				PAH (mg/kg)		OCP (mg/kg)		OPP (mg/kg)		Phenol mg/kg	PCB (mg/kg)	
FOUNDATION EARTH SCIENCES	ARSENIC	CADMIUM	CHROMIUM	COPPER	LEAD	MERCURY	NICKEL	ZINC	C6-C9	C10-C14	C15-C28	C29-C36	C10-C36 [a]	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	BENZO(a)PYRENE	TOTAL PAH	Other OCPs	TOTAL ENDOSULFAN [11]	CHLORPYRIFOS	Total OPP	Total Phenol	TOTAL PCB	ASBESTOS ID (Presence / Absen
NSW EPA Waste Criteria (No Leachates)																										
CT1	100	20	100	-	100	4	40	-	NA	-	-	-	NA	10	288	600	1000	0.8	200	<50	60	4	250	288	<50	Detected
CT2	400	80	400	-	400	16	160	-	NA	-	-	-	NA	40	1152	2400	4000	3.2	800	<50	240	16	1000	1152	<50	
NSW EPA Waste Criteria (With Leachates)																										
SCC1	500	100	1900	-	1500	50	1050	-	650	-	-	-	10000	18	518	1080	1800	10	200	Total = <50**	108	7.5	250	518	<50**	
SCC2	2000	400	7600	-	6000	200	4200	-	2600	-	-	-	40000	72	2073	4320	7200	23	800	Total = <50**	432	30	1000	2073	<50**	
Limit of Resolution (LOR)	4	0.4	5	5	5	0.10	5	5	25	50	100	100	NA	0.2	0.5	1	3	0.05	0.05	0.1	0.1				0.1	
Sample ID	**Date Sampled**	**Depth**																								
	FES DSI 2023																									
BH1	13.04.2023	0.3-0.4	2	<0.3	20	13	14	<0.05	27	24	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	<0.2	<1.7	<0.5	<1	ND
BH1	13.04.2023	0.9-1.0	1	<0.3	7.1	<0.5	5	<0.05	0.6	<2	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH1	13.04.2023	1.9-2.0	3	<0.3	9.7	0.7	9	<0.05	0.8	2.7	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	-	-
BH2	13.04.2023	0.2-0.3	2	<0.3	21	<0.5	10	<0.05	0.6	3.3	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	<0.2	<1.7	<0.5	<1	ND
BH2	13.04.2023	0.9-1.0	4	<0.3	28	<0.5	13	<0.05	1.1	4.7	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH3	13.04.2023	0.2-0.3	1	<0.3	7.1	1.3	11	<0.05	1.3	11	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	<0.2	<1.7	<0.5	<1	ND
BH3	13.04.2023	0.9-1.0	2	<0.3	12	<0.5	8	<0.05	0.8	3.3	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH4	13.04.2023	0.1-0.2	4	<0.3	25	1.5	19	<0.05	2.2	12	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH5	13.04.2023	0.1-0.2	1	<0.3	7.1	25	28	<0.05	2.2	47	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	<0.2	<1.7	<0.5	<1	ND
BH5	13.04.2023	0.6-0.7	3	<0.3	12	0.7	14	<0.05	0.6	5.5	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH5	13.04.2023	0.1-0.2	6	<0.3	18	1	19	<0.05	0.6	11	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH6	13.04.2023	0.1-0.2	3	<0.3	7.6	20	9	<0.05	4	7.7	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH7	13.04.2023	0.2-0.3	4	0.6	18	9.5	55	0.07	5	77	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH7	13.04.2023	0.4-0.5	3	<0.3	14	1.6	17	<0.05	1.3	18	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH8	13.04.2023	0.3-0.4	<1	<0.3	4.3	0.8	7	<0.05	1.4	3.8	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH8	13.04.2023	0.6-0.7	1	<0.3	8	<0.5	4	<0.05	0.6	<2	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH9	13.04.2023	0.2-0.3	2	<0.3	22	14	8	<0.05	31	19	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH9	13.04.2023	0.9-1.0	2	<0.3	21	4.9	10	<0.05	11	12	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH10	13.04.2023	0.2-0.3	2	<0.3	21	10	8	<0.05	24	13	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	<0.2	<1.7	-	<1	ND
BH10	13.04.2023	0.9-1.0	3	<0.3	17	1.5	5	<0.05	5.9	5.1	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH11	13.04.2023	0.3-0.4	3	<0.3	15	<0.5	8	<0.05	0.9	5.8	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH11	13.04.2023	0.8-0.9	4	<0.3	24	<0.5	11	<0.05	0.7	6.7	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH12	13.04.2023	0.3-0.4	7	<0.3	47	<0.5	15	<0.05	0.9	7.1	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH12	13.04.2023	0.8-0.9	7	<0.3	19	<0.5	14	<0.05	<0.5	2.9	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH13	13.04.2023	0.3-0.4	2	<0.3	6.9	5.1	41	<0.05	0.8	160	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	<0.2	<1.7	-	<1	ND
BH13	13.04.2023	0.8-0.9	3	<0.3	24	<0.5	9	<0.05	0.6	18	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH14	13.04.2023	0.1-0.2	2	<0.3	11	10	44	<0.05	7.5	63	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH15	13.04.2023	0.1-0.2	2	<0.3	11	20	82	<0.05	6.5	180	<20	<20	55	110	160	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH16	13.04.2023	0.3-0.4	3	<0.3	23	<0.5	8	<0.05	3.5	11	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH16	13.04.2023	1.0-1.1	3	<0.3	29	<0.5	8	<0.05	3.4	7.4	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	-
BH17	13.04.2023	0.0-0.1	2	<0.3	8.6	5.8	31	<0.05	1.8	46	<20	<20	<45	55	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH18	13.04.2023	0.2-0.3	2	<0.3	12	26	65	0.08	9.6	410	<20	<20	180	97	280	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	-	-	-	<1	ND
BH19	13.04.2023	1.1-1.2	2	<0.3	14	2.1	17	<0.05	1.3	12	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	0.1	1.2	<LOR	<0.1	<0.2	<1.7	<0.5	<1	ND
F1	13.04.2023	fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<LOR	<0.1	-	-	-	-	Asbestos Detected
F2	13.04.2023	fragment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<LOR	<0.1	-	-	-	-	Asbestos Detected
D1	13.04.2023	-	<1	<0.3	3.7	1.4	6	<0.05	2.6	7.4	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	<0.2	<1.7	<0.5	<1	-
D2	13.04.2023	-	1	<0.3	6.9	1	11	<0.05	1.2	12	<20	<20	<45	<45	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.8	<LOR	<0.1	<0.2	<1.7	<0.5	<1	-
SS1	13.04.2023	-	<4	<0.4	7	3	8	<0.1	6	13	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	<0.05	<0.05	<LOR	<0.1	<0.1	<0.1	<5	<0.1	-
SS2	13.04.2023	-	<4	<0.4	8	1	11	<0.1	1	15	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	<0.05	<0.05	<LOR	<0.1	<0.1	<0.1	<5	<0.1	-

Notes

1 CT1, CT2 : Total concentrations used for defining General Solid Waste and Restricted Solid Waste respectively (without TCLP)
2 SCC1, SCC2 : Total Concentration used for defining General Solid Waste and Restricted Solid Waste respectively (in conjunction with TCLP)
3 Concentrations in GREEN exceed the CT1 criteria
4 Concentrations in RED exceed the CT2 criteria
5 Concentrations in BLUE exceed the SCC1 criteria
6 Concentrations in ORANGE exceed the SCC2 criteria
7 Concentrations in YELLOW indicate the presence of Asbestos
8 NA = Not Applicable
9 "-" Not Tested
10 *** Indicates Retest Result
11 Total Endosulfan = Endosulfan I, Endosulfan II and Endosulfan Sulphate

APPENDIX L: CALIBRATION CERTIFICATE

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Multi Parameter Water Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **YSI Quatro Pro Plus**
Serial No. **09K100887**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		393774	pH 6.99
2. pH 4.00		pH 4.00		399527	pH 4.00
3. mV		232.3mV		398884/400204	232.3mV
4. SPC		2760uS/cm		385789	2761uS/cm
5. D.O		0.0%		391223	0.0%
6. Temp		24.2 °C		MultiTherm	23.1°C

Calibrated by: **Adam Nikolic**

Calibration date: **6/04/2023**

Next calibration due: **6/05/2023**

APPENDIX M: LAND TITLE INFORMATION

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Title Search

30/03/2023 01:45 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 2/1016073

SEARCH DATE	TIME	EDITION NO	DATE
30/3/2023	1:44 PM	2	1/7/2019

LAND

LOT 2 IN DEPOSITED PLAN 1016073
AT EAST GOSFORD
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1016073

FIRST SCHEDULE

BONYTHON ELANORA PTY LTD (T AP364365)

SECOND SCHEDULE (4 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 DP1016073 RIGHT OF WAY 3 METRE(S) WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
3 DP1016073 RIGHT OF WAY 2 METRE(S) WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
4 AP364366 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Direct Info Pty Ltd - ABN 25 160 378 263 an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar-General in accordance with Section 96B (2) of the Real Property Act, 1900.

LAND REGISTRY SERVICES

Direct Info
Quick and easy online

DI-E3019 PRINTED ON 30/3/2023

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LAND REGISTRY SERVICES

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Historical Search
30/03/2023 01:46 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 1:45PM

FOLIO: 2/1016073

First Title(s): OLD SYSTEM
Prior Title(s): A/161121 10/653037

Recorded	Number	Type of Instrument	C.T. Issue
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CREATED
		EDITION 1	
14/9/2015	AJ811575	DEPARTMENTAL DEALING	
1/7/2019	AP364365	TRANSFER	
1/7/2019	AP364366	MORTGAGE	EDITION 2
		CORD ISSUED	

*** END OF SEARCH ***

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Title Search

30/03/2023 01:46 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 3/1016073

SEARCH DATE	TIME	EDITION NO	DATE
30/3/2023	1:45 PM	2	1/7/2019

LAND

LOT 3 IN DEPOSITED PLAN 1016073
AT EAST GOSFORD
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1016073

FIRST SCHEDULE

BONYTHON ELANORA PTY LTD (T AP364365)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AP364366 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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30/03/2023 01:47 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 1:45PM

FOLIO: 3/1016073

First Title(s): OLD SYSTEM

Prior Title(s): 1/996489

Recorded	Number	Type of Instrument	C.T. Issue
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CREATED
			EDITION 1
14/9/2015	AJ811575	DEPARTMENTAL DEALING	
1/7/2019	AP364365	TRANSFER	
1/7/2019	AP364366	MORTGAGE	EDITION 2
			CORD ISSUED

*** END OF SEARCH ***

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Historical Search
03/04/2023 12:58 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

3/4/2023 12:56PM

FOLIO: 1/996489

First Title(s): OLD SYSTEM
Prior Title(s): CA63411

Recorded	Number	Type of Instrument	C.T. Issue
31/10/1994	DP996489	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
18/1/1995	CA63411	CONVERSION ACTION	FOLIO CREATED EDITION 1
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Direct Info
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Document Inquiry
03/04/2023 01:02 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - DOCUMENT INQUIRY

Document Number: CA63411

Document Type: CONVERSION ACTION

Document Status: ACTION COMPLETE

Document Status Date: 15/5/2000

Titles Created: 1/996489

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Title Search

30/03/2023 01:38 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 4/1016073

SEARCH DATE	TIME	EDITION NO	DATE
30/3/2023	1:36 PM	2	1/7/2019

LAND

LOT 4 IN DEPOSITED PLAN 1016073
AT EAST GOSFORD
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1016073

FIRST SCHEDULE

BONYTHON ELANORA PTY LTD (T AP364365)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AP364366 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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LAND REGISTRY SERVICES

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Historical Search
30/03/2023 01:39 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 1:38PM

FOLIO: 4/1016073

First Title(s): OLD SYSTEM
Prior Title(s): 2/996489

Recorded	Number	Type of Instrument	C.T. Issue
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CREATED
			EDITION 1
14/9/2015	AJ811575	DEPARTMENTAL DEALING	
1/7/2019	AP364365	TRANSFER	
1/7/2019	AP364366	MORTGAGE	EDITION 2
			CORD ISSUED

*** END OF SEARCH ***

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Historical Search
30/03/2023 01:57 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 1:56PM

FOLIO: 2/996489

First Title(s): OLD SYSTEM
Prior Title(s): CA63412

Recorded	Number	Type of Instrument	C.T. Issue
31/10/1994	DP996489	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
18/1/1995	CA63412	CONVERSION ACTION	FOLIO CREATED EDITION 1
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Req:R348339 /Doc:DL AP364365 /Rev:02-Jul-2019 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 13:55 /Seq:1 of 1
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

Form: 01T
Release: 6·2

TRANSFER

New South Wales
Real Property Act 1900

AP364365W

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the by this form for the establishment and maintenance of the Real Property the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY

Revenue NSW use only

Office of State Revenue
NSW Treasury
Client No: 3323749 2766
Duty: $10 Trans No: 9608747-001
Asst details: S27

(A) **TORRENS TITLE** 2/1016073, 3/1016073 and 4/1016073

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
654X	M J ARMSTRONG & CO - DENTONS 654X LPP:131317K Reference: 486428	T TW

(C) **TRANSFEROR** CUSICK HOTELS PTY LIMITED (ACN 000 628 035)

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 3,907,000.00 and as regards

(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** BONYTHON ELANORA PTY LTD (ACN 633 140 315)

(I) **TENANCY:**

DATE 25·6·19

(J) Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Company: CUSICK HOTELS PTY LIMITED (ACN 000 628 035)
Authority: section 127 of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: Damien John Cusick
Office held: Director

Signature of authorised person: M.A. Cusick
Name of authorised person: MICHAEL ALTON CUSICK
Office held: DIRECTOR

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name: ANDREW WENNERBOM
Signatory's capacity: solicitor

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. Full name: Signature:

** s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

1708

LAND REGISTRY SERVICES

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Document Inquiry
30/03/2023 01:59 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - DOCUMENT INQUIRY

Document Number: CA63412

Document Type: CONVERSION ACTION

Document Status: ACTION COMPLETE

Document Status Date: 15/5/2000

Affected Titles: BK 3148 NO 865

Titles Created: 2/996489

*** END OF SEARCH ***

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LAND REGISTRY SERVICES

Direct Info
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Title Search

30/03/2023 01:43 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 7/658304

SEARCH DATE	TIME	EDITION NO	DATE
30/3/2023	1:42 PM	12	1/7/2019

LAND

LOT 7 IN DEPOSITED PLAN 658304
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP658304

FIRST SCHEDULE

BONYTHON ELANORA PTY LTD (T AP364553)

SECOND SCHEDULE (6 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 M544530 EASEMENT FOR DRAINAGE AFFECTING THE PART OF THE LAND ABOVE DESCRIBED SHOWN AS 1.83 METRES WIDE IN PLAN WITH M544530
3 AH975349 LEASE TO WILHELMINA ANTONIA MARIA WEWER OF SHOP 1, 29-31 VICTORIA STREET, EAST GOSFORD. EXPIRES: 31/1/2018. OPTION OF RENEWAL: 5 YEARS.
AJ706064 TRANSFER OF LEASE AH975349 LESSEE NOW MICHAEL'S FAMILY RESTAURANT PTY LIMITED
4 AI346186 LEASE TO KCR ECO FRIENDLY PTY LTD OF SHED 29 VICTORIA STREET, EAST GOSFORD. EXPIRES: 26/9/2018. OPTION OF RENEWAL: 5 YEARS.
AN683602 VARIATION OF LEASE AI346186 EXPIRY DATE NOW 26/9/2023. OPTION OF RENEWAL: PRESERVED.
5 AM60736 LEASE TO VISHAL'S INDIAN RESTAURANT PTY LIMITED OF SHOP 3, 29 VICTORIA STREET, EAST GOSFORD. EXPIRES: 30/6/2019. OPTION OF RENEWAL: 3 YEARS AND ONE FURTHER OPTION OF 3 YEARS.
6 AP364554 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

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UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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Historical Search
30/03/2023 01:44 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 1:42PM

FOLIO: 7/658304

First Title(s): OLD SYSTEM
Prior Title(s): VOL 15407 FOL 104

Recorded	Number	Type of Instrument	C.T. Issue
30/6/1995		CONVERTED TO COMPUTER FOLIO CT NOT ISSUED	FOLIO CREATED
3/7/1996	2275395	LEASE	EDITION 1
6/2/2001	7390690	LEASE	EDITION 2
28/10/2004	AB54928	LEASE	EDITION 3
20/12/2005	AB999375	LEASE	EDITION 4
11/5/2006	AC299006	TRANSFER OF LEASE	
15/7/2008	AE87173	LEASE	EDITION 5
28/4/2011	AG197180	LEASE	EDITION 6
27/8/2013	AH975349	LEASE	EDITION 7
5/5/2014	AI346186	LEASE	EDITION 8
4/8/2015	AJ706064	TRANSFER OF LEASE	EDITION 9
16/1/2017	AM60736	LEASE	EDITION 10
5/9/2018	AN683602	VARIATION OF LEASE	
9/9/2018	AN695392	DEPARTMENTAL DEALING CORD ISSUED	EDITION 11
1/7/2019	AP364552	DISCHARGE OF MORTGAGE	
1/7/2019	AP364553	TRANSFER	

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1/7/2019 AP364554 MORTGAGE EDITION 12
CORD ISSUED

*** END OF SEARCH ***

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Req:R350791 /Doc:CT 15407-104 CT /Rev:17-Dec-2010 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 17:15 /Seq:1 of 4
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CERTIFICATE OF TITLE

15407104

NEW SOUTH WALES

REAL PROPERTY ACT, 1900

First Title Old System

Prior Title Vol. 6094 Fol. 229

Vol. 15407 Fol. 104

CANCELLED

EDITION ISSUED 5 12 1985

SEE AUTO FOLIO

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

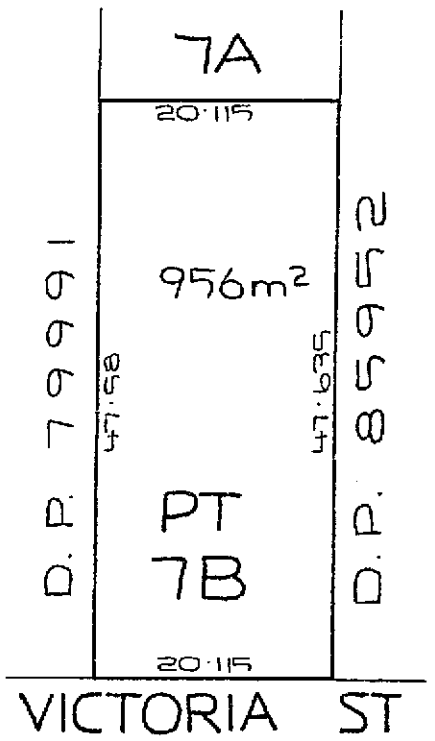
Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON (Page 1) Vol. 15407 Fol. 104

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

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



THE LAND WITHIN DESCRIBED IS LOT 7 IN DP658304

LAND REFERRED TO

Part of Lot 7B in DP365458 shown in the plan hereon at East Gosford in the City of Gosford Parish of Gosford County of Northumberland.

FIRST SCHEDULE

ARMIWILL PTY LIMITED. S870240

SECOND SCHEDULE

1. Reservations and conditions in the Crown Grant.
2. M544530 Easement for drainage affecting the part of the land above described shown as 1.83 metres wide in plan with M544530.
3. ~~S736094 Lease to Nafia Pty. Limited of Shop 1, 29 Victoria Street, East Gosford. Expires 30-6-1987. Option of Renewal 3 years.~~ X822948
4. ~~V241542 Lease to David Anthony Crawford and Jacqueline Crawford as Joint Tenants of Shop 2, 29 Victoria Street, East Gosford. Expires 24-9-1986. Option of Renewal 3 years.~~ X822950
5. ~~V662302 Lease to Margaret Cecilia Mullins and Ann Watson as Tenants in Common of Shop 3, 29 Victoria Street, East Gosford. Expires 5-7-1987.~~ X822951

Req:R350791 /Doc:CT 15407-104 CT /Rev:17-Dec-2010 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 17:15 /Seq:2 of 4
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Vol 15407 Fol 104

L.O. 55

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR

Registrar General

CuSick Hotels Pty Limited by Transfer E434373. Registered 8-5-1992

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION
~~V957893 Mortgage to National Australia Bank Limited. Registered 6-12-1985~~		E139362
X822948 Lease to Nafixi Pty. Ltd. of premises being known as Shop 1, 29 Victoria Street, East Gosford. Expires 19-7-1990. Option of renewal for 2 years. Registered 5-9-1988.		Z343953
X822949 Lease to Margaret Cecilia Mullins and Ann Watson as tenants in common in equal shares of premises being Garage at the rear of 29 Victoria Street, East Gosford Expires 13-4-1994. Option of renewal for 3 years. Registered 5-9-1988.		E217915
~~X822950 Lease to David Anthony Crawford and Jacqueline Crawford as joint tenants of~~ being shop 2, 29 Victoria Street, East Gosford. Expires 24-9-1990. Option of renewal for 2 years . Registered 5-9-1988.		E217913
X822951 Lease to Margaret Cecilia Mullins of premises being known as Shop 3, 29 Victoria Street, East Gosford. Expires 5-7-1990. Option of renewal for 2 years Registered 5-9-1988.		E217914
~~X822951~~ Lease X879717 Transfer of Lease. Lessee now Pavlova Pantry Marketing Pty. Limited Registered 5-10-1988		Z343953
Z343953 Lease to Adam Kamaledine of premises being shop 1, 29 Victoria Street East Gosford. Expires 27-9-1995. Option of renewal 5 yrs. Registered 22-11-1990		
~~Z343953 Lease to Adam Kamaledine of premises being shop 1, 29 Victoria Street East~~ Z343953 Lease Z343954 Mortgage of Lease to Commonwealth Development Bank of Australia Registered 22-11-1990		I151497
~~E217913 Lease to David Anthony Crawford & Jacqueline Crawford as joint tenants of shop 2, 29 Victoria St. East Gosford. Expires 24-9-1993. Option of renewal 3 years. Registered 13-2-1992.~~		U783454
E217914, Lease to Pavlova Pantry Marketing Pty Limited of Shop 3, 29 Victoria St., East Gosford. Expires 31-12-1993. Option of renewal 3 years. Registered 13-2-1992.		
E217915. Lease to Margaret Cecilia Mullins of Garage at rear of 29 Victoria St., East Gosford. Expires 13-4-1994. Option of renewal 3 years. Registered 13-2-1992.		
E434374 Mortgage to National Australia Bank Limited Registered 8-5-1992		
Z343953 Lease I151498 Transfer of Lease to Bassam Nasr. Registered 2-3-1993		

NOTATIONS AND UNREGISTERED DEALINGS

V957893 X822948 L — 5 L — 6 L — 1 L X879717 Z343953 L Shop 1 Z343954 M E139362 Lpmt E217913 L 2 E434373 T @ 8 I151497 Dpmt @ TL U783454 @ R

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

Req:R350791 /Doc:CT 15407-104 CT /Rev:17-Dec-2010 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 17:15 /Seq:3 of 4
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Vol. 15407 Fol. 104

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	Registrar General
CANCELLED SEE AUTO FOLIO	

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION
U783454 Lease to David Anthony Crawford and Jacqueline Crawford of Shop 2, 29 Victoria Street, East Gosford. Expires 24-9-1996 Option of Renewal 3 yrs. Registered 1-12-1994.		

NOTATIONS AND UNREGISTERED DEALINGS

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

Req:R350791 /Doc:CT 15407-104 CT /Rev:17-Dec-2010 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 17:15 /Seq:4 of 4
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

Vol. 15407 Fol. 104

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	Registrar General
CANCELLED SEE AUTO FOLIO	

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION

NOTATIONS AND UNREGISTERED DEALINGS

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

LAND REGISTRY SERVICES

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04/05/2023 04:32 PM

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Req:R513070 /Doc:CT 06094-229 CT /Rev:08-Aug-2012 /NSW LRS /Prt:04-May-2023 16:30 /Seq:1 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

201

Appn. No. 7377

Reference to last certificate

Vol. 5983 Fol. 171

25949—1 1149

New South Wales

[CERTIFICATE OF TITLE.]

REGISTER BOOK.

Vol. 6094 Fol. 229

As to whole (excluding road) this deed is cancelled and New Certificate of Title Issued Vol 15407 Fol 104 dated 5-12-1985 Vide V957892

E S N L

CANCELLED R

KATHLEEN AMELIA FOOTT of Gosford, Married Woman, Transferee under Instrument of Transfer No.F69199 is now the proprietor of an Estate in Fee Simple,

subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in That piece of land situated in the Township of East Gosford in the Shire of Gosford Parish of Gosford , and County of Northumberland containing Thirty nine and one quarter perches or thereabouts as shown in the plan hereon and therein edged red being Lot 7B in plan annexed to the said Instrument of Transfer No.F69199 and being part of 500 acres (Portion 179 of Parish) originally granted to Samuel Peek by Crown Grant dated the 11th day of June 1841.

The residue of land in this folio comprises road in DP 528569.

In witness whereof I have hereunto signed my name and affixed my Seal, this Ninth day of February , 1950

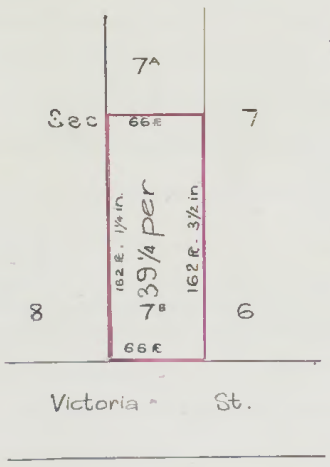
Signed in the presence of G. McKern

J. Wells
Registrar-General.

REGISTRAR GENERAL NEW SOUTH WALES

MORTGAGE No. F279200 has been discharged
See K129830 Entered 3rd November 1965
J Watson
REGISTRAR GENERAL

No. K129831 MORTGAGE dated 8th October 1965
to General Credits (Finance) Pty Limited
Entered 3rd November 1965
J Watson
REGISTRAR GENERAL



The interest of the Council of the Shire of Gosford in the addition to existing road shown on D.P. 528569 Entered 17/5/1968
J Watson
Registrar General

F 69199 PJ. Scale :- 100 feet to one inch.

No. F279700 MORTGAGE dated 31st May 1950 from the said Kathleen Amelia Foott to Gosford and District Co-operative Building Society Limited

Produced 8th August 1950 and entered 12th October 1950 at 12 o'clock in the noon.

L. Wells
REGISTRAR GENERAL

MORTGAGE No. K129831 has been discharged.
See L193622 Entered 6th October 1968.
J Watson
REGISTRAR GENERAL

DP528569 CNI
CT to Delivery 24/5/68

Req:R513070 /Doc:CT 06094-229 CT /Rev:08-Aug-2012 /NSW LRS /Prt:04-May-2023 16:30 /Seq:2 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

Te
Z193623

William James Lloyd Hollier of Wyoming, Real Estate Agent, and Audrey Grace Hollier, his wife, are now the registered proprietors of the land within described as joint tenants.

See TRANSFER No. L193623 dated 27th day of September 1968.

Entered 4th day of October 1968.

REGISTRAR GENERAL

M
L256201

No. L256201 MORTGAGE dated 24th September 1968 to Commonwealth Trading Bank of Australia

Entered 4th December 1968

Discharged S870239 14-1-1982

REGISTRAR GENERAL

No. M544530 Transfer and Grant, dated 11th November 1971, of an easement for drainage, as more fully set out in the said instrument affecting that part of the land within described shown as drainage easement 6 feet wide in plan annexed to Transfer No. M544530, with consent of Mortgagee.

REGISTERED. 11th January 1972.

REGISTRAR GENERAL

Joe
P140894

No. P403949 Lease dated 20th March 1972 to Robin Tanetua Leckie Forbes of Mount Clare, Manager and Roslyn Gay Forbes his wife of premises known as Shop No. 3, 29 Victoria Street East Gosford

Entered 15th September 1925

Expired 24-11-1977

REGISTRAR GENERAL.

S656436 CAVEAT by NAFIXI PTY. LIMITED affecting premises known as Shop 1 29 Victoria Street, East Gosford. Registered 24-9-1981

Lapsed S736094 24-11-1982

REGISTRAR GENERAL

S736094 Lease to Nafixi Pty Limited of premises being Shop 1, 29 Victoria Street, East Gosford with option of renewal Expires 30-6-1984 Registered 24-11-981

REGISTRAR GENERAL

For Cancellation see ...front... page

B2
S736095 Lease to Glen Saxsby and Dianne Parkinson as joint tenants of premises being Shop 3, 29 Victoria Street East Gosford with option of renewal Expires 6-7-1984 Registered 24-11-1981

EXPIRED 30-5-1985

REGISTRAR GENERAL

B2
S736096 Lease to Elca Enterprises Pty Limited of premises being Shop 2, 29 Victoria Street, East Gosford with option of renewal Expires 25-9-1983 Registered 24-11-1981

Expired V241542 30-7-1984

REGISTRAR GENERAL

REGISTERED PROPRIETOR Armwill Pty. limited by Transfer S870240. Registered 14-1-1982

REGISTRAR GENERAL

S870241 Mortgage to Actif Investments Pty. limited. Registered 14-1-1982

Discharged V957492 15-10-1985

REGISTRAR GENERAL

S736095 Lease. Lessee: Margaret Cecilia Mullins and Ann Watson as tenants in common by Transfer S949088. Registered 8-3-1982

CANCELLED V662302 23-5-1985

REGISTRAR GENERAL

~~REGISTERED PROPRIETOR~~ S736096 Lease. Lessee: David Anthony Crawford and Jacqueline Crawford as joint tenants by Transfer T365489 Registered 4-1-1983

Cancelled V241542 30-7-1984

REGISTRAR GENERAL

V241542 Lease to David Anthony Crawford and ~~Jennifer~~ JACQUELINE Crawford as joint tenants of premises being Shop 2, 29 Victoria Street East Gosford Expires 24-9-1988 with option of renewal 3 years Registered 30-7-1984

REGISTRAR GENERAL

V662302 LEASE to MARGARET CECILIA MULLINS and ANN WATSON as tenants in common of premises being Shop 3, 29 Victoria Street East Gosford. Registered 22.5.1985 Expires 5-7-1987

S656436 (Shop 1) pte x 1 | S736094 Lse to 5 Lse 6 Lse | S853039 w/t (unnecessary) | T365489 (S736096) | V241542 (Shop 2) | V662302 (Shop 3) | V957492 DM -93 M ANC

Req:R348495 /Doc:BK 3148-865 NO /Rev:23-May-2015 /NSW LRS /Prt:30-Mar-2023 14:09 /Seq:1 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

CONVEYANCE New South Wales Stamp Duty 75c.
No. 865 Book 3148

$12 APR 1974

NSW STAMP DUTY REGISTRATION NOT OPPOSED.

THIS DEED made the 13th day of March One Thousand Nine Hundred and Seventy-Four BETWEEN BETTINA MARY HOWARD of Block 447, Beelbangera in the State of New South Wales, Married Woman, hereinafter called "The Executrix" of the one part and CUSICK HOTELS PTY. LIMITED, a Company duly incorporated in the said State and having its registered office at Suite 1, 7th Floor, 49 Market Street, Sydney hereinafter called "The Purchaser" of the other part WHEREAS by a Contract for Sale dated the 8th day of March, 1973 and made between ELIZABETH KENNEDY DILL of the one part and the said Purchaser of the other part, the said ELIZABETH KENNEDY DILL agreed to sell and the said Purchaser agreed to purchase the hereditaments hereinafter described at the price of $26,000.00. and thereupon the sum of $2,600.00. was paid by the said Purchaser to CHAPMAN & FRAZER PTY. LIMITED, Real Estate Agents, 117 Mann Street, Gosford as agents for the said ELIZABETH KENNEDY DILL by way of deposit and in part payment of the said purchase money but no further part of the said purchase money has been paid AND WHEREAS the said ELIZABETH KENNEDY DILL died on the 26th April, 1973 having made her will dated the 15th October, 1964 whereby she appointed the said BETTINA MARY HOWARD as Executrix of the will and Probate thereof No. 753030 was on the 11th July, 1973 granted by the Supreme Court of New South Wales in its Probate jurisdiction to the said Executrix AND WHEREAS the said Purchaser had requested the said Executrix to carry into effect the said Contract for Sale entered into by the said ELIZABETH KENNEDY DILL by conveying and assuring the said hereditaments in manner hereinafter mentioned NOW THIS DEED WITNESSETH that in consideration of the sum of $2,600.00. paid by way of deposit as aforesaid and of the sum of $23,400.00. now paid by the said Purchaser to the said BETTINA MARY HOWARD as Executrix of the said ELIZABETH KENNEDY DILL (the payment and receipt in manner aforesaid of which respective sums of $2,600.00. and $23,400.00. making together the said purchase money or sum of $26,000.00. the said Executrix hereby acknowledges). The said Executrix as Executrix of the Estate of the said ELIZABETH KENNEDY DILL and by virtue of the powers conferred on her by the wills, Probate and Administration Act, 1898, the Conveyancing Act, 1919 as amended and of every other power her hereunto enabling doth hereby convey the said land unto the purchaser in fee simple and the said Executrix covenants to produce the Probate of the said ELIZABETH KENNEDY DILL to the said purchaser and its assigns.

IN WITNESS WHEREOF the Vendor has set her hand and seal the day and year first hereinbefore written.

THE SCHEDULE HEREINBEFORE REFERRED TO

ALL THAT piece or parcel of land containing by admeasurement 19¾ perches a little more or less situate in the Town of East Gosford Parish of Gosford County of Northumberland being Lot 2 on plan covered by Council Clerk's Certificate Number 209 of 14/7/48 and being part of Lot B being part of a subdivision of Lot 9 of Section 7 of the said Town COMMENCING at a point on the south western side of Brougham Street bearing 135 degrees 7 minutes 65 feet 10 inches from its intersection with the south eastern side of Adelaide Street and bounded on the north east by part of the south western side of Brougham Street aforesaid bearing 135 degrees 7 minutes 65 feet 10¾ inches thence on the south east by part of the north western boundary of Lot 8 of Section 7 of the said Town of East Gosford bearing 225 degrees 5 minutes 82 feet 6 inches thence on the south west by part of the north eastern boundary of Lot A being part of a subdivision of Lot 9 of Section 7 of the said Town bearing 315 degrees 7 minutes 65 feet 10¼ inches thence on the north west by the south eastern boundary of Lot 1 on said plan covered by Council Clerk's Certificate Number 209 of 14/7/48 bearing 45 degrees 3 minutes 82 feet 6 inches to the point of commencement.

SIGNED SEALED AND DELIVERED)
by the said BETTINA MARY HOWARD) (Sgd.) B. Howard.
in the presence of:-)

(Sgd.) D. B. MACKAY, J.P.

Req:R348495 /Doc:BK 3148-865 NO /Rev:23-May-2015 /NSW LRS /Prt:30-Mar-2023 14:09 /Seq:2 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

JOHN MICHAEL HOUSTON of The Crescent, Manly, clerk to Messrs. B. E. Nagel & Co., Solicitors, being duly sworn, makes oath and says: - The writing contained on the preceding page has been compared by me with the original Deed, and is a true copy thereof.

Sworn at SYDNEY this 30th day of April 1974, Before me -

Justice of the Peace.

Registered in the office of the Registrar General at Sydney, the 30th day of April 1974, at 35 minutes past 12 o'clock and lodged by JOHN MICHAEL HOUSTON of The Crescent, Manly, clerk to Messrs. B. E. Nagel & Co., Solicitors of 49 Market Street, Sydney.

Registrar General.

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DI-E3019 PRINTED ON 3/4/2023

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Title Search

30/03/2023 01:41 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 7A/365458

SEARCH DATE	TIME	EDITION NO	DATE
30/3/2023	1:40 PM	1	1/7/2019

LAND

LOT 7A IN DEPOSITED PLAN 365458
AT EAST GOSFORD
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP365458

FIRST SCHEDULE

BONYTHON ELANORA PTY LTD (T AP364553)

SECOND SCHEDULE (2 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AP364554 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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DI-E3019 PRINTED ON 30/3/2023

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register.
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LAND REGISTRY SERVICES

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Historical Search
30/03/2023 01:43 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 1:41PM

FOLIO: 7A/365458

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 6519 FOL 182

Recorded	Number	Type of Instrument	C.T. Issue
2/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
21/11/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
1/7/2019	AP364553	TRANSFER	
1/7/2019	AP364554	MORTGAGE	EDITION 1 CORD ISSUED

*** END OF SEARCH ***

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Req:R350522 /Doc:DL AP364553 /Rev:02-Jul-2019 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 16:41 /Seq:1 of 1
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

Form: 01T
Release: 6·2

TRANSFER

New South Wales
Real Property Act 1900

AP364553V

18

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises th by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY Revenue NSW use only

Office of State Revenue
NSW Treasury
Client No: 2323749
Duty: $10 Trans No: 9608707 2766 001
Asst details:

(A) **TORRENS TITLE** 7/658304 and 7A/365458

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and Customer Account Number if any	CODES
654X	M J ARMSTRONG & CO - DENTONS 654X LPP:131317K Reference: 486428	T TW

(C) **TRANSFEROR** CUSICK HOTELS PTY LIMITED (ACN 000 628 035)

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 2,113,000.00 and as regards

(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** BONYTHON ELANORA PTY LTD (ACN 633 140 315)

(I) **TENANCY:**

DATE 25·6·19

(J) Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Company: CUSICK HOTELS PTY LIMITED (ACN 000 628 035)
Authority: section 127 of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: Damien John Cusick
Office held: Director

Signature of authorised person:
Name of authorised person: Michael Alton Cusick
Office held: Director

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name: ANDREW WENNERBOM
Signatory's capacity: solicitor

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under

eNOS ID No. | Full name: | Signature:

** s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

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Req:R350524 /Doc:CT 06519-182 CT /Rev:09-Aug-2012 /NSW LRS /Prt:30-Mar-2023 16:42 /Seq:1 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

202.

75351—2 4.51

Appn. No. 7377

Reference to Last Certificate

Vol. 5983 Fol. 171

New South Wales.

[CERTIFICATE OF TITLE.]

REGISTER BOOK
VOL. 6519 FOL. 182

S
GRY

CANCELLED W
ON ISSUE OF NEW FOLIO 7A/365458

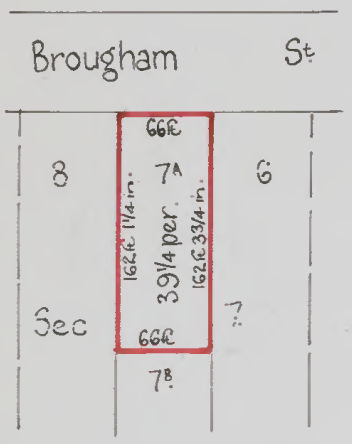
STANLEY EDWARD GALLARD of East Gosford, Taxi Driver, Transferee under Instrument of Transfer No.F659628 is now the proprietor of an Estate in Fee Simple,

subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in That piece of land situated in the Township of East Gosford in the Shire of Gosford Parish of Gosford, and County of Northumberland containing Thirty nine and one quarter perches or thereabouts as shown in the plan hereon and therein edged red being Lot 7A in plan annexed to Instrument of Transfer No.F69199 and being part of 500 acres (Portion 179 of Parish) originally granted to Samuel Peek by Crown Grant dated the 11th day of June 1841.

In witness whereof I have hereunto signed my name and affixed my Seal, this Sixteenth day of June, 1952

Signed in the presence of R.R. FitzGerald

J. Wells
Registrar-General.



Scale:- 100 feet to one inch.

CLUSICK

No. L119045 TRANSFER dated 17th June 1968
to Cusick Hotels Pty. Limited excluding addition to existing road shown on DP 529873 of the land within described

Entered 15th January 1969.
As to land in this register this deed is cancelled and new certificate issued Vol. Fol.
J. Watson
REGISTRAR GENERAL

No. L157067 MORTGAGE dated 14th June 1974
to Automobile & General Finance Company Limited

Entered 30th January 1969
Discharged P109337 20-12-1974
J. Watson
REGISTRAR GENERAL

F659628

NOTIFICATION REFERRED TO

Bristol Investments Pty. Limited is now be registered proprietor of the land within described.

See TRANSFER No. G695799 dated 27th March 1957

Entered 15th April 1957
J. Wells
REGISTRAR GENERAL

COMPUTER FOLIO NO FURTHER DEALINGS TO BE REGISTERED.

L119045 R Te
L157067M
C74/12/74
P109337DMS

Req:R350524 /Doc:CT 06519-182 CT /Rev:09-Aug-2012 /NSW LRS /Prt:30-Mar-2023 16:42 /Seq:2 of 2
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Req:R350654 /Doc:CT 05983-171 CT /Rev:08-Aug-2012 /NSW LRS /Prt:30-Mar-2023 16:57 /Seq:1 of 2
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

201

5237—1 4.49

Appn. No. 7377

Reference to Last Certificate

Vol. 940 Fol. 163

New South Wales.

[CERTIFICATE OF TITLE.]

Register Book.

Vol. 5983 Fol. 171

CANCELLED

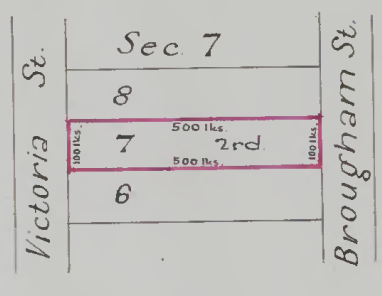
NORMAN FRANCIS GALLARD, of Gosford, Electrician, Transferee under Instrument of Transfer No. D974424 is now the proprietor of an Estate in Fee Simple subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in That piece of land situated in the Township of East Gosford in the Shire of Gosford Parish of Gosford, and County of Northumberland containing Two roods or thereabouts as shown in the pln hereon and therein edged red and also shown in plan lodged with Application No. 7377 being lot 7 of Section 7 and being part of 500 acres (Portion 179 of Parish) originally granted to Samuel Peek by Crown Grant dated the 11th day of June 1841.

In witness whereof I have hereunto signed my name and affixed my Seal, this Fifth day of July, 19 49.

Signed in the presence of G. McKern

J. Pells
Registrar-General.

REGISTRAR GENERAL NEW SOUTH WALES



D974424

Scale :- 3 Chains to one inch.

NOTIFICATION REFERRED TO

No. F69199 TRANSFER dated 8th August 1949
from the said Norman Francis Gallard to Kathleen Amelia Foott of Lot 7B.
of the land within described
Produced 31st August 1949 and entered 16th December 1949
at 12 o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. Fol.
J. Pells
REGISTRAR GENERAL.

No. F659628 TRANSFER dated 24th March 1952
from the said Norman Francis Gallard to Stanley Edward Gallard of East Gosford Dairy Farmer of the residue
of the land within described
Produced 6th May 1952 and entered 12th June 1952
at 12. o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 6519 Fol. 182
J. Pells
REGISTRAR GENERAL

F69199 part

F659628

Req:R350654 /Doc:CT 05983-171 CT /Rev:08-Aug-2012 /NSW LRS /Prt:30-Mar-2023 16:57 /Seq:2 of 2
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30/03/2023 05:04 PM

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Req:R350676 /Doc:CT 00940-163 CT /Rev:29-Jul-2012 /NSW LRS /Prt:30-Mar-2023 17:00 /Seq:1 of 4
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

(C.) New South Wales. [CERTIFICATE OF

CANCELLED W

00940163

Application No 7377

REGISTER BOOK,

VOL. 910 FOLIO 163

THIS TITLE IS THE REGISTER
DO NOT DELIVER OR DESTROY
RETURN TO LAND INFORMATION
SERVICES SECT., GROUND FLOOR, L.T.D.

George Stening of Woolomooloo Butcher is now the proprietor of an Estate in Fee Simple Subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to And also subject to such encumbrances liens and interests as are notified hereon in Those pieces of Land situated in the Town of East Gosford, Parish of Gosford and County of Northumberland containing One acre or thereabouts being Lots One and Two, One acre or thereabouts being Lots Four and Five and Two roods or thereabouts being Lot Ten of Section Six; Two roods each or thereabouts being Lots Five, Seven and Ten of Section Seven, Two roods each or thereabouts being Lots Three and Nine of Section Fourteen Two roods or thereabouts being Lots One and Two and One rood eighteen and three quarter perches or thereabouts being Lot Eight of Section Thirty seven as a plan lodged with Application and numbered 126. Which said pieces of land are shown on the plan hereon and thereon edged red being part of Five hundred acres dedicated in the Public Map of the said Parish deposited in the Office of the Surveyor-General originally granted to Samuel Peck by Crown Grant dated the Eleventh day of June one thousand eight hundred and forty one q.v.

In Witness whereof I have hereunto signed my name and affixed my seal this twelfth day of September One thousand eight hundred and eighty nine

Signed this twelfth day of September 1889 in the presence of C Mallon

By Register General

Dept Registrar General

Notification referred to.

No. B 152931 APPLICATION BY ~~TRANSMISSION~~
James Sydney Stening of Killara Salesman George Smith Stening of Sydney Merchant and John William Stening of Drummoyne Chemist are now the registered ~~joint~~ proprietors of the Land within described in pursuance of the above Application. Produced 21st November 1924 and entered 15th December 1924 at 12 o'clock ~~in the~~ noon.
REGISTRAR GENERAL

No. B 152932 CAVEAT dated 21st November 1924 by the Registrar General. Produced and entered 15th December 1924 at 12 o'clock ~~in the~~ noon.
REGISTRAR GENERAL

The within Caveat No. B 152932 is hereby withdrawn.
Dated 8th April 1925
REGISTRAR GENERAL

No. B 199454 TRANSFER dated 19th March 1925 from the said James Sydney Stening George Smith Stening and John William Stening to Ella Hope Chapman and Alfred Ingram Chapman of Gosford Storekeeper 2nd April 1925 ~~19th March 1925~~ of the land within described Produced and entered 8th April 1925 at 12 o'clock in the noon.
REGISTRAR GENERAL

No. C 152940 TRANSFER dated 9th May 1934 from the said Ella Hope Chapman to Alexander Mile of Thornleigh Gentleman of Lot 3 Sec 14 of the Land within described Produced 18th May 1934 and entered 5th June 1934 at 4 o'clock in the after noon. As to land in this transfer this Certificate is cancelled and new Certificate issued Vol. 4679 Fol. 225
REGISTRAR GENERAL

No. C 447479 TRANSFER dated 13th June 1936 from the said Ella Hope Chapman to Albert Edward Gollard of Lot 9 Sec 14 of the Land within described Produced 22nd June 1936 and entered 3rd July 1936 at 4 o'clock in the after noon. As to land in this transfer this Certificate is cancelled and new Certificate issued Vol. 4774 Fol. 53
REGISTRAR GENERAL

Req:R350676 /Doc:CT 00940-163 CT /Rev:29-Jul-2012 /NSW LRS /Prt:30-Mar-2023 17:00 /Seq:2 of 4
© Office of the Registrar-General /Src:DirectInfo /Ref:DI-E3019

No. C 603593 TRANSFER dated 23rd November 1937
from the said Ella Hope Chapman to Frederick Augustus Perry of Lot 2 Sec 6
of the land within described
Produced 3rd December 1937 and
entered 22nd February 1938
at 4 o'clock in the after noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 4913 Fol. 190
REGISTRAR GENERAL.

No. C 660916 TRANSFER dated 11th April 1938
from the said Ella Hope Chapman to Cyril Stanton Fenning of part (Lot 5 Sec 6)
of the land within described and
Produced 25th May 1938
entered 17th June 1938
at 12 o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 4945 Fol. 88
REGISTRAR GENERAL.

No. D388155 TRANSFER dated 29th May 1945
from the said Ella Hope Chapman to George Edward Lyell of part 1&2 Sec 6
of the land within described
Produced 29th June 1945 and entered 1st August 1945
at 12 o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 5516 Fol. 73
J. Wells
REGISTRAR GENERAL.

No. D 394930 TRANSFER dated 3rd may 1945
from the said Ella Hope Chapman to Mary Jane Sims of part being Lot 4 Sec 6.
of the land within described
Produced 19th July 1945 and entered 11th September 1945
at 12 o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 5530 Fol. 156.
J. Wells
REGISTRAR GENERAL.

No. D 753338 TRANSFER dated 3rd November 1947
from the said Ella Hope Chapman to Leslie Trevor Sykes of Lot 5 Sec 6
of the land within described
Produced 12th November 1947 and entered 16th December 1947
at 12 o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 5793 Fol. 84
J. Wells
REGISTRAR GENERAL.

No. D 974424 TRANSFER dated 23rd February 1949
from the said Ella Hope Chapman to Norman Francis Gallard of Lot 1 Sec 7
of the land within described
Produced 4th March 1949 and entered 21st March 1949
at 12 o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 5983 Fol. 171
J. Wells
REGISTRAR GENERAL.

No. F 449591 TRANSFER dated 19th July 1949
from the said Ella Chapman to Lilian Ivard Gregory of part Lot 1 of Section 6
of the land within described
Produced 26th July 1949 and entered 17th November 1949
at 12 o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 6095 Fol. 207
REGISTRAR GENERAL.

No. F 253983 TRANSFER dated 9th June 1950
from the said Ella Hope Chapman to Sidney Thomas Ley of Lot 3 Sec. 27
of the land within described
Produced 30th June 1950 and entered 1st August 1950
at 12 o'clock in the noon.
As to land in this transfer this Certificate is cancelled and new Certificate issued
Vol. 6223 Fol. 139
J. Wells
REGISTRAR GENERAL.

No. F 410843 NOTICE OF RESUMPTION
The Housing Commission of New South Wales
is the proprietor of part being Lot 16 Sec 6. of the land within described (including mines and deposits as provided by Section 141 of the Public Works Act 1912) freed from all other interests on the 9th March 1951, and entered
Produced 13th August 1951, at 12
o'clock in the noon.
As to land in this resumption this Certificate is cancelled and new Certificate issued
Vol. 6613 Fol. 3
J. Wells
Registrar General.

Alfred Ingram Chapman, Samuel Edward Lees Stening, John Russell Stening and Bruce Philip Smit Company limited as joint tenants are now the registered proprietors of the land within described.
See Section 94 Application No. G810040
Entered 5th November 1957.
J. Wells
REGISTRAR GENERAL.

No. G810041 CAVEAT by the Registrar General
Entered 5th November 1957.
J. Wells
REGISTRAR GENERAL.

The within Caveat No. G810041 is hereby withdrawn
Dated 23rd September 1958
Jan Watson
REGISTRAR GENERAL.

Req:R350676 /Doc:CT 00940-163 CT /Rev:29-Jul-2012 /NSW LRS /Prt:30-Mar-2023 17:00 /Seq:3 of 4
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940-163

Wells St

Major Smyth

W Forbes

14

W Forbes

Rev J Saunders

Althorp St

Scale 3 Chains to an Inch

St

St

Adelaide St

E Campbell

J Cameron

S Lester

T Mort

H Moon

6

7

R Thompson

R Thompson

Victoria

Brougham

St

George St

Melbourne

St

Caroline St

Webb St

Mrs Davy

C Rattray

Res for Court House

Wharf 37

EAST COSFORD BAY

Req:R350676 /Doc:CT 00940-163 CT /Rev:29-Jul-2012 /NSW LRS /Prt:30-Mar-2023 17:00 /Seq:4 of 4
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201-
690

W.G. 902476 TRANSFER dated 3rd December 1957.
to Hilton Joseph Moore of Lot 5 Sec 7

of the land within described.

Entered 23rd September 1958.
As to land in title to which this deed is appended and not yet issued Vol. 7639 Fol. 9

REGISTRAR GENERAL

FOLIO CANCELLED.
NO FURTHER DEALINGS TO BE REGISTERED.

LAND REGISTRY SERVICES

Direct Info
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Title Search

30/03/2023 01:44 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 15/1061216

SEARCH DATE	TIME	EDITION NO	DATE
30/3/2023	1:43 PM	11	8/10/2021

LAND

LOT 15 IN DEPOSITED PLAN 1061216
AT EAST GOSFORD
LOCAL GOVERNMENT AREA CENTRAL COAST
PARISH OF GOSFORD COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1061216

FIRST SCHEDULE

THE ELANORA HOTEL NOMINEES PTY LTD (T AP364406)

SECOND SCHEDULE (5 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 DP1016073 RIGHT OF WAY 3 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
3 DP1016073 RIGHT OF WAY 2 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 AJ363523 LEASE TO ELVISTI PTY LIMITED OF SHOP 1, 41-45 VICTORIA STREET, EAST GOSFORD. EXPIRES: 30/9/2017. OPTION OF RENEWAL: THREE YEARS.
5 AP364407 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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LAND REGISTRY SERVICES

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DI-E3019 PRINTED ON 30/3/2023

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register.
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Historical Search

30/03/2023 01:45 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 1:43PM

FOLIO: 15/1061216

First Title(s): OLD SYSTEM

Prior Title(s): 1/1016073 5/1016073

Recorded	Number	Type of Instrument	C.T. Issue
14/11/2003	DP1061216	DEPOSITED PLAN	FOLIO CREATED EDITION 1
30/8/2004	AA919425	MORTGAGE	EDITION 2
13/9/2007	AD409839	LEASE	EDITION 3
9/1/2009	AE435447	LEASE	EDITION 4
23/11/2009	AF137814	LEASE	EDITION 5
2/12/2011	AG661100	LEASE	EDITION 6
17/7/2013	AH881881	CAVEAT	
30/3/2015	AJ363523	LEASE	EDITION 7
9/9/2018	AN695392	DEPARTMENTAL DEALING	EDITION 8 CORD ISSUED
16/4/2019	AP177743	LEASE	EDITION 9 CORD ISSUED
1/7/2019	AP364405	DISCHARGE OF MORTGAGE	
1/7/2019	AP364406	TRANSFER	
1/7/2019	AP364407	MORTGAGE	EDITION 10 CORD ISSUED
8/10/2021	AR496262	SURRENDER OF LEASE	EDITION 11 CORD ISSUED

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*** END OF SEARCH ***

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Historical Search

30/03/2023 05:23 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 5:22PM

FOLIO: 1/1016073

First Title(s): OLD SYSTEM

Prior Title(s): A/161121 10/653037 8/658303

Recorded	Number	Type of Instrument	C.T. Issue
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CREATED EDITION 1
12/2/2003	9370830	LEASE	EDITION 2
14/11/2003	DP1061216	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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30/03/2023 05:24 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 5:22PM

FOLIO: 5/1016073

First Title(s): OLD SYSTEM
Prior Title(s): 8/658303

Recorded	Number	Type of Instrument	C.T. Issue
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CREATED EDITION 1
16/8/2000	7024524	LEASE	EDITION 2
4/9/2000	7064540	DEPARTMENTAL DEALING	EDITION 3
14/11/2003	DP1061216	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 5:24PM

FOLIO: A/161121

First Title(s): OLD SYSTEM
Prior Title(s): CA63410

Recorded	Number	Type of Instrument	C.T. Issue
31/10/1994	DP161121	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
20/1/1995	CA63410	CONVERSION ACTION	FOLIO CREATED EDITION 1
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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30/03/2023 05:26 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 5:24PM

FOLIO: 10/653037

First Title(s): OLD SYSTEM
Prior Title(s): VOL 10965 FOL 204

Recorded	Number	Type of Instrument	C.T. Issue
3/3/1993		CONVERTED TO COMPUTER FOLIO CT NOT ISSUED	FOLIO CREATED
29/4/1994		AMENDMENT: TITLE DIAGRAM	
14/1/1997	2758463	MORTGAGE	EDITION 1
10/9/1997	3400264	LEASE	EDITION 2
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Historical Search
30/03/2023 05:26 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

30/3/2023 5:25PM

FOLIO: 8/658303

First Title(s): OLD SYSTEM
Prior Title(s): VOL 15236 FOL 14

Recorded	Number	Type of Instrument	C.T. Issue
4/7/1995		CONVERTED TO COMPUTER FOLIO CT NOT ISSUED	FOLIO CREATED
22/4/1997	3003249	DEPARTMENTAL DEALING	
10/9/1997	3400263	SURRENDER OF LEASE	EDITION 1
25/11/1998	5419897	LEASE	EDITION 2
29/11/1999	6379283	SURRENDER OF LEASE	EDITION 3
7/8/2000	DP1016073	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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Document Inquiry
30/03/2023 05:28 PM

Client Reference: DI-E3019

NEW SOUTH WALES LAND REGISTRY SERVICES - DOCUMENT INQUIRY

Document Number: CA63410

Document Type: CONVERSION ACTION

Document Status: ACTION COMPLETE

Document Status Date: 15/5/2000

Affected Titles: BK 2894 NO 278

Titles Created: A/161121

*** END OF SEARCH ***

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Req:R350884 /Doc:CT 10965-204 CT /Rev:16-Dec-2010 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 17:28 /Seq:1 of 2
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CANCELLED

10965204

[redacted]

RTIFICATE OF TITLE

NEW SOUTH WALES

OPERTY ACT, 1900, as amended.

SEE AUTO FOL.- Vol. 10965 Fol. 204

Appln. No.7377

Prior Title Vol.4945 Fol. 28

AS Edition issued 16-1-1969

LI19045

(Page 1) Vol. 10965 Fol. 204

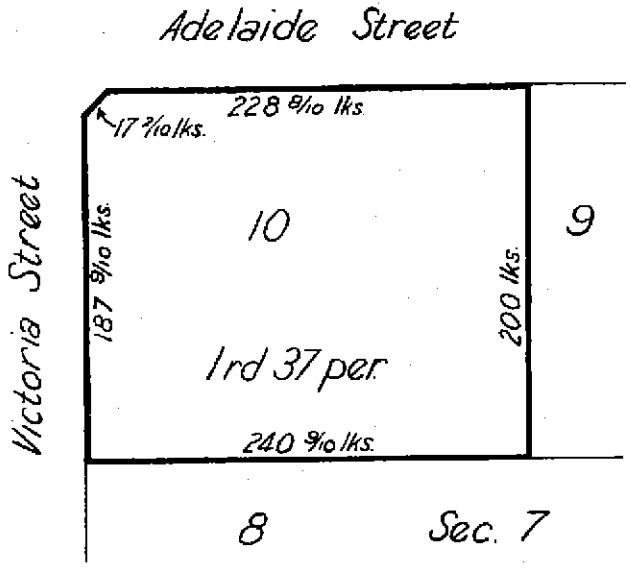
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness L. Bollivier

Registrar General.

REGISTRAR GENERAL NEW SOUTH WALES

PLAN SHOWING LOCATION OF LAND



THE LAND WITHIN DESCRIBED IS NOW LOT 10 IN DP653037

LI19045 cy

Scale: 1 chain to one inch

ESTATE AND LAND REFERRED

Estate in Fee Simple in part of Lot 10 of Section 7 in plan lodged with Primary Application No.7377 (Filed as F.P.57377) in Shire of Gosford Parish of Gosford and County of Northumberland being part of Portion 179 granted to Samuel Peek on 11-6-1841.

FIRST SCHEDULE

CUSICK HOTELS PTY. LIMITED.

SECOND SCHEDULE

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

Registrar General

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

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

PT 18

RG 2/82 NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

17 V.C.N. Blight, Government Printer

Vol. 10965 Fol 204 -

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
CANCELLED SEE AUTO FOLIO					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
~~Encumbrance~~	~~U119046~~	~~17.6.1968~~	~~to Tooth & Co. Limited~~	30.1.1969	Jamieson	Discharged	V445314	Jamieson
~~Encumbrance~~	~~U119047~~	~~17.6.1968~~	~~to Tooth & Co. Limited~~	30.1.1969	Jamieson	Discharged	V445315	Jamieson
~~Mortgage~~	~~U119048~~	~~17.6.1968~~	~~to Tooth & Co. Limited~~	30.1.1969	Jamieson	Discharged	V445316	Jamieson
~~Mortgage~~	~~U157067~~	~~14.6.1968~~	~~to Automobile & General Finance Company Limited~~	30.1.1969	Jamieson	Discharged	P109337	Jamieson

(Page 2 of 2 pages)

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

U119046
U119047
U157067
P109337 DA
8 VM
(U119048)
V445314 DA
15/
6 DIS

Req:R350884 /Doc:CT 10965-204 CT /Rev:16-Dec-2010 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 17:28 /Seq:2 of 2
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LAND REGISTRY SERVICES

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30/03/2023 05:34 PM

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Req:R350889 /Doc:CT 15236-014 CT /Rev:17-Dec-2010 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 17:28 /Seq:1 of 2
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CERTIFICATE OF TITLE

15236014

NEW SOUTH WALES — REAL PROPERTY ACT, 1900

Vol. 15236 Fol. 14

First Title Old System

Prior Title Vol. 5162 Fol. 152

CANCELLED EDITION ISSUED 29 6 1984

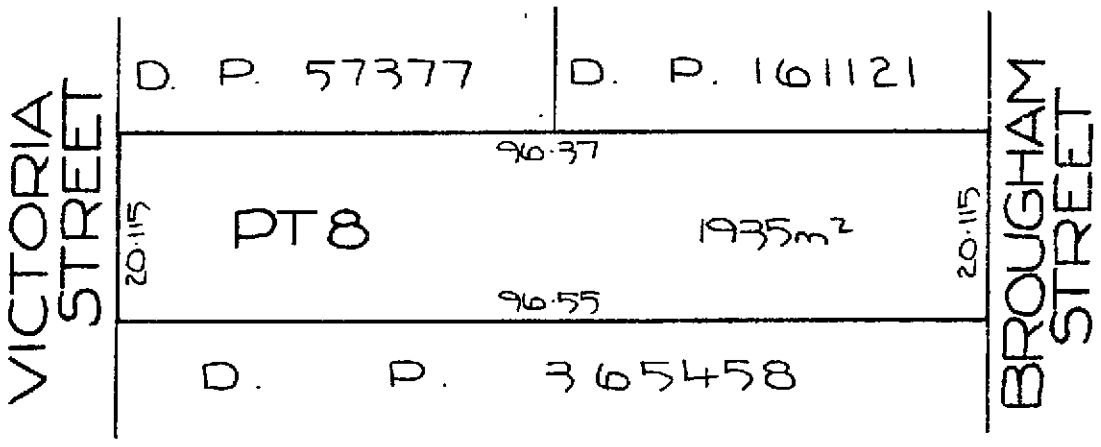
SEE AUTO FOLIO

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

Registrar General.

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



V65715

THE LAND WITHIN DESCRIBED IS LOT 8 IN DP658303

LAND REFERRED TO

Part of Lot 8 in Deposited Plan 79991 shown in the plan hereon at East Gosford in the City of Gosford Parish of Gosford County of Northumberland.

FIRST SCHEDULE

CUSICK HOTELS PTY. LIMITED.

SECOND SCHEDULE

1. Reservations and conditions in the Crown Grant.
2. ~~V65715 Lease to Totalizator Agency Board of shop premises known as 43 Victoria Street, East Gosford (together with option of renewal). Expires 31-12-1988.~~ Y887737 13-3-1990

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON (Page 1) Vol. 15236 Fol. 14

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

Req:R350889 /Doc:CT 15236-014 CT /Rev:17-Dec-2010 /NSW LRS /Pgs:ALL /Prt:30-Mar-2023 17:28 /Seq:2 of 2
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Vol 15236 Fol 14

99346D 8.81 D. West, Government Printer

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR | Registrar General

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

PARTICULARS	Registrar General	CANCELLATION
~~Y887737 Lease to Totalizator Agency Board of shop premises 43 Victoria St, East Gosford. Expires 31-12-1994. Option of renewal for 5 years. Registered 13-3-1990~~		U993882 10-2-1995
U993882 Lease to Totalizator Agency Board of shop known as 43 Victoria Street, East Gosford. Registered 10-2-1995 EXPIRES 31.12.1999		

NOTATIONS AND UNREGISTERED DEALINGS

Y887737 L
U993882 L (R)

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

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6

New South Wales
$00.75
Stamp Duty

CONVEYANCE NO. 278 BOOK 2894

$6-00
31 JUL 1968

THIS DEED made this 17th day of June One thousand nine hundred and sixty-eight, BETWEEN BRISTOL INVESTMENTS PTY. LIMITED a Company duly incorporated and having its registered office at 60 Hunter Street, Sydney in the State of New South Wales, (hereinafter called "the Vendor") of the One Part AND CUSICK HOTELS PTY. LIMITED a Company duly incorporated and having its registered office at 107 Elizabeth Street, Sydney in the said State, (hereinafter called "the Purchaser") of the Other Part WHEREAS the Vendor has agreed to sell and the purchaser has agreed to purchase the land referred to in the Schedule hereto together with the land comprised in Certificates of Title Volume 4945 Folio 28 Volume 5162 Folio 152 and Volume 6519 Folio 182 for the sum of three hundred and thirty six thousand Dollars ($336,000.00) NOW THIS DEED WITNESSETH that in consideration of the sum of Three hundred and thirty six thousand Dollars ($336,000.00) being the same consideration referred to in Memorandum of Transfer of even date and made between the parties hereto, paid by the Purchaser to the Vendor (the receipt whereof is hereby acknowledged) the said Vendor as beneficial owner doth hereby convey unto the Purchaser in fee simple all those lands comprised in the Schedule hereunder.

IN WITNESS WHEREOF the said parties hereto have hereunto set their hands and affixed their seals the day and year first hereinbefore written.

THE SCHEDULE.

FIRSTLY: ALL THAT piece or parcel of land containing by admeasurements 19¾ perches a little more or less situate in the town of East Gosford Parish of Gosford County of Northumberland being part of Lot B of a subdivision of lot 9 Section 7 commencing at the intersection of the South Eastern side of Adelaide Street with the South Western side of Brougham Street and bounded thence on the North East by part of the South Western side of Brougham Street bearing 135 degrees 7 minutes 65 feet 10 inches thence on the South East by a line bearing 225 degrees 3 minutes 82 feet 6 inches thence on the South West by part of the North Eastern boundary of Lot A bearing 315 degrees 7 minutes 65 feet 10 inches to the South Eastern side of Adelaide Street aforesaid thence on the North West by that side of that Street bearing 45 degrees 3 minutes to the point of commencement, and being the land comprised in Conveyance Number 636 Book 2408.

SECONDLY: ALL THAT piece or parcel of land containing by admeasurements 39¾ perches a little more or less situate in the town of East Gosford County of Northumberland and being lot A of a subdivision of lot 9 of Section 7 commencing at a point on the south eastern side of Adelaide Street distant 45 degrees 3 minutes 158 feet from its intersection with the north eastern building line of Victoria Street and bounded thence on the south west by the north eastern boundary of Lot 10 bearing 135 degrees 7 minutes 131 feet 7¾ inches thence on the south east by part of the north Western boundary of lot 8 bearing 45 degrees 5 minutes 82 feet 6 inches thence on the north east by the south western boundary of lot B bearing 315 degrees 7 minutes 131 feet 8¼ inches to the south eastern

I 2

C

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side of Adelaide Street aforesaid thence on the north west by part of that side of that street bearing 225 degrees 3 minutes 82 feet 6 inches to the point of commencement, and being the land comprised in Conveyance No. 84 Book 2412.

THE COMMON SEAL of BRISTOL INVESTMENTS PTY. LIMITED was hereunto affixed by Order of the Board of Directors and in the presence of:-

F. Hoffman
Secretary

Noel Galland
Director

Bristol Investments Pty. Limited
Common Seal

JO-ANNE ELIZABETH CAMPBELL Clerk to Messrs. Smithers Warren & Lyons of 210 Pitt Street Sydney Solicitors being duly sworn makes oath and says as follows:- The writing contained above has been compared by me with the original Conveyance and is a true copy thereof.

SWORN by the Deponent this 31st day of July 1968 - Before me:-

Jo-Anne E. Campbell.

A Justice of the Peace.

RECEIVED into the Registration of Deeds Office at Sydney this 31st day of July one thousand nine hundred and sixty-eight at 27 minutes past 11 o'clock in the fore noon from the said Jo-Anne Elizabeth Campbell.

Deputy Registrar.

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AP364406K

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(B) **LODGED BY**

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(C) **TRANSFEROR** CUSICK HOTELS PTY LIMITED (ACN 000 628 035)

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 6,000,000.00 and as regards

(E) **ESTATE** the abovementioned land transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** THE ELANORA HOTEL NOMINEES PTY LTD (ACN 633 140 137)

(I) **TENANCY:**

DATE 25.6.19

(J) Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Company: CUSICK HOTELS PTY LIMITED (ACN 000 628 035)
Authority: section 127 of the Corporations Act 2001

Signature of authorised person:
Name of authorised person: Damien John Cusick
Office held: Director

Signature of authorised person: M.G.Cusick
Name of authorised person: MICHAEL ANTON CUSICK
Office held: DIRECTOR

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name: ANDREW WENNERBOM
Signatory's capacity: solicitor

(K) The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under

eNOS ID No. | Full name: | Signature:

** s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.*

APPENDIX N: STATISTICAL ANALYSIS

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	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets											
2												
3	User Selected Options											
4	Date/Time of Computation	3/05/2023 2:15:27 PM										
5	From File	WorkSheet.xls										
6	Full Precision	OFF										
7	Confidence Coefficient	95%										
8	Number of Bootstrap Operations	2000										
9												
10												
11	C0											
12												
13	General Statistics											
14	Total Number of Observations					19		Number of Distinct Observations				18
15								Number of Missing Observations				14
16	Minimum					2		Mean				58.15
17	Maximum					410		Median				13
18	SD					99.37		Std. Error of Mean				22.8
19	Coefficient of Variation					1.709		Skewness				2.85
20												
21	Normal GOF Test											
22	Shapiro Wilk Test Statistic					0.597		Shapiro Wilk GOF Test				
23	5% Shapiro Wilk Critical Value					0.901		Data Not Normal at 5% Significance Level				
24	Lilliefors Test Statistic					0.286		Lilliefors GOF Test				
25	5% Lilliefors Critical Value					0.203		Data Not Normal at 5% Significance Level				
26	Data Not Normal at 5% Significance Level											
27												
28	Assuming Normal Distribution											
29	95% Normal UCL							95% UCLs (Adjusted for Skewness)				
30	95% Student's-t UCL					97.69		95% Adjusted-CLT UCL (Chen-1995)				111.6
31								95% Modified-t UCL (Johnson-1978)				100.2
32												
33	Gamma GOF Test											
34	A-D Test Statistic					0.94		Anderson-Darling Gamma GOF Test				
35	5% A-D Critical Value					0.792		Data Not Gamma Distributed at 5% Significance Level				
36	K-S Test Statistic					0.21		Kolmogrov-Smirnoff Gamma GOF Test				
37	5% K-S Critical Value					0.208		Data Not Gamma Distributed at 5% Significance Level				
38	Data Not Gamma Distributed at 5% Significance Level											
39												
40	Gamma Statistics											
41	k hat (MLE)					0.608		k star (bias corrected MLE)				0.547
42	Theta hat (MLE)					95.72		Theta star (bias corrected MLE)				106.4
43	nu hat (MLE)					23.09		nu star (bias corrected)				20.77
44	MLE Mean (bias corrected)					58.15		MLE Sd (bias corrected)				78.65
45								Approximate Chi Square Value (0.05)				11.42
46	Adjusted Level of Significance					0.0369		Adjusted Chi Square Value				10.82
47												
48	Assuming Gamma Distribution											
49	95% Approximate Gamma UCL (use when n>=50))					105.8		95% Adjusted Gamma UCL (use when n<50)				111.7
50												
51	Lognormal GOF Test											
52	Shapiro Wilk Test Statistic					0.962		Shapiro Wilk Lognormal GOF Test				
53	5% Shapiro Wilk Critical Value					0.901		Data appear Lognormal at 5% Significance Level				

54					Lilliefors Test Statistic	0.158	Lilliefors Lognormal GOF Test					
55					5% Lilliefors Critical Value	0.203	Data appear Lognormal at 5% Significance Level					
56	Data appear Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59					Minimum of Logged Data	0.693				Mean of logged Data	3.048	
60					Maximum of Logged Data	6.016				SD of logged Data	1.438	
61												
62	Assuming Lognormal Distribution											
63					95% H-UCL	180.4				90% Chebyshev (MVUE) UCL	116.5	
64					95% Chebyshev (MVUE) UCL	144.9				97.5% Chebyshev (MVUE) UCL	184.3	
65					99% Chebyshev (MVUE) UCL	261.8						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data appear to follow a Discernible Distribution at 5% Significance Level											
69												
70	Nonparametric Distribution Free UCLs											
71					95% CLT UCL	95.65				95% Jackknife UCL	97.69	
72					95% Standard Bootstrap UCL	94.81				95% Bootstrap-t UCL	141.4	
73					95% Hall's Bootstrap UCL	210.7				95% Percentile Bootstrap UCL	97.55	
74					95% BCA Bootstrap UCL	116.2						
75					90% Chebyshev(Mean, Sd) UCL	126.5				95% Chebyshev(Mean, Sd) UCL	157.5	
76					97.5% Chebyshev(Mean, Sd) UCL	200.5				99% Chebyshev(Mean, Sd) UCL	285	
77												
78	Suggested UCL to Use											
79					95% Chebyshev (Mean, Sd) UCL	157.5						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												

APPENDIX O: HAZARDOUS GROUND GAS ASSESSMENT

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HAZARDOUS GROUND GAS MONITORING

29-31 and 41-45 Victoria Street, 27 Adelaide Street,
16 & 20 Brougham Street, East Gosford NSW

Prepared for
Bonython Elanora Pty Ltd

Date

May 2023

DOCUMENT CONTROL REGISTER

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Prepared for	Bonython Elanora Pty Ltd

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Authorised		Benjamin Buckley- Director B. Env Sc., BSc (Forensics)	24/05/2023

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ABBREVIATIONS

AIP	*Australian Institute of Petroleum Ltd*	**QA/QC**	*Quality Assurance, Quality Control*
ANZECC	*Australian and New Zealand Environment and Conservation Council*	**RAC**	*Remediation Acceptance Criteria*
AST	*Aboveground Storage Tank*	**RAP**	*Remediation Action Plan*
BGL	*Below Ground Level*	**RPD**	*Relative Percentage Difference*
BTEX	*Benzene, Toluene, Ethyl benzene and Xylene*	**SAC**	*Site Assessment Criteria*
COC	*Chain of Custody*	**SVC**	*Site Validation Criteria*
DA	*Development Approval*	**TCLP**	*Toxicity Characteristics Leaching Procedure*
DP	*Deposited Plan*	**TPH**	*Total Petroleum Hydrocarbons*
DQOs	*Data Quality Objectives*	**UCL**	*Upper Confidence Limit*
EPA	*Environment Protection Authority*	**UST**	*Underground Storage Tank*
ESA	*Environmental Site Assessment*	**VHC**	*Volatile Halogenated Compounds*
HIL	*Health-Based Soil Investigation Level*	**VOC**	*Volatile Organic Compounds*
LGA	*Local Government Area*	**DPI**	Department of Primary Industries
NEHF	*National Environmental Health Forum*	**HGGM**	Hazardous Ground Gas Monitoring
NEPC	*National Environmental Protection Council*	**NMOC**	Non-methane organic compounds
NHMRC	*National Health and Medical Research Council*	**LEL**	Lower explosive limit
OCP	*Organochlorine Pesticides*	**UEL**	Upper explosive limit
OPP	*Organophosphate Pesticides*		
PAH	*Polycyclic Aromatic Hydrocarbon*		
PCB	*Polychlorinated Biphenyl*		
PID	*Photo Ionisation Detector*		
PQL	*Practical Quantitation Limit*		

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EXECUTIVE SUMMARY

Foundation Earth Sciences was appointed by Bonython Elanora Pty Ltd to undertake Hazardous Ground Gas Monitoring for the property situated at 29-31 and 41-45 Victoria Street, 27 Adelaide Street, 16 & 20 Brougham Street, East Gosford NSW ("the site").

The site is currently occupied by several commercial entities. Lot 15 in DP1061216 is occupied by the Elanora Hotel, which is a licenced pub, restaurant, drive through bottle shop and large sealed driveway/carparking area. Lots 2, 3 & 4 in DP1016073 are occupied by a Motel, with several guest rooms and a grassed area. Lot 7 in DP658304 is occupied by a commercial dwelling, with several storefronts along Victoria Street and an external hand carwash to the rear of the Lot. Lot 7A in DP365458 is a sealed carparking area.

It is proposed that the motel currently on the site will be cleared and expanded along Brougham Street. The proposed development plans indicate that the new Elanora Hotel will run through Lots 3 & 4 in DP 1016073, Lot 15 in DP1061216 and Lot 7A in DP365458. The Hotel will be 3 storeys high, with each level having 15 rooms. The carparking area will be extended between the hotel and the Elanora Hotel pub, and a carparking area will be located underneath and extended outdoor eating eat. The current hand carwash dwelling will be removed to allow for more carparking spaces, which will be landscaped. The commercial dwelling along Victoria Street in Lot 7 in DP658304 will be refurbished into a bottle shop.

The monitoring was undertaken in April to May 2023 and the data collected from the seven rounds of spot monitoring indicates the following;

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- The maximum concentration of methane recorded was 2.3% v/v from BH1 /GW1 during round six on 10th May, 2023 & round seven on the 12th May, 2023;
- The maximum concentration of carbon dioxide was recorded at 11.3% v/v from BH1 /GW1 during round five on 3RD May, 2023;
- The minimum concentration of oxygen recorded was 0% from BH1 /GW1 during round six on 10th May, 2023 & round seven on the 12th May, 2023;
- Carbon monoxide was detected at maximum concentration of 431ppm in BH3/GW3 during round one on the 19th April 2023;
- The maximum PID reading was recorded at 10.8ppm in BH3/GW3 in round one dated 19th April 2023;
- The maximum (LEL%) reading was recorded at 28% during round seven in BH1 / GW1 dated 12th May 2023;

Utilising the above rounds of data, the following Wilson and Card method for the characteristic gas situation (CS) has been calculated to be 3 (moderate risk). As per NSW EPA 2019 “Assessment and Management of Hazardous Ground Gases”, appropriate gas protection measures for the site are required.

Based on the Wilson and Card method the characteristic gas situation (CS) determined is 3 (moderate risk). As per NSW EPA 2012 “Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases”, appropriate gas protection measures for the site are required.

Utilising the site derived CS, the gas protection guidance value of 3 has been adopted from the NSW EPA 2012 “Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases”.

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Based on the spot monitoring results to date, the site can be made ***suitable*** for the proposed development, subject to the following:

- Completion of a longer-term ground gas monitoring program including continuous landfill gas monitoring and additional landfill gas monitoring wells to provide a more detailed assessment of the risk posed to the proposed development.

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1.0 INTRODUCTION

Foundation Earth Sciences was appointed by Bonython Elanora Pty Ltd to undertake Hazardous Ground Gas Monitoring for the property situated at 29-31 and 41-45 Victoria Street, 27 Adelaide Street, 16 & 20 Brougham Street, East Gosford NSW ("the site").

Refer to **Figure 1** – Hazardous Ground Gas Monitoring Site Plan.

Previous environmental assessments have been undertaken for the site and generally concluded that the site could be made to be suitable for the proposed land use, in accordance with the appropriate Remediation Action Plan. This was subsequently prepared for the site and described the methodology and the protocols to be followed to undertake appropriate remediation of the site and make it suitable for the proposed land use.

This report is addressed to Bonython Elanora Pty Ltd under legal privilege. In the event of the disclosure of the report (or any part thereof) to any other party, Foundation Earth Sciences will accept no responsibility to any other person to whom it is disclosed, unless this has been agreed to in writing by Foundation Earth Sciences.

2.0 OBJECTIVE

The objectives of the HGGM are listed below:

- Undertake Hazardous Ground Gas Monitoring within the site and prepare a report.

3.0 SCOPE OF WORKS

The scope of works for this Hazardous Ground Gas Monitoring (HGGM) included:

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- Spot Monitoring via the monitoring of three (3) **existing** gas wells via gas caps.
- Undertake seven rounds of HGGM at the three groundwater wells with attached gas caps.
- Record measurements of ground gas concentrations and gas flow rates at the three-monitoring location using a landfill gas meter (spot measurements);
- Recommendations and final conclusions drawn from interpretation of the results.

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4.0 SITE IDENTIFICATION AND SITE HISTORY REVIEW

4.1.1 Site identification

The site is identified as follows:

Table 1: Site Identification Review

Site Identifier	Site Details	
Site Location	29-31 and 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham St, East Gosford NSW	
Lot/DP	Lot 7 in DP658304 Lot 15 in DP1061216 Lot 2, 3 & 4 in DP1016073 Lot 7A in DP365458	
Site Coordinates #	N Corner: Latitude -33.438046, Longitude: 151.355208	
Parish	Gosford	
County	Northumberland	
Site Area	Approximately 7686m^2	
Local Government Area (LGA)	Central Coast	
Zoning##	B2 – Local Centre	
Surrounding Land Uses	*North*	Adelaide St, Commercial then Residential
	South	Residential then Victoria St
	East	Brougham St then Residential
	West	Adelaide St then Commercial and Residential

Refer to **Figure 1** – Hazardous Ground Gas Monitoring Site Plan.

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4.1.2 Description

The site is rectangular in shape and is currently occupied by several commercial entities. Lot 15 in DP1061216 is occupied by the Elanora Hotel, which is a licenced pub, restaurant, drive through bottle shop and large sealed driveway/carparking area. Lots 2, 3 & 4 in DP1016073 are occupied by a Motel, with several guest rooms and a grassed area. Lot 7 in DP658304 is occupied by a commercial dwelling, with several storefronts along Victoria Street and an external hand carwash to the rear of the Lot. Lot 7A in DP365458 is a sealed carparking area. At the time of the most recent FES site visit the following observations were made:

- Stormwater and sewage were connected to the local utilities;
- No electrical transformers were identified within the site.

4.1.3 Underground Services

Dial Before You Dig' plans were requested and reviewed for the Site. Plans were provided by Ausgrid, Central Coast Council, Jemena Gas North, NBN Co NSW/ACT, Optus and/or Uecomm NSW, Telstra NSW Central & Transport NSW. The plans provided by Ausgrid, Central Coast Council, Jemena Gas North, NBN Co and Telstra indicated the presence of major underground services or utility easements within the site.

The plans provided by Ausgrid showed cables running along the northern boundary of the site, as well as a substation on Adelaide Street. Cables were also seen to be entering the site from Victoria Street. Plans provided by the Central Coast Council demonstrated a sewage line running through the centre of the site, as well as a drainage pit along the southern boundary and a water line along the norther boundary. The Jemena Gas plans for the site demonstrated multiple points where gas lines entered the site along Victoria

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Street. NBN Co plans further indicated multiple points around the site boundary where mains entered the site, mainly from the surrounding streets. Plans provided by Telstra demonstrated along Victoria, Adelaide and Brougham Street, multiple points where mains entered the site.

It is noted that the associated underground services are considered as a potential preferential pathway.

Refer to **Appendix E** – DBYD Plans.

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4.1.4 Environmental Setting Information

Table 2: Environmental Setting Information

Site Information	Descriptions
Sensitive Receivers	The nearest sensitive human receptors are the current and future users of the site, construction workers during the site redevelopment and the general public. The nearest downgradient watercourse is Erina Creek located approximate 380m to the east of the site.
Soil Landscape *Review of NSW Soil and Land Information website ESPADE.*	The Soil Landscape Map viewed on NSW ESPADE indicates that the site is Erina area. The soil is undulating to rolling rises and low hills on the Terrigal Formation. Local relief <60m; slope gradients <25%. Rounded narrow crests with moderately inclined slopes. Extensively cleared tall open-forest with open-heathland in exposed coastal areas.
Topography	Undulating to rolling rises and low hills with local relief <60m and slopes <25%. Ridges and crests are moderately broad (100-300m) and valleys moderately narrow (300-800m). Slopes are gently to moderately inclined. Rock outcrop is rarely present. This landscape also occurs as footsteps and gently inclined crests and ridges closely associated with the steep hills of the Watagan (wn) soil landscape. Based on the site inspection, it was determined that the site was slightly sloping to the North East at approximately 2-4°
Geological Profile	The 1:100,000 Geological Map of Gosford – Lake Macquarie, published by NSW Government in 1998, indicates that the site is underlain by Lithic-quartz to quartz sandstone, siltstone, minor sedimentary breccia, claystone and conglomerate
Presence of Acid Sulphate Soils *Review of NSW Department of Land & Water Conservation (DLWC) Acid*	A review of the "Gosford" map indicated that the site is located in "No Known Occurrence" area of acid sulphate soil material within the soil profile. However, the site is located close to a "High Probability" area. The Central Coast Council Online Mapping website ("Environmental Layers", Online Mapping (nsw.gov.au)) indicated the site was located in an area with low to no known occurrences of Acid Sulphate Soils. However, the map

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Site Information	Descriptions
Sulphate Soil Risk Maps (Edition Two, December 1997, Scale 1:250,000.	demonstrated the site is in close proximity to an area of "Disturbed Terrain" and "High probability of occurrence".
Nearest Active Service Station (Google Maps Search)	1.9km to the east of the site
Local Meteorology (Bureau of Meteorology BOM website).	The monthly rainfall of the local surrounding area is represented by the data collected from the BOM rainfall gauge located in Gosford (AWS NSW), which is located approximately 1.2km from Site. The records indicate that the monthly rainfall for the month of April (date of fieldwork) was 225.2mm in 2023.

4.1.5 Summary of Site History

Examination of the previous report, historical titles, aerial photographs and other searches for the site has revealed the following information:

In summary:

- The land titles indicated from 1925 to 1982, the site was owned by as number of private individuals. From 1982 to the present time, the site has been owned by a number of commercial entities.
- The aerial photographs indicate that the site has been used as a Commercial entity since the mid-1960s. At this point in time, the Elanora Hotel (pub) and associated motel were developed on the site and remained unchanged until 2005, when the pub was redeveloped. A sealed driveway and carparking area were developed in the mid-1970, and appeared to have been redeveloped in the 90s. Sometime prior to 1976, two other commercial dwellings were developed on the site, once used as a hand carwash. The site has remained relatively unchanged to the present time.

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- The aerial photographs indicated the surrounding land appeared to be a combination of Commercial, Residential and Vacant land in the 1960s. At this time, two service stations, one to the north-west and the other immediately south of the site, were developed. By the 1970s, more Commercial dwellings to the north and Residential properties to the east had been developed. This trend continued through the 1980s, with a Community Hall also been developed to the east of the site. By the early 1990s, a number of Residential properties in the surrounding areas appeared to be redeveloped, and a Fire Station was established to the east of the site. By 2003, the service station next to the site had been redeveloped into townhouses. By 2005, some properties to the south and east of the site continued to be developed, and a large Commercial building was developed to the west of the site. Sometime between 2013 and the present time, the petrol station to the north-west of the site was also decommissioned and removed. The surrounding areas have remained relatively unchanged to the present time.
- The NSW EPA contaminated land database, List of Notified Sites and PFAS Investigation program indicate the subject site is not listed.
    - The NSW EPA list of notified sites indicates there are three (3) sites within the suburb of East Gosford. Each of these are located within 500m of the subject site, and the contamination type has been classified as either former Landfill or a Service Station. The Hylton Moore Park Site (former landfill) is currently regulated under the CLM Act.
    - The NSW EPA contaminated land database indicates a Mobil Service Station was former regulated under CLM.
- A search of the POEO Register revealed the subject site, and other locations in the suburb of East Gosford, were not listed.

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4.1.6 NSW EPA Records

The NSW EPA has described the following land known as Hylton Moore Park, Althorp Street, East Gosford as significantly contaminated. The land includes the following lots:

- Lot 1-33 in DP197405, Lots 14-29 in DP24248, Lot 40 in DP519355, Lot 2 in DP247233, Lots 8A & 8B in DP413380, Lot 1 in DP232403 & Lot 1 in DP56797

The NSW EPA believes the land is contaminated with the following:

- Ammonia
- PFAS
- Hazardous Ground Gas

The EPA has reason to believe harm has been, or may be, caused by the Substances, including:

- ammonia has been found in groundwater under the landfill and surface water drains at concentrations significantly above the Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018) 95% species protection criteria;
- per-and-poly-fluoroalkyl substances (PFAS) are present in groundwater under the landfill and surface water drains at concentrations above the interim guidelines for aquatic species;
- landfill gases (methane and carbon dioxide) are being generated at the site and have been measured in subsurface monitoring wells near the skate park and on the landfill boundary at concentrations above the trigger levels for further investigation in the NSW EPA Environmental Guidelines: Solid Waste Landfills (2016); and

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- leachate is present in an onsite drainage channel, increasing the risk of dermal contact with leachate and for leachate to reach Erina Creek.

5.0 REVIEW OF CONSTRUCTION AND SERVICE INFORMATION

5.1.1 Proposed Development

It is proposed that the motel currently on the site will be cleared and expanded along Brougham Street. The proposed development plans indicate that the new Elanora Hotel will run through Lots 3 & 4 in DP 1016073, Lot 15 in DP1061216 and Lot 7A in DP365458. The Hotel will be 3 storeys high, with each level having 15 rooms. The carparking area will be extended between the hotel and the Elanora Hotel pub, and a carparking area will be located underneath and extended outdoor eating eat. The current hand carwash dwelling will be removed to allow for more carparking spaces, which will be landscaped. The commercial dwelling along Victoria Street in Lot 7 in DP658304 will be refurbished into a bottle shop.

Refer to **Appendix A** - Proposed Development Plans.

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6.0 PROPERTIES HAZARDOUS BULK GROUND GAS

The follow tables outline some physical, chemical, and toxicological properties of ground gas:

Table 3: Properties of Hazardous Bulk Ground Gas

Name	Methane	Carbon Dioxide	Hydrogen Sulphide	Carbon Monoxide
Formula	CH4	CO2	H2S	CO
CAS No	74-82-8	124-38-9	7783-06-4	630-08-0
Hazard	Flammable, explosive, asphyxiating	Asphyxiating, toxic	Toxic, flammable, explosive	Toxic, flammable, explosive
Description	Colourless, odourless and toxic gas	Colourless, odourless and toxic gas	Colourless, flammable and toxic gas. Rotten egg <1ppm & odourless at >50ppm due anaesthesia of olfactory sense	Colourless, toxic, odourless and flammable
Formation	Anaerobic degradation of organic material (biogenic). High temp / pressure transformation of organic material (thermogenic).	Aerobic and anaerobic degradation of organic material, action of acidic water in carbonate rocks and respiration of soil bacteria	Reduction of sulphate by bacteria in the presence of organic matter in anaerobic environments (landfills, swamps, sewers).	Incomplete combustion of organic materials, including methane in landfill waste can also be produced by the reduction of carbon dioxide by nascent hydrogen.

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Name	Methane	Carbon Dioxide	Hydrogen Sulphide	Carbon Monoxide
LEL % v/v	5	Non-combustible	4.5	12.5
UEL %v/v	15	Non-combustible	45.5	74.2
Toxicity	Not toxic (but can cause asphyxiation by displacing oxygen)	Headaches and shortness of breath at 3% v/v Loss of consciousness at 10%, fatal at 22%	At 20-50ppm watering eyes, blurred vision, shortness of breath, sore throat. At 400-500ppm pulmonary oedema, headaches, dizziness, coma, asphyxiation	Symptoms of mild poisoning include; headaches and flu like effects. Greater exposure can lead to loss of consciousness and death.
Workplace Exposure standard	None	TWA 5000ppm STEL 30,000ppm	TWA 10ppm STEL 15ppm	TWA 30ppm
Guidelines levels for air (WHO 2000a & 2000b)			7 ug/m3 (aesthetic) 150 ug/m3 (health)	10 mg/m3 (10ppm) for 8hrs
Notes	Explosive limit changes when oxygen concentration reduces. When CO2 concentration reaches 24.5%v/v methane is non-flammable. Oxidises to CO2 by bacterial action.		After short periods of exposure, the gas paralyses the sense of smell	

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Table 4: Health effects of Oxygen depletions

Oxygen Concentration %	Toxicity
21%	Normal ambient air oxygen concentration
17%	Deteriorated night vision (not noticeable until a normal oxygen concentration is restored), increased breathing volume, and accelerated heartbeat
14% to 16%	Increased breathing volume, accelerated heartbeat, very poor muscular coordination, rapid fatigue, and intermittent respiration
6% to 10%	Nausea, vomiting, inability to perform, and unconsciousness
Less than 6%	Spasmodic breathing, convulsive movements, and death in minutes

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7.0 HAZARDOUS GROUND GAS MONITORING DETAILS

7.1.1 Landfill Gas Investigation Methodology

The HGGM for the current investigation was developed to provide data for the assessment of the potential risk of vapour intrusion of Hazardous Ground Gas from the nearby former landfill facility. Three groundwater wells designated (GW1 to GW3) were installed on the 13th April 2023.

Refer to **Appendix B** – Borehole Log.

The monitoring wells GW1 to GW3 were utilised to collect hazardous ground gas via the attachment of a gas cap and details of the well construction are provided below:

Table 5: Summary of Well Construction Details

Well ID	Total Depth (m)	Screening (m)	Surface Level (RL)	Water Bearing	Comment
BH1/GW1	4.1	4.1-0.6	7.75	Clay	Current
BH2/GW2	4.0	4.0-0.6	10.64	Shale/Clay	Current
BH3/GW3	4.1	4.1-0.6	7.35	Clay	Current

Notes:

- RLs was taken from the closest point on the survey plan provided in Appendix A.

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7.1.2 Setup for Sampling and Methodology

- The landfill gas monitoring device could detect methane gas in sufficiently low concentrations to ensure confidence in the results. The device was properly zeroed and calibrated according to the manufacturer's instructions before any measurements are made.
- The following methodology is to be undertaken during monitoring of the site wells:
    - Sampling is to be undertaken by experienced consultants.
    - Calibrate the instruments (if necessary) before the monitoring visit.
    - Before starting the monitoring, turn on the monitoring equipment, attach tubing and run through clean air and zero the methane. This needs to be done well away from any sources of soil gases and/or vapours such as vehicles and monitoring locations.
    - The monitoring equipment should remain switched on between boreholes to prevent having to zero the methane each time it is switched on. However, it was ensuring methane is zeroed before beginning to monitor at subsequent wells. Keeping the monitoring equipment on also purges any residual gas.
    - The weather, air temperature and ground conditions are to be recorded at the site.
    - Switch on the flow meter, attach the inlet tube to the gas tap and open. Record the range of pressures and flow readings on the gas monitoring proforma, making sure "positive" or "negative" is recorded.
    - Close the gas tap and remove the gas flow meter.
    - Attach the monitoring equipment tubing to the gas tap and open. Switch on the pump and record the peak and steady reading for methane (%

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v/v), methane (% LEL), carbon dioxide (% v/v) and oxygen (% v/v). It is also good practice to record the time taken to reach the steady reading.

- If the gas readings have not reached a steady value after three minutes, record the concentrations and the direction and rate of change in concentration (that is steadily increasing/rapid decrease). Where the concentrations are decreasing always record the peak concentration.
- Once data is recorded remove the tubing from the gas tap and close the tap. Purge the monitoring equipment in clean air (away from the borehole/and other sources of gas) until the methane and carbon dioxide concentrations return to zero and the oxygen is reading atmospheric concentrations.
- Record the water level using a dip meter, usually obtained by removing the gas tap or cover from the borehole. Water level readings are usually recorded from the top of the borehole or from ground level or both (be consistent and note to where depth relates), the top of the water. After obtaining a reading, record on the proforma and replace the gas tap or cover ensuring that the tap is closed and cover locked.
- Make a note of any defects to the boreholes and perform maintenance if appropriate.
- Repeat for all boreholes and record on proforma. Note any trend in atmospheric pressure in the lead up to and during the monitoring visit.

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7.1.3 Field Work

Hazardous Ground Gas Monitoring field forms are included in **Appendix C** – Field Record Forms & Bureau of Meteorology Data. Sampling was undertaken on the following dates:

- 19th April 2023 – Round One;
- 24th April 2023 – Round Two;
- 26th April 2023 – Round Three;
- 01st May 2023 – Round Four;
- 03rd May 2023 – Round Five;
- 10th May 2023 – Round Six;
- 12th May 2023 – Round Seven;

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8.0 QUALITY ASSURANCE / QUALITY CONTROL

8.1.1 Leak Test

A tracer compound (isopropyl alcohol) was utilised during the collection of the hazardous ground gas monitoring completed during Round One on the 19th April 2023. Prior to collecting readings from the GA5000 Gas Analyser a towel soaked with the tracer gas was placed around the well gas cap and Teflon tubing. A calibrated PID meter was used to determine whether the PID concentrations in the sample line was less than 10% of the concentration, around the isopropyl alcohol towel-soaked gas caps, which was considered acceptable and confirmed for all samples.

8.1.2 Calibration Certificate

The following environmental monitoring equipment was utilised during the hazardous ground gas monitoring completed by Foundation Earth Sciences:

- The GA5000 Gas Analyser portable meter was used to monitor the gas composition and flow;
- An MX4 portable gas detector (LEL, PID & Oxygen); and
- An Ion Science ProCheck Tiger PID Reader

A copy of the calibration certificates is presented in **Appendix D** – Calibration Certificates.

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9.0 SITE ASSESSMENT CRITERIA

9.1.1 Hazardous Ground Gas

For the purpose of this investigation, the results for the site assessment have been compared with guideline gas screening values as described in the draft NSW EPA publication 'Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases '2012 and The Circa C665 report. The results were also compared with the Methane Explosive Limits of 5 to 15% v/v.

The CIRIA C665 report also provides a detailed risk assessment methodology based on the gas screening value (GSV), which is calculated using the peak measured concentration and flow. Once calculated the GSV was used to quantitatively assess the risk associated with the gases. The risk matrix used for the purposes of this investigation is provided below and adopted from the above guidelines.

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Table 6: Risk Characterisation and Assessment

	Risk Classification	Characteristic Gas	Gas Screening Value (CH_4 & CO_2)	Additional factors	Typical sources
	Very low risk	1	**<0.07**	Methane <1% & C02 <5%	Natural soils with low organic content Typical fill
	Low risk	2	**<0.7**	Borehole flow rate <70 L/H	Natural soils with high organic content Typical fill
	Moderate risk	3	**<3.5**		Old inert waste landfill Flooded mine workings
	Moderate to high risk	4	**<15**	Level 3 Risk Assessments may be required	Mine workings susceptible to flooding Closed putrescible waste landfill
	High risk	5	**<70**	Level 3 Risk Assessment	Shallow, un-flooded abandoned mine workings
	Very high risk	6	**>70**	Level 3 Risk Assessment	Recent putrescible waste landfill

GSV = (concentration % / 100 x flow)

9.1.2 Carbon Dioxide

To assess whether carbon dioxide CO_2 would pose a risk to human health during remedial activities, CO_2 field readings were compared with relevant workplace exposure standards which workers are permitted to be exposed to continually for an 8-hour day. For CO_2 the permissible 8-hour time weighted average is 5,000ppm (0.5% CO_2) and short-term exposure is 30,000ppm (3% of CO_2) per the National Occupational Health and Safety Commission NOHSC 1995 'Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.

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10.0 MONITORING RESULTS

Results from hazardous ground gas monitoring are listed below. Calculation for gas screening values (GSV) are also presented in the table below. Meteorology conditions at the time of the monitoring were obtained from the Bureau of Meteorology and they are provided in **Appendix C** – Field Record Forms & Bureau of Meteorology Data with the fieldwork sheets.

Measurements were recorded initially after purging and again at 5-10mins for a stabilised final reading. The results from the stabilised readings and calculation for gas screening values (GSV) are provided below:

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Table 7: Hazardous Ground Gas Measurements and GSV Values

Sample ID	Date Sampled	HAZARDOUS GROUND GAS MONITORING DATA - STABLISED READINGS										
		ATMOSPHERIC PRESSURE (mb)	LEL (%)	FLOW RATE (L/H)	CH_4 (%)	CH_4 GSV (L/HR)	CO_2 (%)	CO_2 GSV (L/HR)	O_2 (%)	CO (PPM)	$H2_S$ (PPM)	PID (PPM)
Round One												
BH1 / GW1	19.04.2023	1019.00	9.00	0.00	0.50	0.0000	7.10	0.0000	8.80	7.00	0.00	1.40
BH2 / GW2	19.04.2023	1018.00	0.00	15.00	0.00	0.0000	4.50	0.6750	17.80	19.00	0.00	2.30
BH3 / GW3	19.04.2023	1018.00	2.00	0.00	0.00	0.0000	2.80	0.0000	17.70	431.00	1.00	10.80
Round Two												
BH1 / GW1	24.04.2023	-	-	-	-	-	-	-	-	-	-	-
BH2 / GW2	24.04.2023	1031.00	0.00	0.50	0.00	0.0000	4.60	0.0230	16.80	7.00	0.00	1.30
BH3 / GW3	24.04.2023	1031.00	0.00	0.20	0.00	0.0000	2.10	0.0042	18.70	6.00	0.00	3.10
Round Three												
BH1 / GW1	26.04.2023	-	0.00	0.20	0.10	0.0002	10.30	0.0206	2.40	2.00	0.00	1.40
BH2 / GW2	26.04.2023	-	0.00	16.80	0.00	0.0000	4.60	0.7728	18.40	4.00	0.00	1.20
BH3 / GW3	26.04.2023	-	0.00	0.30	0.00	0.0000	3.40	0.0102	17.40	10.00	0.00	5.10
Round Four												
BH1 / GW1	01.05.2023	-	17.00	0.20	1.00	0.0020	10.80	0.0216	1.10	4.00	0.00	1.10
BH2 / GW2	01.05.2023	-	0.00	19.20	0.00	0.0000	5.50	1.0560	16.60	2.00	0.00	1.10
BH3 / GW3	01.05.2023	-	0.00	11.10	0.00	0.0000	4.90	0.5439	17.10	5.00	0.00	4.50
Round Five												
BH1 / GW1	03.05.2023	1013.00	13.00	0.20	1.60	0.0032	11.30	0.0226	0.20	3.00	0.00	0.90
BH2 / GW2	03.05.2023	1013.00	0.00	8.70	0.00	0.0000	5.70	0.4959	16.60	4.00	0.00	1.40
BH3 / GW3	03.05.2023	1013.00	0.00	0.30	0.10	0.0003	4.80	0.0144	16.90	4.00	0.00	3.30
Round Six												
BH1 / GW1	10.05.2023	1026.00	24.00	0.03	2.30	0.00069	10.90	0.0033	0.00	1.00	0.00	1.20
BH2 / GW2	10.05.2023	1027.00	0.00	24.30	0.00	0.0000	6.10	1.4823	17.00	1.00	0.00	1.60
BH3 / GW3	10.05.2023	1026.00	0.00	0.50	0.10	0.0005	4.50	0.0225	16.90	2.00	0.00	2.00
Round Seven												
BH1 / GW1	12.05.2023	1028.00	28.00	0.40	2.30	0.00920	10.90	0.0436	0.00	1.00	1.00	0.90
BH2 / GW2	12.05.2023	1027.00	0.00	15.10	0.00	0.0000	6.20	0.9362	17.00	1.00	0.00	1.50
BH3 / GW3	12.05.2023	1028.00	0.00	0.10	0.10	0.0001	4.00	0.0040	16.90	1.00	0.00	2.10

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11.0 DISCUSSION

The monitoring was undertaken in April to May 2023 and the data collected from the seven rounds of spot monitoring indicates the following;

- The maximum concentration of methane recorded was 2.3% v/v from BH1 /GW1 during round six on 10th May, 2023 & round seven on the 12th May, 2023;
- The maximum concentration of carbon dioxide was recorded at 11.3% v/v from BH1 /GW1 during round five on 3RD May, 2023;
- The minimum concentration of oxygen recorded was 0% from BH1 /GW1 during round six on 10th May, 2023 & round seven on the 12th May, 2023;
- Carbon monoxide was detected at maximum concentration of 431ppm in BH3/GW3 during round one on the 19th April 2023;
- The maximum PID reading was recorded at 10.8ppm in BH3/GW3 in round one dated 19th April 2023;
- The maximum (LEL%) reading was recorded at 28% during round seven in BH1 / GW1 dated 12th May 2023;

Utilising the above rounds of data, the following Wilson and Card method for the characteristic gas situation (CS) has been calculated to be 3 (moderate risk). As per NSW EPA 2019 “Assessment and Management of Hazardous Ground Gases”, appropriate gas protection measures for the site are required.

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12.0 CONCLUSION AND RECOMMENDATION

Based on the Wilson and Card method the characteristic gas situation (CS) determined is 3 (moderate risk). As per NSW EPA 2012 "Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases", appropriate gas protection measures for the site are required.

Utilising the site derived CS, the gas protection guidance value of 3 has been adopted from the NSW EPA 2012 "Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases".

Based on the spot monitoring results to date, the site can be made ***suitable*** for the proposed development, subject to the following:

- Completion of a longer-term ground gas monitoring program including continuous landfill gas monitoring and additional landfill gas monitoring wells to provide a more detailed assessment of the risk posed to the proposed development.

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13.0 LIMITATIONS

To the best of our knowledge information contained in this report is accurate at the date of issue, however, subsurface conditions, including groundwater levels and contaminant concentrations, can change in a limited time. This should be borne in mind if the report is used after a protracted delay.

There is always some disparity in subsurface conditions across a site that cannot be fully defined by investigation. Hence it is unlikely that measurements and values obtained from sampling and testing during environmental works carried out at a site will characterise the extremes of conditions that exist within the site.

There is no investigation that is thorough enough to preclude the presence of material that presently or in the future, may be considered hazardous at the site. Since regulatory criteria are constantly changing, concentrations of contaminants presently considered low may, in the future, fall under different regulatory standards that require remediation.

Opinions expressed herein are judgements and are based on our understanding and interpretation of current regulatory standards and should not be construed as legal opinions.

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REFERENCES

- National Environmental Protection Council (NEPC) (1999) – National Environmental Protection (Assessment of Site Contamination) Measure. Amendment 2013.
- NSW DEC "Guidelines for the NSW Site Auditor Scheme" (2006, 2nd edition). NSW Environment Protection Authority, Sydney.
- NSW EPA "Guidelines for Consultants Reporting on Contaminated Sites" (2011). NSW Environment Protection Authority, Sydney.
- NSW EPA (2014) "Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997";
- NSW EPA, "Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases" (November 2012).
- CIRIA, "Assessing Risk posed by Hazardous Ground Gases to Buildings (December 2007).

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FIGURE 1: HAZARDOUS GROUND GAS MONITORING SITE PLAN

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Feature No	Details
a	Elanora hotel
b	Commercial
c	Fire station
d	Carpark
e	Vacant building

Key

Site Location

FES 2023 Soil Sampling Locations

FES 2023 Water Sampling Locations

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DRAWN DG	**Site Plan**
Figure 1	Bonython Elanora Pty Ltd
Job # E3019	29-31 and 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, East Gosford NSW

APPENDIX A: PROPOSED DEVELOPMENT PLANS

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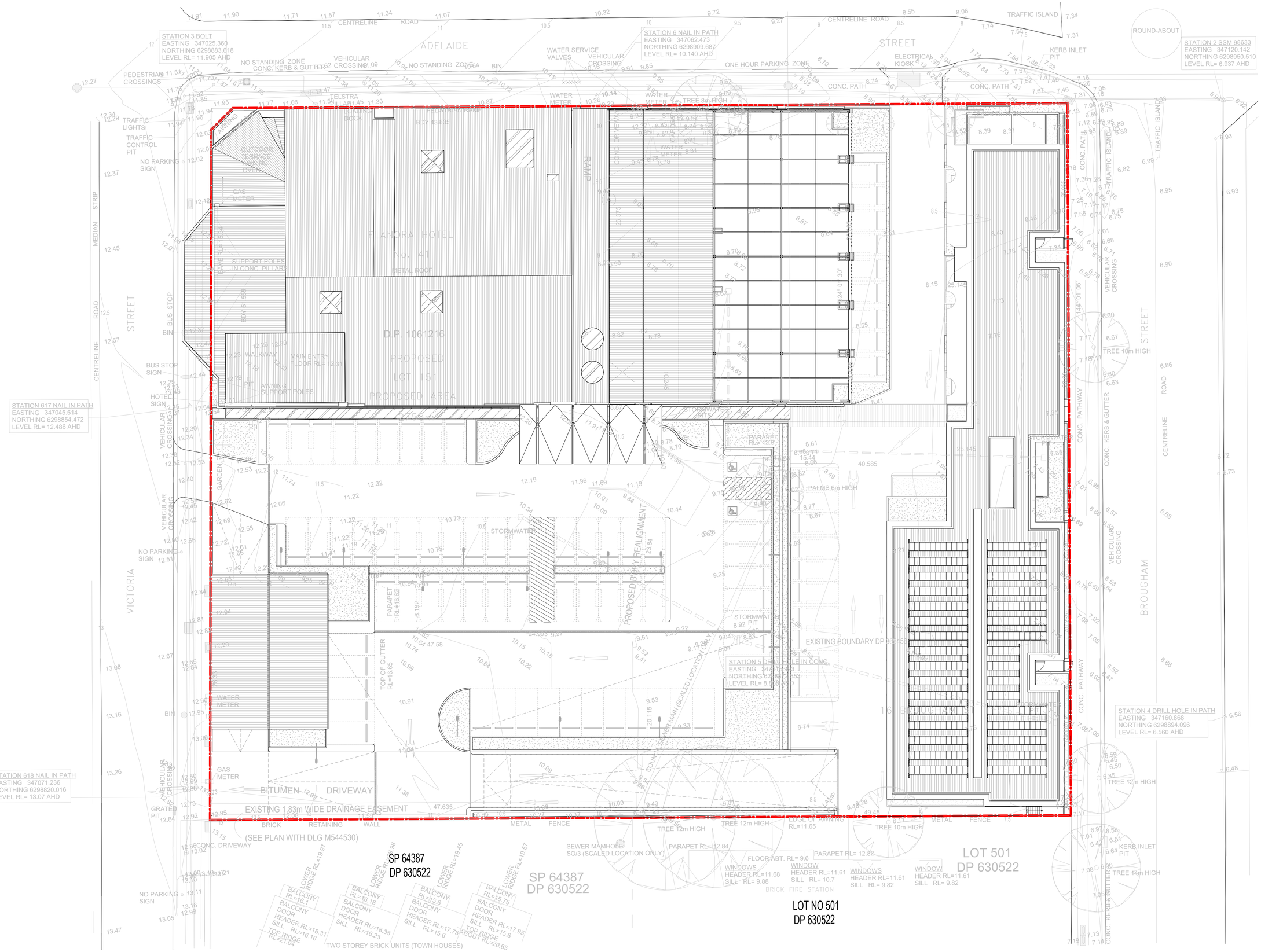

1 SITE PLAN / SITE ANALYSIS
SCALE 1 : 200

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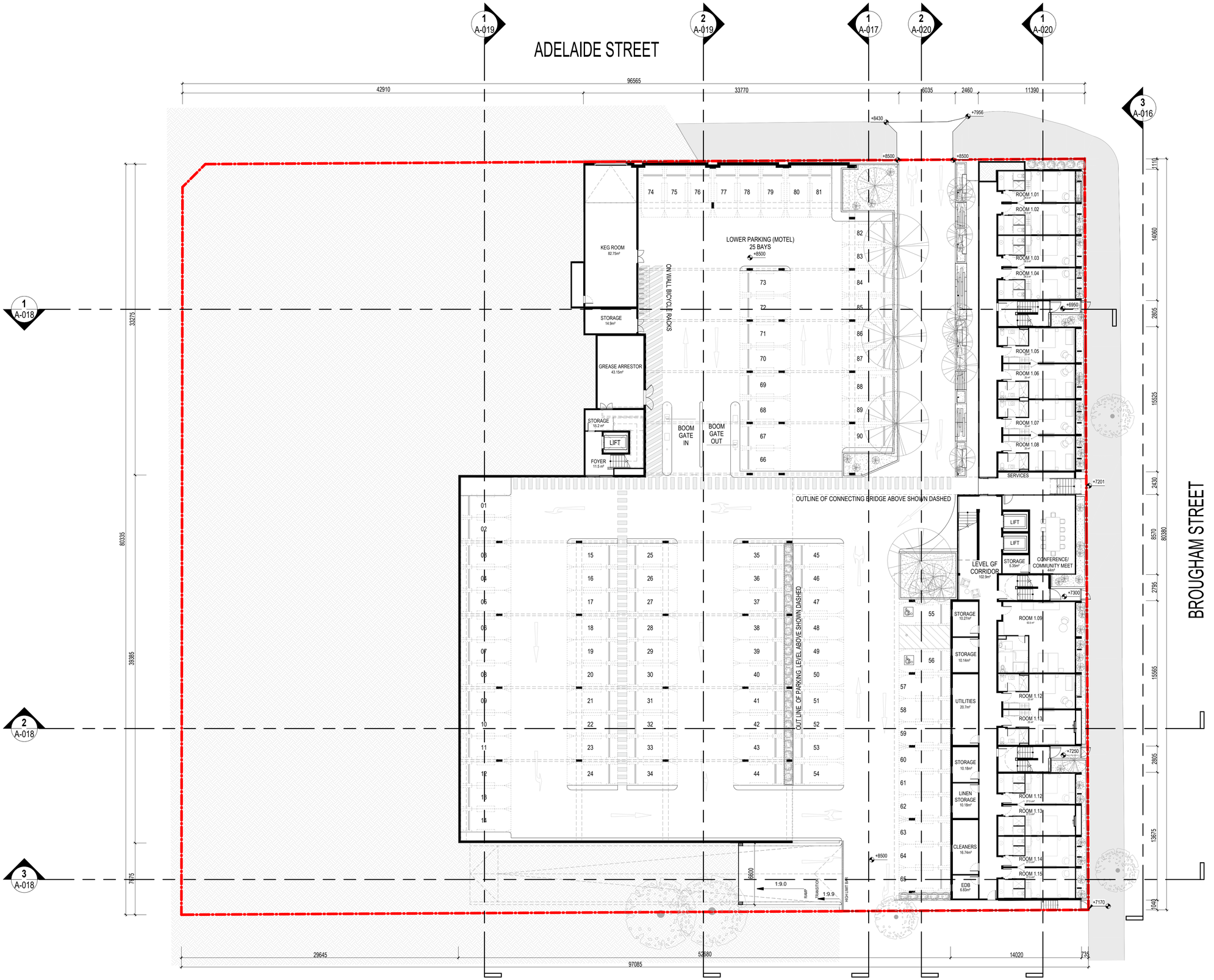
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SITE PLAN / SITE ANALYSIS
Scale @A1	1 : 200
Project No	22039
Drawing No	A-011
Revision	01



A LOWER GROUND FLOOR PLAN
SCALE 1 : 200

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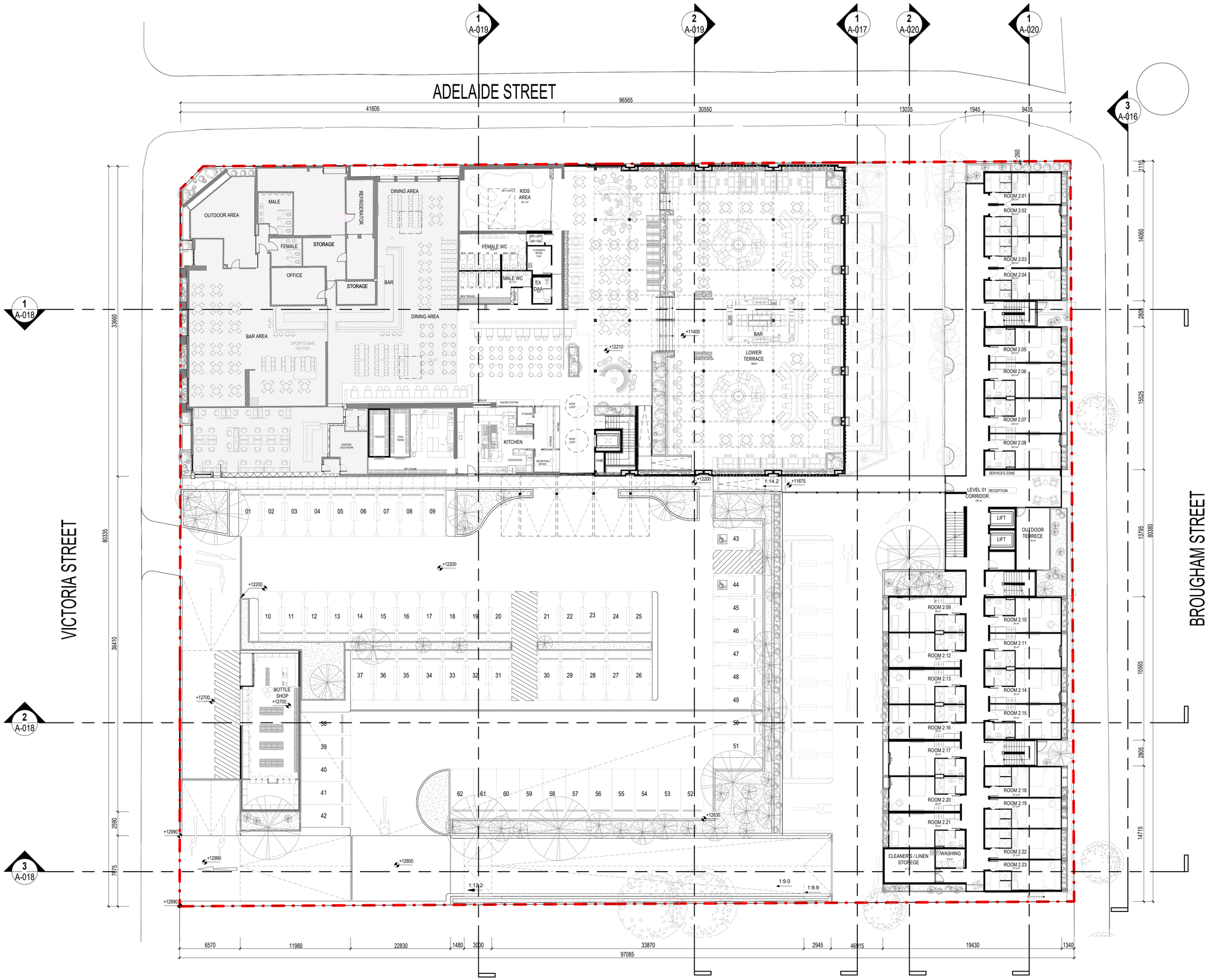
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	LOWER GROUND FLOOR PLAN
Scale @A1	1 : 200
Project No	22039
Drawing No	A-012
Revision	01



A GROUND FLOOR PLAN
SCALE 1 : 200

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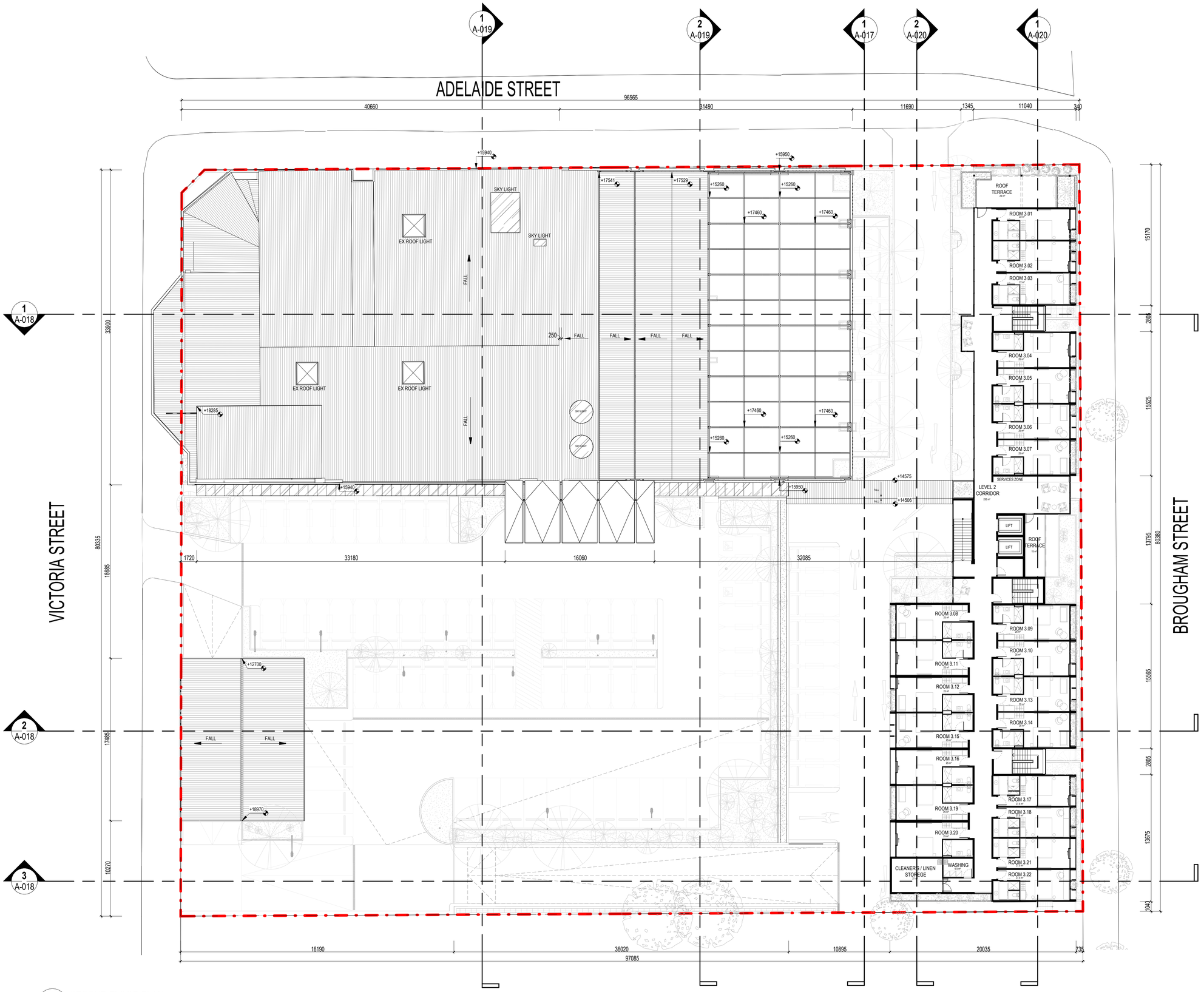
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	GROUND FLOOR PLAN
Scale @A1	1 : 200
Project No	22039
Drawing No	A-013
Revision	01



1 SECOND FLOOR PLAN
SCALE 1 : 200

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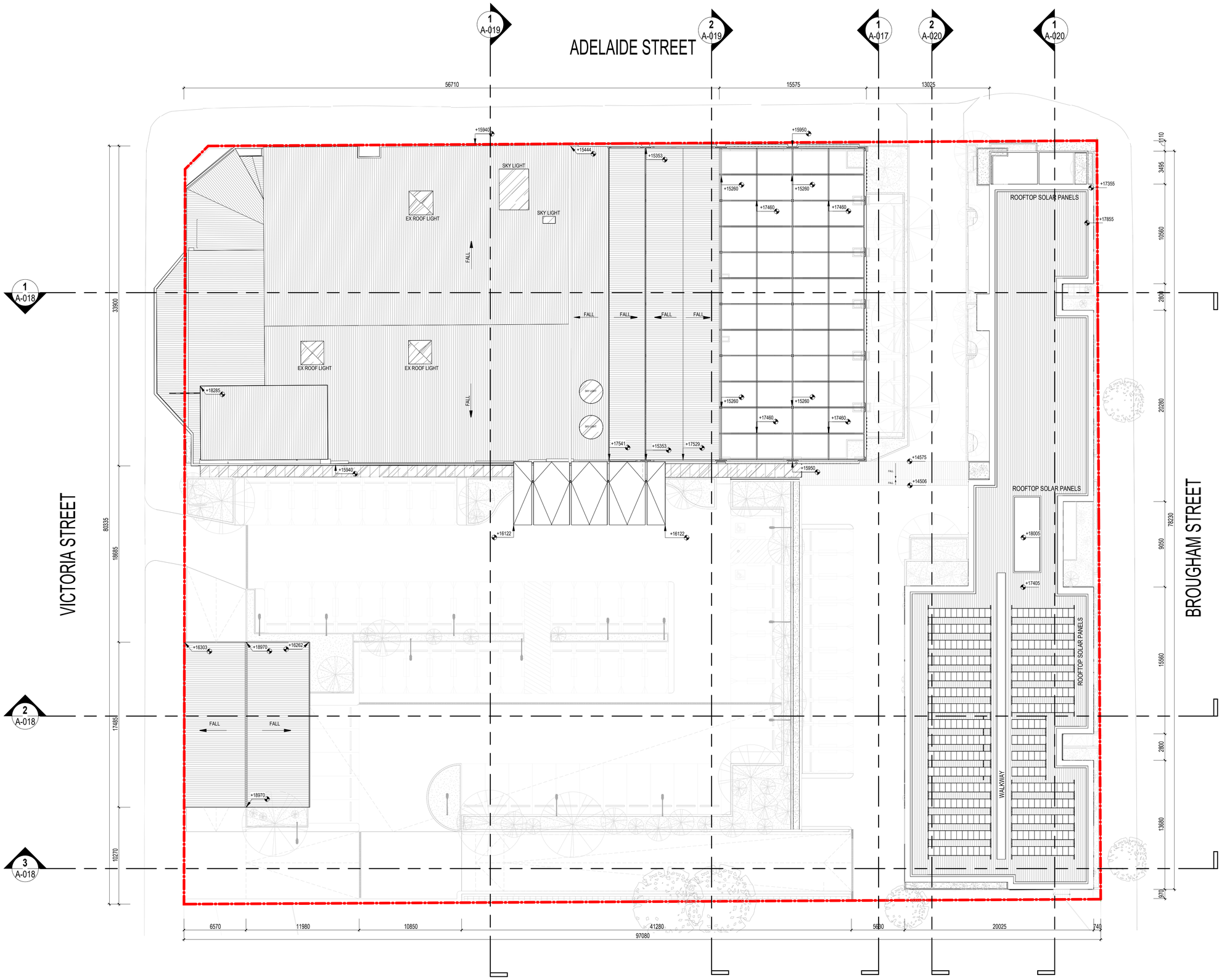
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SECOND FLOOR PLAN
Scale @A1	1 : 200
Project No	22039
Drawing No	A-014
Revision	01



A ROOF PLAN
SCALE 1 : 200

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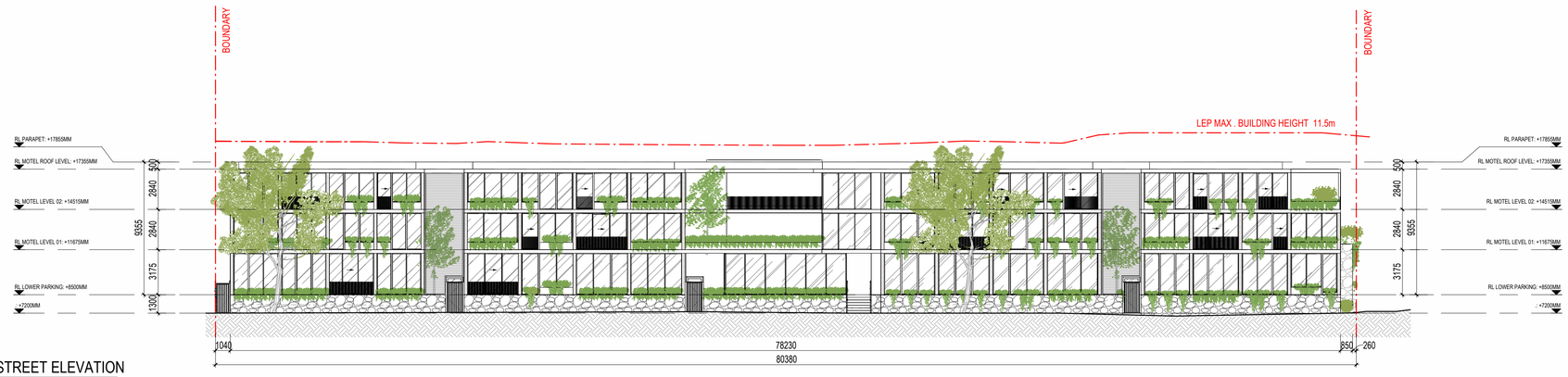
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	ROOF PLAN
Scale @A1	1 : 200
Project No	22039
Drawing No	A-015
Revision	01

1 VICTORIA STREET ELEVATION
SCALE 1 : 200

2 ADELAIDE STREET ELEVATION
SCALE 1 : 200



3 BROUGHAM STREET ELEVATION
SCALE 1 : 200

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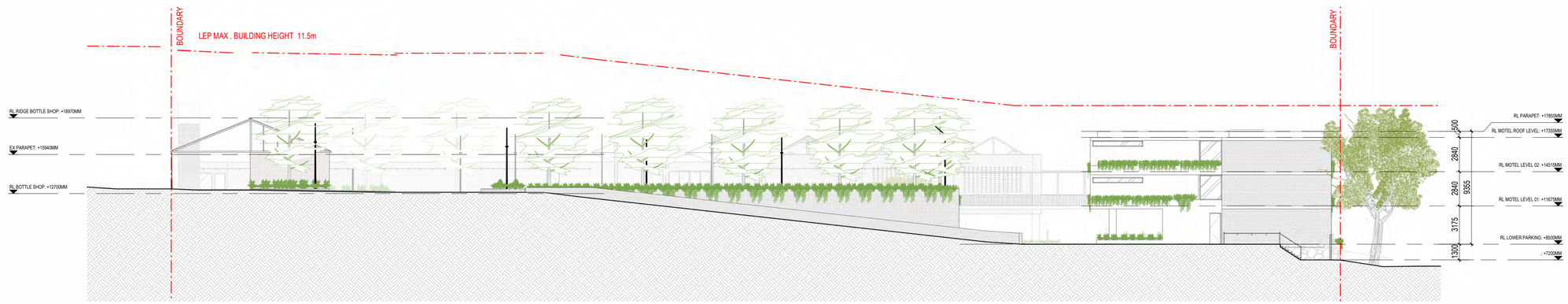
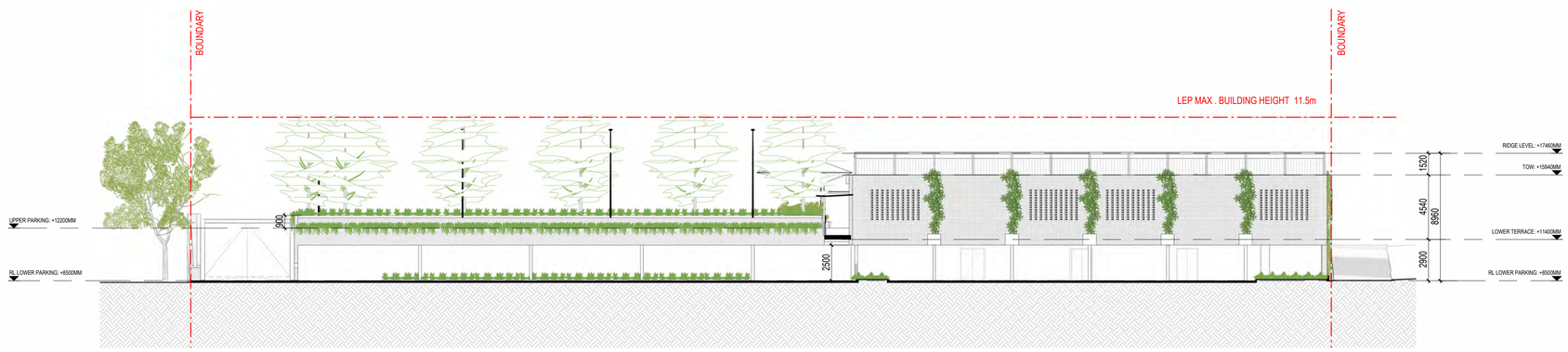
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	ELEVATION
Scale @A1	1 : 200
Project No	22039
Drawing No	A-016
Revision	01



2 STREET ELEVATION
SCALE 1 : 200



1 INSIDE BROUGHAM ELEVATION
SCALE 1 : 200

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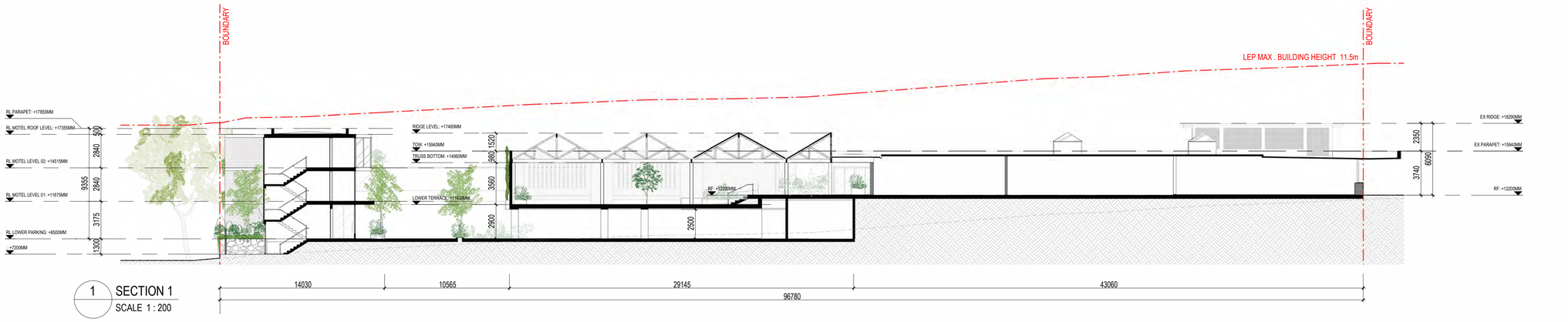
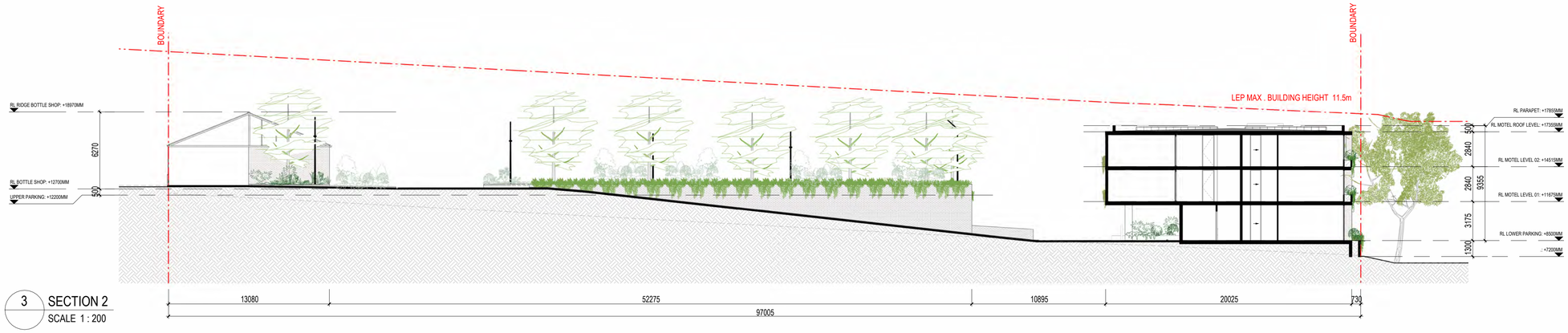
Rev	Description	Date
01	FOR INFORMATION	13.03.23

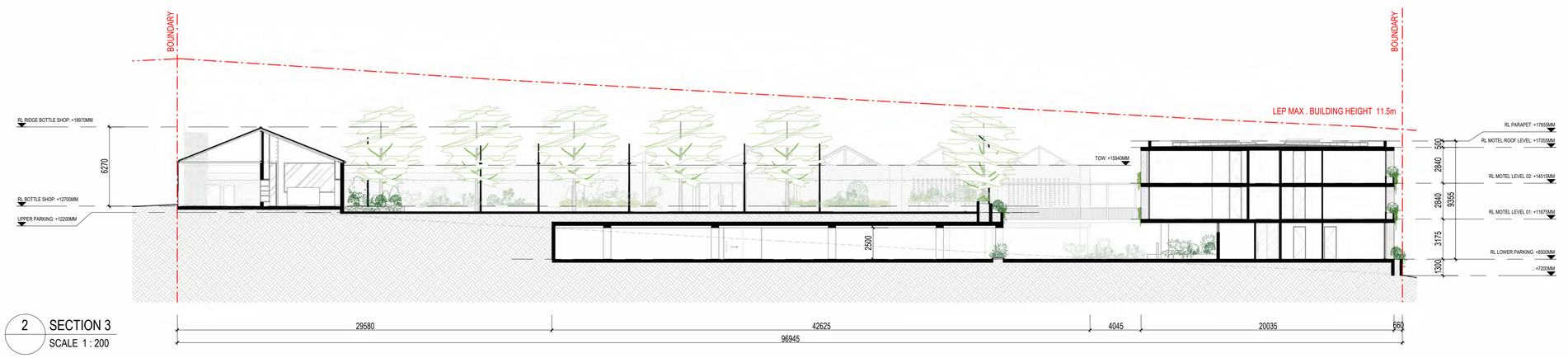
Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	ELEVATION
Scale @A1	1 : 200
Project No	22039
Drawing No	A-017
Revision	01



1 SECTION 1
SCALE 1 : 200



3 SECTION 2
SCALE 1 : 200



2 SECTION 3
SCALE 1 : 200

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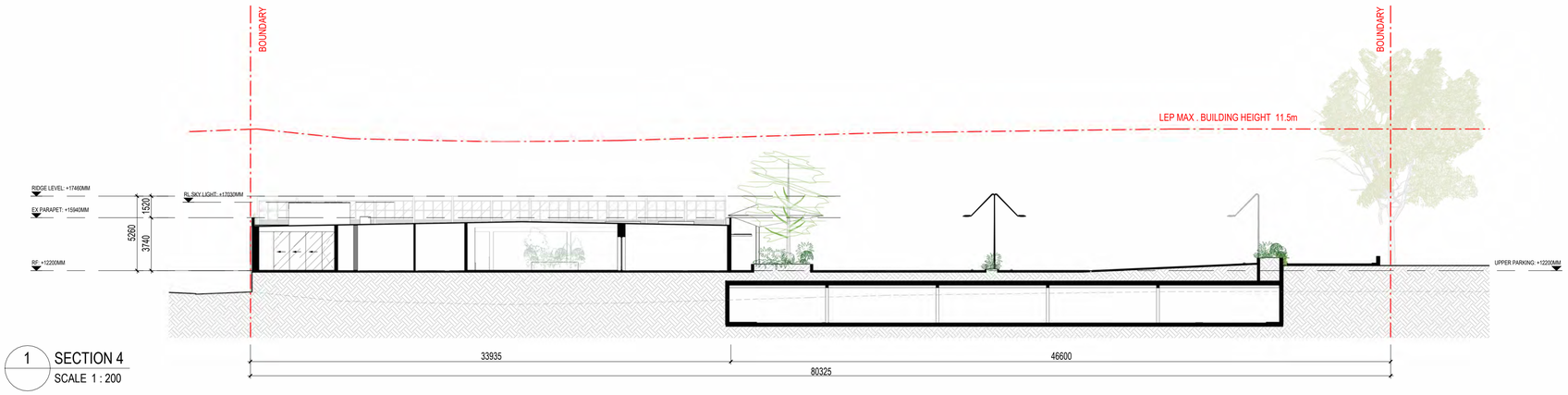
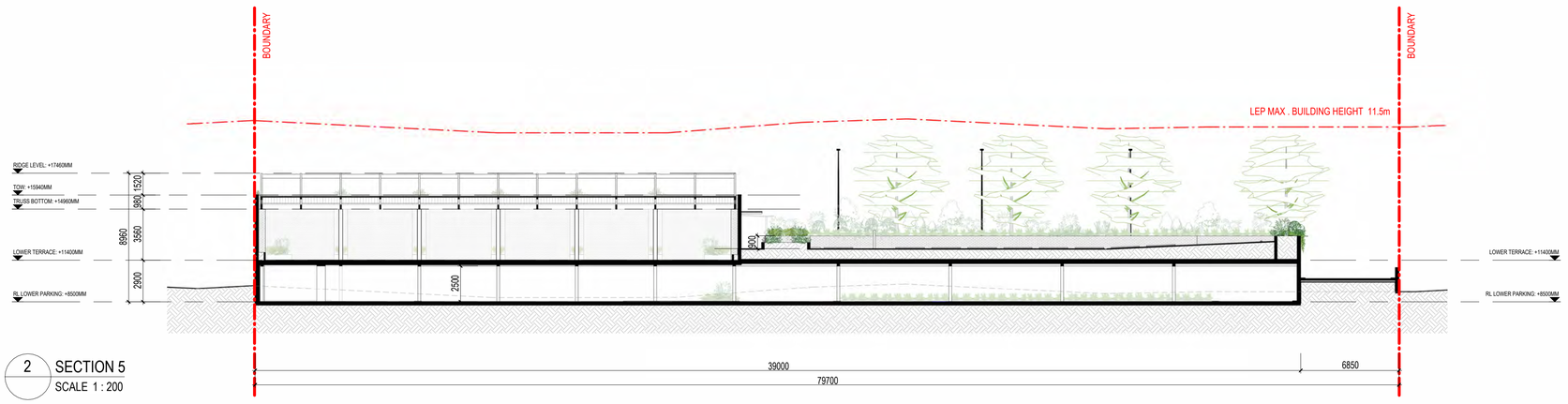
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SECTION
Scale @A1	1 : 200
Project No	22039
Drawing No	A-018
Revision	01



1 SECTION 4
SCALE 1 : 200



2 SECTION 5
SCALE 1 : 200

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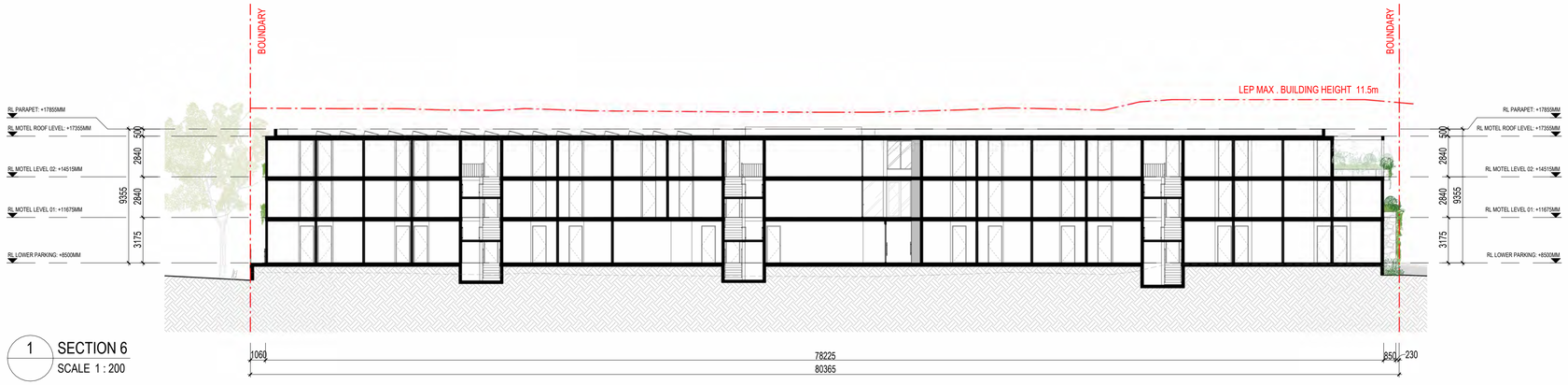
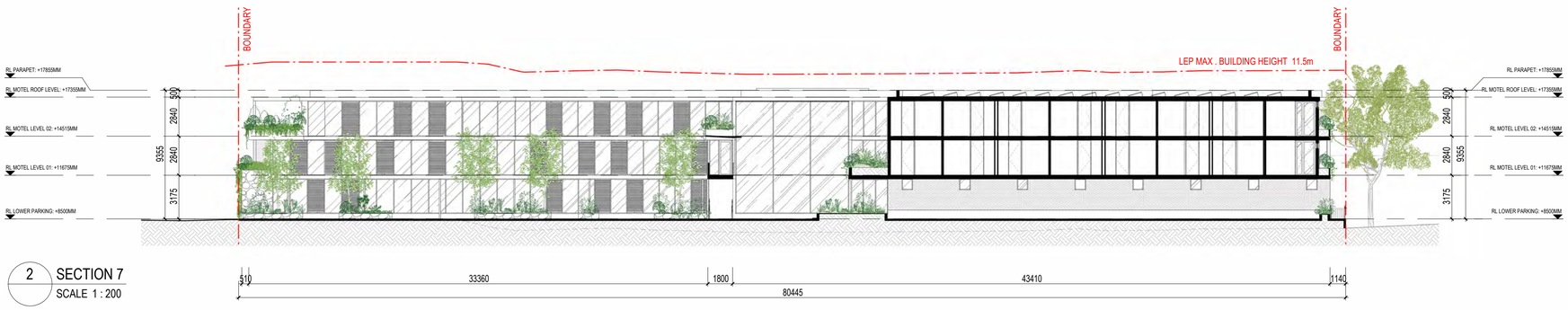
Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SECTION 2
Scale @A1	1 : 200
Project No	22039
Drawing No	A-019
Revision	01



1 SECTION 6
SCALE 1 : 200



2 SECTION 7
SCALE 1 : 200

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Rev	Description	Date
01	FOR INFORMATION	13.03.23

Client	Elanora Hotel
Project	Elanora Hotel Alterations & Additions 41 Victoria St, East Gosford NSW 2250
Drawing Title	SECTION 3
Scale @A1	1 : 200
Project No	22039
Drawing No	A-020
Revision	01

APPENDIX B: BOREHOLE LOG

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BOREHOLE : BH1/GW1

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT	Seepage ▼			0.05			Asphalt				No HC odours, staining or fibro fragments observed	
							Fill: Silty Clay, Low to medium plasticity, dark brown, with traces of fine grained sand	M		0.3-0.4	D1/SS1	0.5
				0.70		CL-CH	Silty CLAY, medium to high plasticity, yellow-orange-grey, with some fine grained sand	M			Seepage observed @0.7m 13.04.2023	
				1.0						0.9-1.0	No HC odours, staining or fibro fragments observed	1.0
				1.5								1.5
				2.0						1.9-2.0		2.0
	SWL observed @1.3m 17.04.2023 ▼			2.20		CL-CH	Silty CLAY, medium to high plasticity, yellow-orange-grey, with some fine grained sand	W			SWL observed @1.3m 17.04.2023	
				2.5								2.5
				3.0								3.0
				3.00		CL-CH	CLAY, medium to high plasticity, orange-red-grey	W			No HC odours, staining or fibro fragments observed	
				3.5								3.5
				4.0								4.0
				4.00			Borehole BH1/GW1 terminated at 4.00m					
				4.5								4.5
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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FOUNDATION EARTH SCIENCES

BOREHOLE : BH2/GW2

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT	SWL observed @1.05m 17.04.2023			0.05		CL-CH	Asphalt Silty CLAY, medium to high plasticity, brown, with some fine to coarse grained sand	M		0.2-0.3	No HC odours, staining or fibro fragments observed	
				0.30		CL-CH	Silty CLAY, medium plasticity, red, with some fine to coarse grained sand	D				0.5
				0.5								
				1.0						0.9-1.0	SWL observed @1.05m 17.04.2023	1.0
				1.5							No HC odours, staining or fibro fragments observed	1.5
				2.0								2.0
				2.00		CLS	Sandy CLAY, low plasticity, white	D				
				2.5								2.5
				3.0							No HC odours, staining or fibro fragments observed	3.0
				3.5								3.5
				3.50			Sandstone, red-white, Extremely weathered	D				
				4.0								4.0
				4.00			Borehole BH2/GW2 terminated at 4.00m					
				4.5								4.5
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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BOREHOLE : BH3/GW3

FOUNDATION EARTH SCIENCES

CLIENT NAME: Bonython Elanora Pty Ltd **JOB NUMBER:** E3019

SITE ADDRESS: 29-31 & 41-45 Victoria St, 27 Adelaide St, 16 & 20 Brougham Street, E.Gosford **PROJECT:** Detailed Site Investigation

Date Started : 13/04/2023 **Completed :** 13/04/2023 **Logged By :** KV/DG **Checked By :** MS

Borehole Location : Refer to Site Plan **Surface RL :** --- **Datum :** m AHD

Equipment : Drilling Rig **Borehole Size :** 100mm **Slope :** -90°

Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Consistence	Samples Tests Remarks	Additional Observations	Depth (m)
ADT	SWL observed @1.7m 17.04.2023			0.5			Fill: Silty Sandy Clay, low to medium plasticity, dark brown, with vegetable matter	M		0.2-0.3	No HC odours, staining or fibro fragments observed D2/SS2	0.5
				0.60		CH	Silty CLAY, high plasticity, light brown-orange, with some fine to coarse grained sand	M		0.9-1.0	No HC odours, staining or fibro fragments observed	1.0
				1.20		CH	Silty CLAY, high plasticity, red, with some fine to coarse grained sand and sandstone rocks	M			SWL observed @1.7m 17.04.2023	1.5
				2.0								2.0
				2.5							No HC odours, staining or fibro fragments observed	2.5
				3.0								3.0
				3.5							No HC odours, staining or fibro fragments observed	3.5
				4.0								4.0
				4.5								4.5
				4.50			Borehole BH3/GW3 terminated at 4.50m					
				5.0								5.0

Comments:

D - Dry, M - Moist, W - Wet

VS - Very Soft, S - Soft, F - Firm, St - Stiff, VSt - Very Stiff, H - Hard

VL - Very Loose, L - Loose, MD - Medium Dense, D - Dense, VD - Very Dense

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APPENDIX C: FIELD RECORD FORMS & BUREAU OF METEOROLOGY DATA

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LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Donythorn Elanora Pty Ltd	Monitoring Well ID:	GW1
Site Address:	Elanora hotel	Logged By:	RW
Project:	E3019	Date:	01/5/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	1.1	PID (ppm)	1.1
LEL (%)	0	LEL %	17
O2 (%)	20.7	O2 (%)	1.1
CO2 (%)	0.1	CO2 (%)	10.8
CH4 (%)	0.1	CH4 (%)	1.0
Temperature	-	Temperature	-
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.1	Bal (%)	87.2
Start Time	-	Start Time	-
Relative Pressure (mb)	0.03	Relative Pressure (mb)	-0.02
Flow Rate (L/H)	0.3	Flow Rate (L/H)	0.2
CO	0	CO	4
Baro		Baro	

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Bonython Elanora Pty Ltd	Monitoring Well ID:	GW2
Site Address:	Elanora hotel	Logged By:	RW
Project:	E3019	Date:	01/05/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.7	PID (ppm)	1.1
LEL (%)	0	LEL %	0
O2 (%)	20.3	O2 (%)	16.6
CO2 (%)	0.1	CO2 (%)	5.5
CH4 (%)	0.0	CH4 (%)	0.0
Temperature	-	Temperature	-
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.7	Bal (%)	77.8
Start Time	-	Start Time	-
Relative Pressure (mb)	-0.02	Relative Pressure (mb)	0.03
Flow Rate (L/H)	0.3	Flow Rate (L/H)	19.2
CO	0	CO	2
Baro		Baro	

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Bonython Elanora Pty Ltd	Monitoring Well ID:	GW3
Site Address:	Elanora	Logged By:	RW
Project:	E3019	Date:	01/05/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.9	PID (ppm)	4.5
LEL (%)	0	LEL %	
O2 (%)	20.5	O2 (%)	17.1
CO2 (%)	0.1	CO2 (%)	4.9
CH4 (%)	0.0	CH4 (%)	0.0
Temperature		Temperature	
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.4	Bal (%)	78.0
Start Time		Start Time	
Relative Pressure (mb)	-0.03	Relative Pressure (mb)	0.855
Flow Rate (L/H)	0.2	Flow Rate (L/H)	11.1

Co 0
Baro

Co 5
Baro

Record Checked by:		Document Version:	
Date:		Updated:	

Australian Government
Bureau of Meteorology

Latest Weather Observations for Gosford

IDN60801

Issued at 10:43 am EST Monday 1 May 2023 (issued every 10 minutes, with the page automatically refreshed every 10 minutes)

Station Details **ID:** 061425 **Name:** GOSFORD AWS **Lat:** -33.44 **Lon:** 151.36 **Height:** 7.0 m

Data from the previous 72 hours. | See also: Recent months at Gosford

Date/Time EST	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts		
01/10:30am	17.1	16.0	10.7	66	3.4	S	7	9	4	5	-	-
01/10:00am	16.6	16.3	10.2	66	3.4	S	2	7	1	4	-	-
01/09:30am	16.1	15.6	10.8	71	2.8	SSE	4	7	2	4	-	-
01/09:00am	15.3	15.0	10.1	71	2.7	WSW	2	6	1	3	-	-
01/08:30am	14.6	13.8	9.8	73	2.5	WSW	4	6	2	3	-	-
01/08:00am	14.1	14.1	9.9	76	2.2	CALM	0	6	0	3	-	-
01/07:30am	12.5	11.3	9.7	83	1.4	WNW	6	7	3	4	-	-
01/07:00am	11.9	10.6	9.3	84	1.3	NW	6	11	3	6	-	-
01/06:30am	11.5	10.1	9.4	87	1.1	WNW	7	11	4	6	-	-
01/06:00am	11.6	10.2	9.5	87	1.1	W	7	13	4	7	-	-
01/05:30am	11.2	10.0	9.5	89	0.9	WNW	6	9	3	5	-	-
01/05:00am	10.6	9.8	9.7	94	0.5	NW	4	6	2	3	-	-
01/04:30am	11.1	11.2	10.2	94	0.5	CALM	0	2	0	1	-	-
01/04:00am	11.2	11.3	10.3	94	0.5	CALM	0	2	0	1	-	-
01/03:30am	11.8	12.0	10.7	93	0.6	CALM	0	2	0	1	-	-
01/03:00am	11.6	11.7	10.3	92	0.7	CALM	0	4	0	2	-	-
01/02:30am	12.1	11.5	10.5	90	0.8	ENE	4	6	2	3	-	-
01/02:00am	12.3	11.4	10.5	89	0.9	WNW	6	7	3	4	-	-
01/01:30am	12.5	11.5	11.1	91	0.7	WNW	7	9	4	5	-	-
01/01:00am	12.5	12.3	10.4	87	1.1	WNW	2	4	1	2	-	-
01/12:30am	13.3	12.5	11.0	86	1.2	W	6	7	3	4	-	-
01/12:00am	12.9	12.6	11.3	90	0.8	WNW	4	6	2	3	-	-

Date/Time EST	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts		
30/11:30pm	12.2	12.5	10.8	91	0.7	CALM	0	2	0	1	-	-
30/11:00pm	12.8	12.8	11.2	90	0.8	NE	2	4	1	2	-	-
30/10:30pm	13.4	13.1	11.5	88	1.0	NW	4	6	2	3	-	-
30/10:00pm	14.5	14.6	11.5	82	1.6	WNW	2	6	1	3	-	-
30/09:30pm	15.8	15.1	11.4	75	2.4	NW	6	9	3	5	-	-
30/09:00pm	16.1	15.3	11.7	75	2.4	W	7	9	4	5	-	-
30/08:30pm	16.2	15.3	11.4	73	2.6	SW	7	15	4	8	-	-
30/08:00pm	14.6	14.7	12.6	88	1.1	WNW	4	4	2	2	-	-
30/07:30pm	15.0	15.9	12.9	87	1.2	CALM	0	0	0	0	-	-
30/07:00pm	15.6	16.3	13.4	87	1.2	W	2	6	1	3	-	-
30/06:30pm	16.0	17.2	13.7	86	1.3	CALM	0	0	0	0	-	-
30/06:00pm	16.6	17.8	13.9	84	1.5	CALM	0	0	0	0	-	-
30/05:30pm	17.1	18.2	13.6	80	2.0	CALM	0	0	0	0	-	-
30/05:00pm	17.8	18.7	14.1	79	2.1	NNE	2	4	1	2	-	-
30/04:30pm	18.6	19.4	13.7	73	2.8	N	2	4	1	2	-	-
30/04:00pm	20.3	20.5	13.0	63	4.1	NNW	4	4	2	2	-	-
30/03:30pm	20.5	20.5	13.7	65	3.9	SSW	6	9	3	5	-	-
30/03:00pm	19.9	18.9	12.4	62	4.2	SSW	9	13	5	7	-	-
30/02:30pm	20.4	20.0	12.4	60	4.5	SW	6	15	3	8	-	-
30/02:00pm	19.8	18.8	12.3	62	4.2	WSW	9	15	5	8	-	-
30/01:30pm	20.6	19.8	12.8	61	4.4	WNW	9	13	5	7	-	-
30/01:00pm	19.9	19.0	12.7	63	4.1	W	9	17	5	9	-	-
30/12:30pm	19.4	18.4	12.2	63	4.0	W	9	19	5	10	-	-
30/12:00pm	18.5	16.3	12.0	66	3.6	W	15	24	8	13	-	-
30/11:30am	18.0	16.6	12.2	69	3.2	W	11	17	6	9	-	-
30/11:00am	18.4	17.0	13.3	72	2.9	WNW	13	20	7	11	-	-
30/10:30am	18.1	16.3	13.4	74	2.7	W	15	20	8	11	-	-
30/10:00am	17.4	15.5	13.1	76	2.4	WNW	15	22	8	12	-	-
30/09:30am	16.4	16.0	13.1	81	1.8	WSW	7	17	4	9	-	-

Date/Time EST	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts		
28/11:30pm	19.3	20.2	16.0	81	2.0	NNE	6	9	3	5	-	-
28/11:00pm	19.9	20.8	16.0	78	2.3	NNE	6	11	3	6	-	-
28/10:30pm	20.2	21.1	16.0	77	2.5	NNE	6	9	3	5	-	-
28/10:00pm	20.5	21.2	16.1	76	2.6	NNE	7	13	4	7	-	-
28/09:30pm	20.8	21.2	16.4	76	2.7	NNE	9	17	5	9	-	-
28/09:00pm	20.8	21.2	16.4	76	2.7	N	9	17	5	9	-	-
28/08:30pm	21.5	22.1	16.9	75	2.8	NNE	9	20	5	11	-	-
28/08:00pm	21.6	21.9	17.0	75	2.8	N	11	22	6	12	-	-
28/07:30pm	21.6	22.1	17.4	77	2.6	NNE	11	19	6	10	-	-
28/07:00pm	21.4	22.2	17.2	77	2.6	NNE	9	17	5	9	-	-
28/06:30pm	21.4	22.5	17.0	76	2.7	N	7	15	4	8	-	-
28/06:00pm	21.3	22.5	16.9	76	2.7	NE	6	11	3	6	-	-
28/05:30pm	21.6	22.7	17.0	75	2.8	NE	7	9	4	5	-	-
28/05:00pm	22.6	23.1	16.6	69	3.7	ENE	9	13	5	7	-	-
28/04:30pm	23.9	24.2	15.9	61	4.8	NE	9	13	5	7	-	-
28/04:00pm	25.2	25.7	14.9	52	6.2	NNE	6	9	3	5	-	-
28/03:30pm	25.4	26.4	16.3	57	5.6	NNE	6	9	3	5	-	-
28/03:00pm	25.3	25.7	16.4	57	5.5	ENE	9	15	5	8	-	-
28/02:30pm	26.0	26.0	14.1	47	7.1	N	7	17	4	9	-	-
28/02:00pm	26.9	27.3	15.3	49	7.0	N	7	13	4	7	-	-
28/01:30pm	26.5	26.5	15.2	49	6.8	NNE	9	13	5	7	-	-
28/01:00pm	25.9	25.8	15.0	51	6.6	N	9	17	5	9	-	-
28/12:30pm	26.1	26.9	16.4	55	6.0	NNE	7	15	4	8	-	-
28/12:00pm	25.4	25.5	15.4	54	6.0	NNE	9	20	5	11	-	-
28/11:30am	25.1	26.1	16.3	58	5.4	NNE	6	11	3	6	-	-
28/11:00am	24.2	24.9	15.7	59	5.1	N	6	13	3	7	-	-

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Date/Time EST	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts		
30/09:00am	16.1	15.6	12.8	81	1.8	NW	7	15	4	8	-	-
30/08:30am	16.2	15.5	13.1	82	1.7	W	9	13	5	7	-	-
30/08:00am	15.8	15.4	13.1	84	1.5	W	7	13	4	7	-	-
30/07:30am	15.1	15.3	13.0	87	1.2	NW	4	9	2	5	-	-
30/07:00am	14.7	14.9	12.9	89	1.0	WSW	4	11	2	6	-	-
30/06:30am	14.5	14.2	13.2	92	0.7	WNW	7	11	4	6	-	-
30/06:00am	14.6	14.3	13.3	92	0.7	W	7	11	4	6	-	-
30/05:30am	14.6	13.9	13.3	92	0.7	NW	9	13	5	7	-	-
30/05:00am	14.6	15.3	13.5	93	0.6	WNW	2	7	1	4	-	-
30/04:30am	14.7	14.1	13.4	92	0.7	WNW	9	15	5	8	-	-
30/04:00am	14.8	14.5	13.3	91	0.8	WNW	7	13	4	7	-	-
30/03:30am	15.1	14.1	13.3	89	1.0	WNW	11	15	6	8	-	-
30/03:00am	15.2	14.9	13.4	89	1.0	W	7	11	4	6	-	-
30/02:30am	15.1	14.9	13.6	91	0.8	WSW	7	11	4	6	-	-
30/02:00am	15.1	14.6	13.8	92	0.7	WNW	9	15	5	8	-	-
30/01:30am	15.1	15.0	13.8	92	0.7	WNW	7	13	4	7	-	-
30/01:00am	15.2	15.0	13.7	91	0.8	W	7	11	4	6	-	-
30/12:30am	15.2	14.3	13.7	91	0.8	W	11	19	6	10	-	-
30/12:00am	15.3	14.9	14.2	93	0.6	WSW	9	19	5	10	-	-

Date/Time EST	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts		
29/11:30pm	15.4	15.6	14.3	93	0.6	SW	6	9	3	5	-	-
29/11:00pm	15.8	13.7	14.7	93	0.6	WNW	19	30	10	16	-	-
29/10:30pm	16.3	14.3	15.0	92	0.8	NW	19	33	10	18	-	-
29/10:00pm	16.9	16.4	15.8	93	0.6	WNW	13	20	7	11	-	-
29/09:30pm	17.3	17.9	15.8	91	0.9	W	7	13	4	7	-	-
29/09:00pm	17.3	17.9	15.8	91	0.9	WNW	7	9	4	5	-	-
29/08:30pm	17.6	19.1	15.8	89	1.1	WNW	2	4	1	2	-	-
29/08:00pm	17.6	18.4	15.8	89	1.1	WSW	6	9	3	5	-	-
29/07:30pm	17.5	18.2	15.7	89	1.1	W	6	9	3	5	-	-
29/07:00pm	17.6	18.7	15.6	88	1.2	WSW	4	7	2	4	-	-
29/06:30pm	17.6	18.6	15.4	87	1.3	WSW	4	6	2	3	-	-
29/06:00pm	17.7	18.7	15.3	86	1.4	WSW	4	6	2	3	-	-
29/05:30pm	17.9	18.4	15.0	83	1.7	SW	6	9	3	5	-	-
29/05:00pm	18.2	18.9	15.5	84	1.6	WSW	6	9	3	5	-	-
29/04:30pm	18.5	18.9	15.4	82	1.8	SW	7	13	4	7	-	-
29/04:00pm	19.1	18.9	14.8	76	2.5	SW	9	15	5	8	-	-
29/03:30pm	19.3	19.1	14.8	75	2.6	SW	9	15	5	8	-	-
29/03:00pm	19.5	20.0	15.0	75	2.6	W	6	9	3	5	-	-
29/02:30pm	19.7	19.9	14.7	73	2.9	WSW	7	11	4	6	-	-
29/02:00pm	20.3	20.0	14.4	69	3.4	WSW	9	20	5	11	-	-
29/01:30pm	21.3	22.3	15.4	69	3.5	WSW	4	7	2	4	-	-
29/01:00pm	20.7	20.8	14.4	67	3.7	SW	7	11	4	6	-	-
29/12:30pm	20.3	20.7	14.7	70	3.3	SW	6	9	3	5	-	-
29/12:00pm	20.6	20.8	14.7	69	3.5	W	7	11	4	6	-	-
29/11:30am	20.8	21.8	14.2	66	3.8	WSW	2	6	1	3	-	-
29/11:00am	21.4	21.8	14.8	66	3.9	WSW	6	13	3	7	-	-
29/10:30am	20.4	20.8	14.7	70	3.3	WSW	6	9	3	5	-	-
29/10:00am	18.8	20.8	15.9	83	1.7	CALM	0	0	0	0	-	-
29/09:30am	18.2	20.2	16.0	87	1.3	CALM	0	0	0	0	-	-
29/09:00am	18.3	20.3	15.9	86	1.4	CALM	0	4	0	2	-	-
29/08:30am	17.7	19.6	15.7	88	1.2	CALM	0	0	0	0	-	-
29/08:00am	17.1	18.9	15.4	90	1.0	CALM	0	2	0	1	-	-
29/07:30am	16.6	18.0	15.3	92	0.8	ENE	2	4	1	2	-	-
29/07:00am	16.4	17.4	15.3	93	0.6	ENE	4	6	2	3	-	-
29/06:30am	15.9	17.5	14.9	94	0.6	CALM	0	0	0	0	-	-
29/06:00am	15.8	17.3	14.7	93	0.6	CALM	0	0	0	0	-	-
29/05:30am	15.8	17.3	14.7	93	0.6	CALM	0	0	0	0	-	-
29/05:00am	16.1	17.6	14.6	91	0.9	CALM	0	0	0	0	-	-
29/04:30am	16.5	16.9	14.7	89	1.0	NNW	6	7	3	4	-	-
29/04:00am	16.4	17.3	15.1	92	0.8	ENE	4	4	2	2	-	-
29/03:30am	16.9	18.2	15.2	90	1.0	WNW	2	6	1	3	-	-
29/03:00am	16.7	17.8	15.7	94	0.6	SW	4	7	2	4	-	-
29/02:30am	16.4	18.1	15.3	93	0.6	CALM	0	0	0	0	-	-
29/02:00am	16.4	18.1	15.1	92	0.8	CALM	0	0	0	0	-	-
29/01:30am	16.7	18.0	15.2	91	0.9	SSW	2	6	1	3	-	-
29/01:00am	17.1	18.9	15.6	91	0.9	CALM	0	2	0	1	-	-
29/12:30am	17.4	18.5	15.6	89	1.1	ENE	4	4	2	2	-	-
29/12:00am	18.8	19.9	15.7	82	1.8	NNE	4	6	2	3	-	-

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Bonnythorn Elanora Pty Ltd	Monitoring Well ID:	GW1
Site Address:	Elanora Hoked	Logged By:	KV
Project:	E3019	Date:	03/05/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.5	PID (ppm)	0.9
LEL (%)	0	LEL %	13
O2 (%)	20.5	O2 (%)	0.2
CO2 (%)	0.1	CO2 (%)	11.3
CH4 (%)	0.1	CH4 (%)	1.6
Temperature	–	Temperature	–
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.4	Bal (%)	86.9
Start Time	–	Start Time	–
Relative Pressure (mb)	0.05	Relative Pressure (mb)	0.05
Flow Rate (L/H)	0.2	Flow Rate (L/H)	0.2
CO	0	CO	3
Baro	1013	Baro	1013

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Boughton Elanora Pty Ltd	Monitoring Well ID:	GW2
Site Address:	Elanora Hotel	Logged By:	KV
Project:	E3019	Date:	03/05/2023

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.7	PID (ppm)	1.4
LEL (%)	0	LEL %	0
O2 (%)	20.5	O2 (%)	16.6
CO2 (%)	0.1	CO2 (%)	5.7
CH4 (%)	0.1	CH4 (%)	0
Temperature	–	Temperature	–
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.3	Bal (%)	77.8
Start Time	–	Start Time	–
Relative Pressure (mb)	0.05	Relative Pressure (mb)	0.14
Flow Rate (L/H)	0.2	Flow Rate (L/H)	8.7
CO	~~+~~0	CO	4
Baro	1013	Baro	1013

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Boroughton Elanora Pty Ltd	Monitoring Well ID:	GW3
Site Address:	Elanora Hotel	Logged By:	KV
Project:	E3019	Date:	03/05/2023

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.5	PID (ppm)	3.3
LEL (%)	0	LEL %	0
O2 (%)	20.3	O2 (%)	16.9
CO2 (%)	0.1	CO2 (%)	4.3
CH4 (%)	0.1	CH4 (%)	0.1
Temperature	—	Temperature	—
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.5	Bal (%)	78.3
Start Time	—	Start Time	—
Relative Pressure (mb)	0.00	Relative Pressure (mb)	0.00
Flow Rate (L/H)	0.3	Flow Rate (L/H)	0.3
CO	0	CO	4
Baro	1013	Baro	1013

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:		Monitoring Well ID:	GW1
Site Address:	Elmore Road	Logged By:	KV
Project:	E3019.2	Date:	10/05/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish	Gravel	Co-ordinates	
Condition	Good	Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	No	PID (ppm)	1.2
LEL (%)	0	LEL %	24
O2 (%)	20.3	O2 (%)	~~0.2~~ 0.0
CO2 (%)	0	CO2 (%)	10.9
CH4 (%)	0	CH4 (%)	2.3
Temperature	–	Temperature	–
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.7	Bal (%)	86.8
Start Time	–	Start Time	–
Relative Pressure (mb)	0.05	Relative Pressure (mb)	-0.02
Flow Rate (L/H)	0.2	Flow Rate (L/H)	0.03
CO	0	CO	1
Benz	1026	Benz	1026

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:		Monitoring Well ID:	GW2
Site Address:	Elmore Hotel	Logged By:	KV
Project:	E3019-2	Date:	10/5/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish	Gravel	Co-ordinates	
Condition	Good	Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	1.0	PID (ppm)	1.6
LEL (%)	0	LEL %	0
O2 (%)	21.0	O2 (%)	17.0
CO2 (%)	0.1	CO2 (%)	6.1
CH4 (%)	0	CH4 (%)	0
Temperature	–	Temperature	–
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	78.9	Bal (%)	77.0
Start Time	–	Start Time	–
Relative Pressure (mb)	0.09	Relative Pressure (mb)	0.03
Flow Rate (L/H)	0.1	Flow Rate (L/H)	24.3
CO	0	CO	1
Bero	1027	Bero	1027

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:		Monitoring Well ID:	GW3
Site Address:	Elemora Road	Logged By:	KV
Project:	E3019-2	Date:	10/05/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish	Gerric	Co-ordinates	
Condition	Ok	Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.8	PID (ppm)	2.0
LEL (%)	0	LEL %	0
O2 (%)	20.3	O2 (%)	~~20.3~~ 16.9
CO2 (%)	0	CO2 (%)	~~0~~ 4.5
CH4 (%)	0.1	CH4 (%)	0.1
Temperature	—	Temperature	—
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.6	Bal (%)	79.0
Start Time	—	Start Time	—
Relative Pressure (mb)	0.0	Relative Pressure (mb)	0.02
Flow Rate (L/H)	0.4	Flow Rate (L/H)	0.5
CO	0	CO	2
Baro	1026	Baro	1026

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:		Monitoring Well ID:	GW1
Site Address:	Elanora Hoked	Logged By:	KV
Project:	E3019	Date:	12/05/2023

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	1.1	PID (ppm)	0.9
LEL (%)	0.0	LEL %	28
O2 (%)	20.2	O2 (%)	0.0
CO2 (%)	0	CO2 (%)	10.9
CH4 (%)	0	CH4 (%)	2.3
Temperature	—	Temperature	—
H2S (ppm)	0	H2S (ppm)	1
Bal (%)	79.7	Bal (%)	86.7
Start Time	—	Start Time	—
Relative Pressure (mb)	0.14	Relative Pressure (mb)	0.00
Flow Rate (L/H)	30.1	Flow Rate (L/H)	0.4

CO 1 CO 1
Baro 1028 Baro 1028

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:		Monitoring Well ID:	GW2
Site Address:	Elanora Hotel	Logged By:	KV
Project:	E3019	Date:	12/05/2023

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	1.1	PID (ppm)	1.5
LEL (%)	0	LEL %	0
O2 (%)	20.8	O2 (%)	17.0
CO2 (%)	0.1	CO2 (%)	6.2
CH4 (%)	0	CH4 (%)	0
Temperature	–	Temperature	–
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.2	Bal (%)	76.7
Start Time	–	Start Time	–
Relative Pressure (mb)	0.03	Relative Pressure (mb)	0.05
Flow Rate (L/H)	0.3	Flow Rate (L/H)	@ 15.1
CO	0	CO	1
Beno	1027	Beno	1027

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:		Monitoring Well ID:	GW3
Site Address:	Elanora Hotel	Logged By:	KV
Project:	E3019	Date:	12/05/2023

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.7	PID (ppm)	2.1
LEL (%)	0.0	LEL %	0
O2 (%)	19.9	O2 (%)	16.9
CO2 (%)	0	CO2 (%)	4
CH4 (%)	0.1	CH4 (%)	0.1
Temperature	—	Temperature	—
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	80.0	Bal (%)	79.1
Start Time	—	Start Time	—
Relative Pressure (mb)	0.03	Relative Pressure (mb)	0.03
Flow Rate (L/H)	0.2	Flow Rate (L/H)	0.1
CO	1	CO	1
Baro	1028	Baro	1028

Record Checked by:		Document Version:	
Date:		Updated:	

GW1

Initial

PID 0.8
LEL 0
O2 19.8
CO2 0.1
CH4 0
Temp —
H2S 0
Bar 80.1
Start time
Relative pressure 0.02
Flow Rate 0.1
CO 1
Baro ~~801~~ 1014

Stabilized

PID 1.4
LEL 9
O2 8.8
CO2 7.1
CH4 0.5
Temp —
H2S 0
Bar 83.7
Start time
Relative pressure 0.02
Flow Rate 0.0
CO 7
Baro ~~8~~ 1019

GW2

Initial

PID	0.8
LEL	0
O2	20.6
CO2	0.1
CH4	0
Temp	–
H2S	0
Bal	79.3 %

Start time

Reverse pressure 0.02

Flow Rate 0.1

CO 1

Baro 1018

Stabilized

PID	2.3
LEL	0
O2	17.8
CO2	4.5
CH4	0
Temp	–
H2S	0
Bal	77.8 %

Start time

Reverse pressure 0.02

Flow Rate 15

CO 19

Baro 1018

GW3

Initial

PID 0.8
LEL 0
O2 19.8
CO2 0.1
CHU 0
Temp –
H2S 0
Bal 20.2
Start time –
Relative pressure 0.03
Flow rate 0.0
CO 2
Bero 1018

Stabilized

PID 10.8
LEL 2
O2 17.7
CO2 2.8
CHU 0.1
Temp –
H2S 1
Bal 79.5
Start time –
Relative pressure 0.07
Flow Rate 0.0
CO 431
Bero 1018

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Beaython Elamora Pty Ltd	Monitoring Well ID:	GW1
Site Address:	Elamora Hotel	Logged By:	KV/RW
Project:	E3019	Date:	24/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition *		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method		Purge Flow Rate	
Purge Time		Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)		PID (ppm)	
LEL (%)		LEL %	
O2 (%)		O2 (%)	
CO2 (%)		CO2 (%)	
CH4 (%)		CH4 (%)	
Temperature		Temperature	
H2S (ppm)		H2S (ppm)	
Bal (%)		Bal (%)	
Start Time		Start Time	
Relative Pressure (mb)		Relative Pressure (mb)	
Flow Rate (L/H)		Flow Rate (L/H)	

CO
Baro

CO
Baro

* Water in well, unable to test

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Barrython Elanora Pty Ltd	Monitoring Well ID:	GW3
Site Address:	Elanora Hotel	Logged By:	KV/RW
Project:	E3019	Date:	24/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method	GA 5000	Purge Flow Rate	
Purge Time	60	Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.9	PID (ppm)	3.1
LEL (%)	0	LEL %	0
O2 (%)	20.3	O2 (%)	18.7
CO2 (%)	0.1	CO2 (%)	2.1
CH4 (%)	0	CH4 (%)	0
Temperature	-	Temperature	-
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.6	Bal (%)	79.2
Start Time	-	Start Time	-
Relative Pressure (mb)	-0.02	Relative Pressure (mb)	0.07
Flow Rate (L/H)	0.1	Flow Rate (L/H)	0.2
CO	0	CO	6
Baro	1031	Baro	1031

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Boython Elanora Pty Ltd	Monitoring Well ID:	GW2
Site Address:	Elanora Hotel	Logged By:	KV/RW
Project:	E3014	Date:	24/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method	GA 5000	Purge Flow Rate	
Purge Time	60	Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	1.1	PID (ppm)	1.3
LEL (%)	0	LEL %	0
O2 (%)	19.9	O2 (%)	16.8
CO2 (%)	0.1	CO2 (%)	4.6
CH4 (%)	0.0	CH4 (%)	0.0
Temperature	-	Temperature	-
H2S (ppm)	1	H2S (ppm)	0
Bal (%)	80.1	Bal (%)	78.6
Start Time	-	Start Time	-
Relative Pressure (mb)	-0.05	Relative Pressure (mb)	-0.02
Flow Rate (L/H)	0.1	Flow Rate (L/H)	0.5

CO
Baro

CO
Baro

7ppm

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Bonython Elanora Pty Ltd	Monitoring Well ID:	GW1
Site Address:	Elanora hotel	Logged By:	RW
Project:	E3019	Date:	28/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method	GA 5000	Purge Flow Rate	
Purge Time	60	Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	1.1	PID (ppm)	1.4
LEL (%)	0	LEL %	0
O2 (%)	20.6	O2 (%)	2.4
CO2 (%)	0.1	CO2 (%)	10.3
CH4 (%)	0.1	CH4 (%)	0.1
Temperature	-	Temperature	-
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	79.3	Bal (%)	87.2
Start Time	-	Start Time	-
Relative Pressure (mb)	-0.03	Relative Pressure (mb)	0.0
Flow Rate (L/H)	6-2	Flow Rate (L/H)	0.2
CO	0	CO	2
Benz		Benz	

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Bonython Elanora Pty Ltd	Monitoring Well ID:	GW2
Site Address:	Elanora hotel	Logged By:	RW
Project:	E3019	Date:	26/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method	GA 5000	Purge Flow Rate	
Purge Time	60	Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	0.9	PID (ppm)	1.2
LEL (%)	0	LEL %	0
O2 (%)	19.5	O2 (%)	18.4
CO2 (%)	0.1	CO2 (%)	4.6
CH4 (%)	0.0	CH4 (%)	0.0
Temperature		Temperature	
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	80.4	Bal (%)	78.9
Start Time		Start Time	
Relative Pressure (mb)	0.0	Relative Pressure (mb)	-0.05
Flow Rate (L/H)	0.1	Flow Rate (L/H)	16.8

CO 0 CO 4
Baro Baro

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Bonython Elanora Pty Ltd	Monitoring Well ID:	GW3
Site Address:	Elanora Hotel	Logged By:	RW
Project:	E3019	Date:	26/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method	GA 5000	Purge Flow Rate	
Purge Time	60	Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	1.0	PID (ppm)	5.1
LEL (%)	0	LEL %	0
O2 (%)	12.6	O2 (%)	17.4
CO2 (%)	0.0	CO2 (%)	3.4
CH4 (%)	0.0	CH4 (%)	0.0
Temperature		Temperature	
H2S (ppm)	0	H2S (ppm)	0
Bal (%)	80.4	Bal (%)	79.2
Start Time		Start Time	
Relative Pressure (mb)	0.02	Relative Pressure (mb)	0.05
Flow Rate (L/H)	0.3	Flow Rate (L/H)	0.3
CO	1	CO	10
Benzo		Benzo	

Record Checked by:		Document Version:	
Date:		Updated:	

LANDFILL GAS MONITORING RECORD FORM

PROJECT INFORMATION			
Client:	Boughton Elanora Pty Ltd	Monitoring Well ID:	GW2
Site Address:	Elanora Hotel	Logged By:	KV/RW
Project:	E3014	Date:	24/04/23

MONITORING WELL DETAILS			
Depth (m) as constructed			
Well Finish		Co-ordinates	
Condition		Surveyed Levels	

ENVIRONMENTAL CONDITIONS			
Temperature		Wind speed and Direction	
Barometric Pressure		Relative Humidity	
Rainfall (in past 48 hours)		Field Observations	

PURGING			
Purge Method	GA5000	Purge Flow Rate	
Purge Time	60	Pressure Test (Pass/Fail)	

INITIAL FIELD READINGS		STABILISED FIELD READINGS	
PID (ppm)	1.1	PID (ppm)	1.3
LEL (%)	0	LEL %	0
O2 (%)	19.9	O2 (%)	16.8
CO2 (%)	0.1	CO2 (%)	4.6
CH4 (%)	0.0	CH4 (%)	0.0
Temperature	-	Temperature	-
H2S (ppm)	1	H2S (ppm)	0
Bal (%)	80.1	Bal (%)	78.6
Start Time	-	Start Time	-
Relative Pressure (mb)	-0.05	Relative Pressure (mb)	-0.02
Flow Rate (L/H)	0.1	Flow Rate (L/H)	0.5

CO
Baro

CO
Baro

7ppm

Record Checked by:		Document Version:	
Date:		Updated:	

APPENDIX D: CALIBRATION CERTIFICATES

© Foundation Earth Sciences

ThermoFisher SCIENTIFIC

Thermo Fisher Scientific Australia Pty Ltd
ABN 52 058 390 917
5 Caribbean Drive
Scoresby VIC 3179
Phone: 1 300 736 767
Fax: 03 9763 1169

Portable Gas Detector Calibration Report
Service Call: SV2209140099

Customer: Air Met Scientific
Address: 7 – 11 Ceylon Street
Nunawading 3131

Attention: Mee Lan Liew

Item	Test	Fail	Pass	Comments	Qty	Part code	List	Disc.
Battery	NiCd, NiMH, Dry cell, Lead acid, Li Ion		✓					
	Charger, Power supply							
Pump	Flow		✓					
Filter	Filter, fittings etc	✓		Renewed inline filters	2	Misc		
Alarms	Audible, visual, external							
	Alarm code							
Display	Operation		✓					
Switches	Operation		✓					
PCB	Operation		✓					
Connectors	Condition		✓					
Firmware	Version		✓					
Data Logger	Operation							
Case	Condition		✓					
Sensors	Oxygen Lo/Hi OXY		✓	S/n:				
	Toxic 1 Inst/STEL/TWA H_2S		✓	S/n:				
	Toxic 2 Inst/STEL/TWA CO		✓	S/n:				
	Toxic 3 Inst/STEL/TWA CO_2		✓	S/n:				
	LEL Alarm 1, Alarm 2 CH4		✓	S/n:				
	% VOL, PID, IR, other Alarm 1, Alarm 2			S/n:				
Other tests								

Engineers report	Date	Start	Finish	Parts total		
Calibrated and tested unit				Labour		
Renewed inline filters				Calibration Cal 5		
				Travel		
				Freight		
Model: Geotech GA5000 S/N: G505858				Total		

Calibration Certificate

All sensors have been Zeroed prior to calibration. Head span tested to 20% of SPAN gas

Sensor	Type	Serial no/ Date code	D/C	Span Gas	Conc.	Traceability Lot no#	CF	Before		After cal
								Span	Head Span	SPAN
Oxy	AIR			AIR	20.9%	AIR		–	✓	20.9%
Tox 1	H2S			H2S	25ppm	402307010		–		25ppm
Tox 2	CO			CO	100ppm	402307010		–		100ppm
Tox 3	CO2			CO2	40%vol	1485461		–		40%vol
Exp	Flam			CH4	60%vol	1485461		–		60%vol

Calibrated/Repaired by: Stephen Hicks Calibration/Repair date: 19/09/2022 Next due: 19/09/2023

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Gas Calibration Certificate

Instrument MX6
Serial No. 22032JC-005
Sensors **CO, O2, H2S, LEL**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
			Low	High	TWA	STEL
Sensor	Oxygen	✓	19.5%	23.5%	NA	NA
	CO	✓	30ppm	60ppm	30ppm	60ppm
	H2S	✓	10ppm	15ppm	10ppm	15ppm
	LEL Methane	✓	5%	10%	N/A	N/A
Alarms	Beeper	✓				
	Settings	✓				
Software	Version					
Datalogger	Operation	✓				
Download	Operation	✓				
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O2		20.9%	NATA	SY396	20.8%
CO		100ppm	NATA	SY396	103ppm
LEL		50%	NATA	SY396	49.0%
H2S		25ppm	NATA	SY396	25.8ppm

Calibrated by: **Alex Buist**

Calibration date: **18-Apr-23**

Next calibration due: **15-Oct-23**

Gas Calibration Certificate

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Instrument **GA5000**
Serial No. **G508343**
Sensors **CH4, CO2, O2, CO, H2S**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	O2	✓	
	CH4	✓	
	CO2	✓	
	CO	✓	
	H2S	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version		
Datalogger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O2		20.9% Vol O2		Fresh Air	20.9% Vol O2
CH4		60% Vol CH4	NATA	SY483	60% Vol CH4
CO2		40% Vol CO2	NATA	SY483	39.9% Vol CO2
CO		103ppm CO	NATA	SY397	103ppm CO
H2S		25ppm H2S	NATA	SY397	25ppm H2S
CH4		2.5% Vol CH4	NATA	SY397	2.5% Vol CH4

Calibrated by: **Alex Buist**

Calibration date: **8/05/2023**

Next calibration due: **4/11/2023**

Gas Calibration Certificate

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **MX6**
Serial No. **201206R-002**
Sensors **O2, LEL,CO, H2S**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	O2		
	LEL		
	CO		
	H2S		
		✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version		
Datalogger	Operation	✓	
Download	Operation	✓	
Other tests:			

Low	High	TWA	STEL
19.50%	23.5%	N/A	N/A
5.00%	10.00%	N/A	N/A
30ppm	60ppm	30ppm	200ppm
10ppm	15ppm	10ppm	15ppm

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode

Sensor	Serial no	Calibration gas and	Certified	Instrument Reading
O2	N/A Fresh Air	20.9% O2	N/A	20.8% O2
LEL	SY396	50% LEL CH4 (2.5%)	NATA	49%
CO	SY396	103ppm CO	NATA	103ppm
H2S	SY396	24.2ppm H2S	NATA	25.5ppm

Calibrated by: **Alex Buist**

Calibration date: **05-May-23**

Next calibration due: **01-Nov-23**

PID Calibration Certificate

Instrument **PhoCheck Tiger**
Serial No. **T-119104**

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
Pump	Seal	✓	
	Operation	✓	
	Filter	✓	
	Flow	✓	
PCB	Valves, Diaphragm	✓	
Connectors	Condition	✓	
Sensor	PID	✓	10.6 ev
Alarms	Beeper	✓	
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Low	High	TWA	STEL
50ppm	100ppm	10ppm	25ppm

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		97ppm Isobutylene	NATA	SY532		96.9 ppm Isobutylene

Calibrated by: **Izack Muhlbock**

Calibration date: **8-May-23**

Next calibration due: **7-Jun-23**

PID Calibration Certificate

Instrument PhoCheck Tiger
Serial No. T-105867

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	PID	✓	10.6 ev
Alarms	Beeper	✓	Low: 50ppm; High: 100ppm; TWA: ; STEL:
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		97 ppm Isobutylene	NATA	SY532		97.1ppm

Calibrated by: Amanda Neale

Calibration date: 18/04/2023

Next calibration due: 15/10/2023

18/04/2023

Gas Calibration Certificate

Instrument GA5000
Serial No. G505858
Sensors CH4, CO2, O2, CO, H2S

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	O2	✓	
	CH4	✓	
	CO2	✓	
	CO	✓	
	H2S	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version		
Datalogger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O2		20.9% Vol O2		Fresh Air	20.9% O2
CH4		60% CH4	NATA	SY483	60.0% CH4
CO2		40% CO2	NATA	SY483	40.% CO2
CO		103ppm CO	NATA	SY396	103ppm CO
H2S		24ppm H2S	NATA	SY396	24ppm H2S
CH4		2.5% CH4	NATA	SY396	2.5% CH4

Calibrated by: Amanda Neale

Calibration date: 18/04/2023

Next calibration due: 15/10/2023

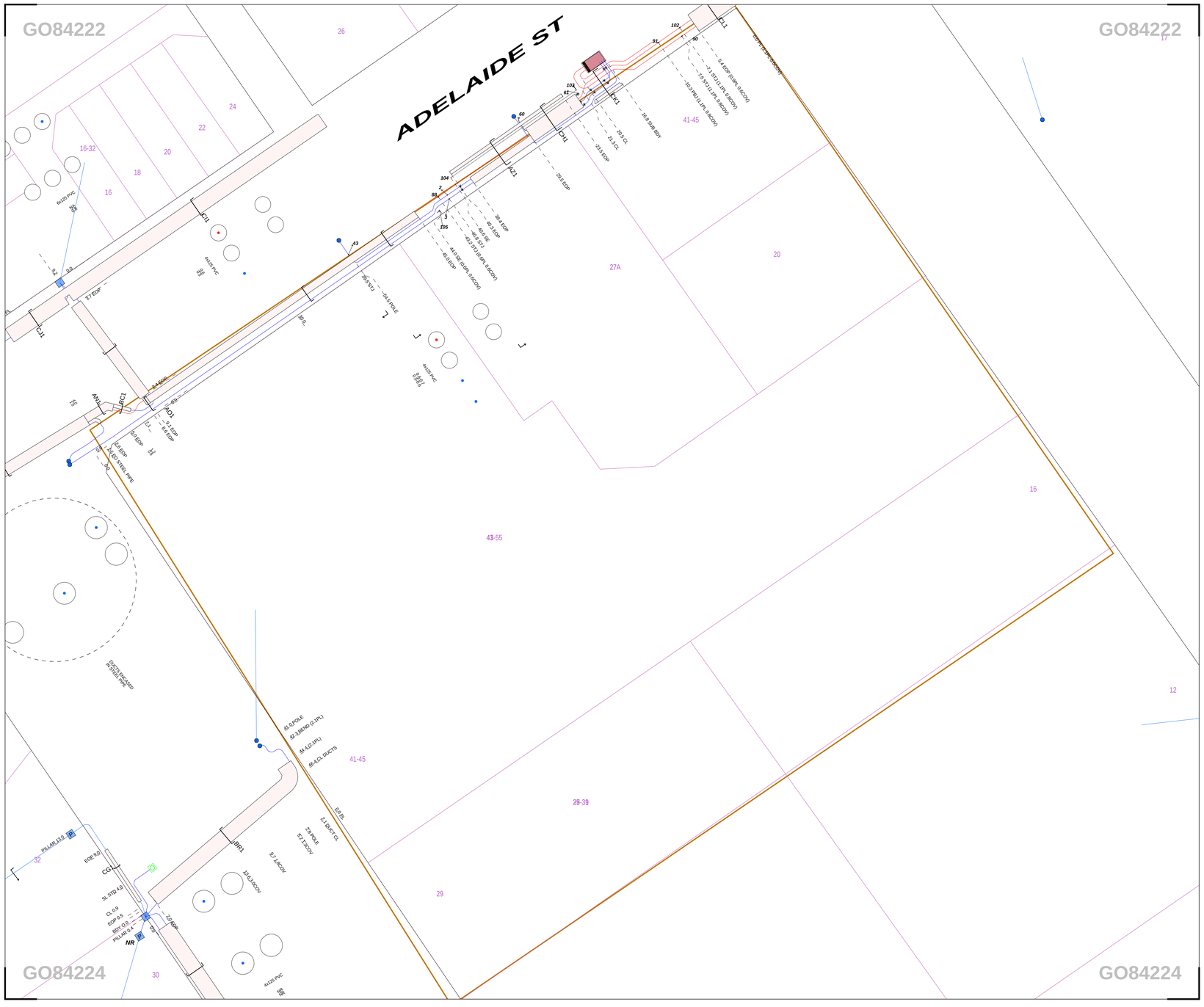
APPENDIX E: DBYD PLANS

© Foundation Earth Sciences

GO842 - AO1

3x125 PVC
0.7
0.5

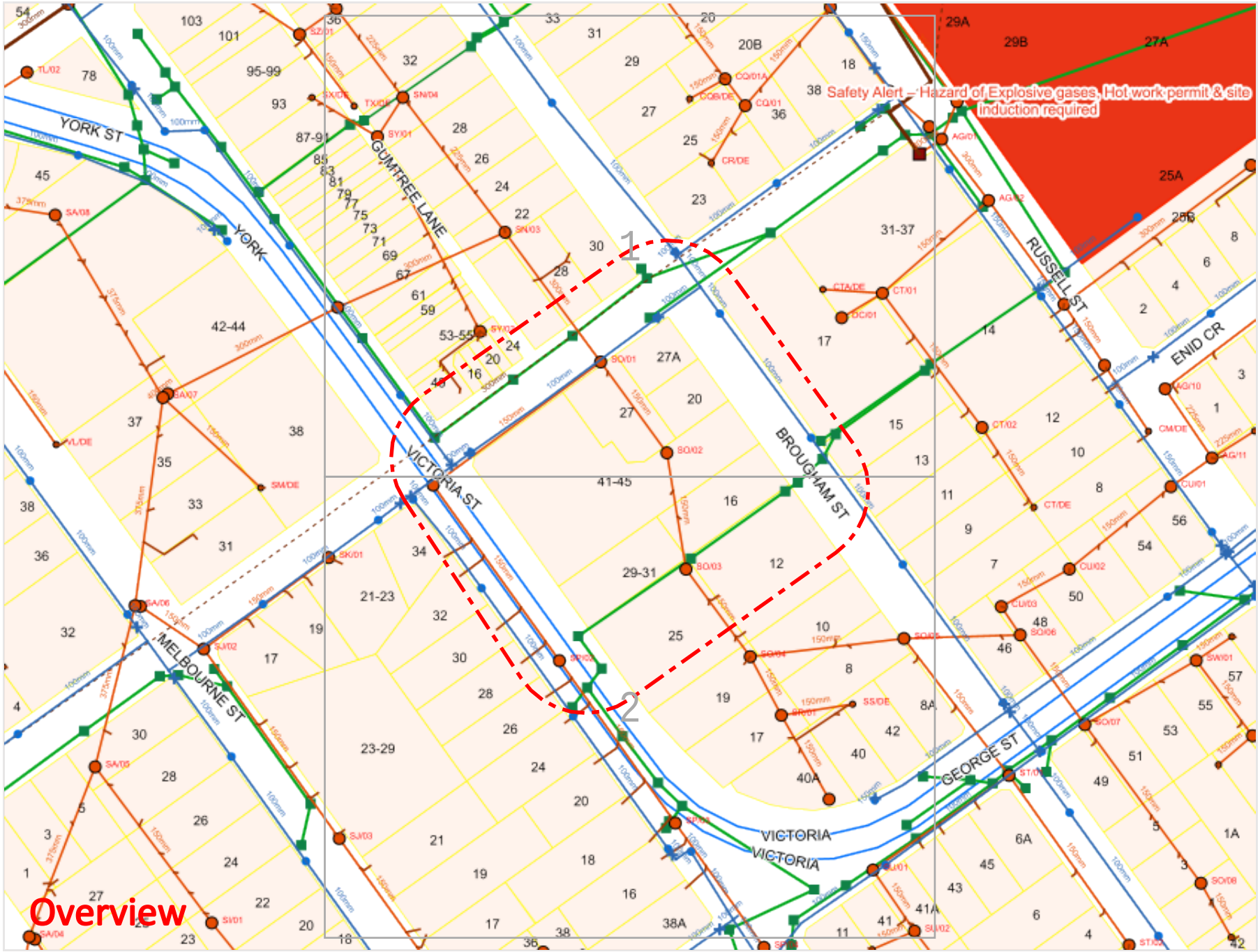
Ref: C4


GO84222
GO84222
ADELAIDE ST
26
24
22
20
18
16
16-32
41-45
27A
20
16
43-55
12
29
29-31
30
41-45
17
CL1
CH1
A21
A11
AN1
AO1
JBR1
4x125 PVC
4x125 PVC
4x125 PVC
4x125 PVC
DUCTS ENCASED IN STEEL PIPE
PILLAR 3.1.0
PILLAR 3.1.4
EDGE N.0
CG
SL-STD 4.0
CL 0.9
EOP 0.5
BDY 0.0
NR
TP
2.0 EOP
0.4 EOP
0.6 EOP
0.6 EOP
0.4 EOP
0.4 EOP
0.4

Central Coast Council

Sequence No: 222927380
Job No: 33916532
Location: 27a Adelaide Street, East Gosford, NSW 2250

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend

- Watermain
- Watermain (Asbestos)
- Watermain - Expired
- Watermain - Expired (Asbestos)
- Water Valve
- Watermain - Recycled
- Water Hydrant
- Sewer Service Connection
- Sewer Pressure Main
- Sewer Pressure Main- Expired
- Sewer Network Structures
- Sewer Maintenance Hole
- Sewer Dead End
- Sewer Lamphole
- Sewer Gravity Main
- Sewer Gravity Main (Asbestos)
- Sewer Gravity Main - Expired
- Drainage Pit
- Drainage Pipe
- Drainage Pipe - Expired
- Drainage Culverts
- Drainage Culverts - Expired

N

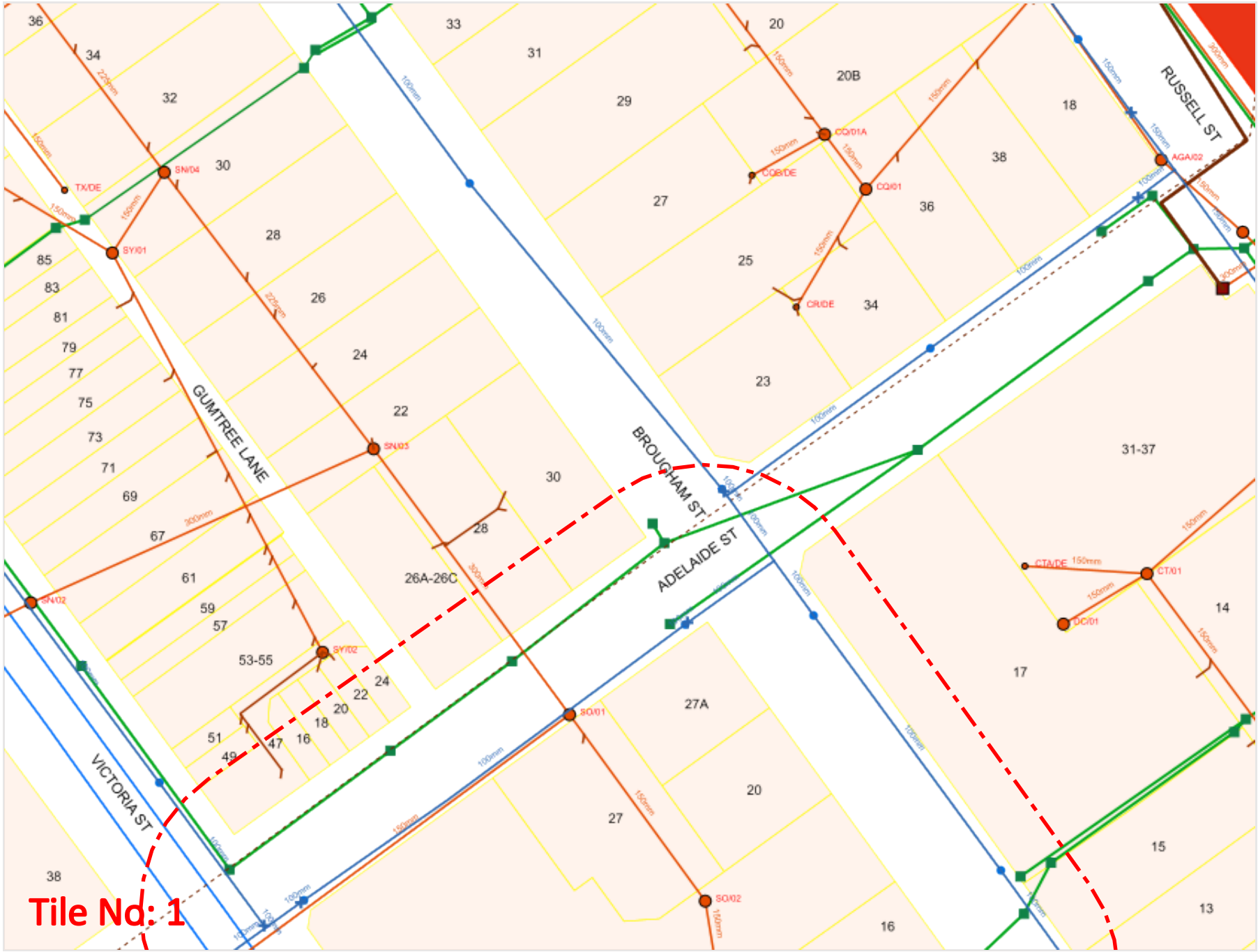
Scale: 1:2050
Expires: 27 Apr 2023

DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Central Coast Council nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

Central Coast Council

Sequence No: 222927380
Job No: 33916532
Location: 27a Adelaide Street, East Gosford, NSW 2250

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend

- Watermain
- Watermain (Asbestos)
- Watermain - Expired
- Watermain - Expired (Asbestos)
- Water Valve
- Watermain - Recycled
- Water Hydrant
- Sewer Service Connection
- Sewer Pressure Main
- Sewer Pressure Main- Expired
- Sewer Network Structures
- Sewer Maintenance Hole
- Sewer Dead End
- Sewer Lamphole
- Sewer Gravity Main
- Sewer Gravity Main (Asbestos)
- Sewer Gravity Main - Expired
- Drainage Pit
- Drainage Pipe
- Drainage Pipe - Expired
- Drainage Culverts
- Drainage Culverts - Expired

N

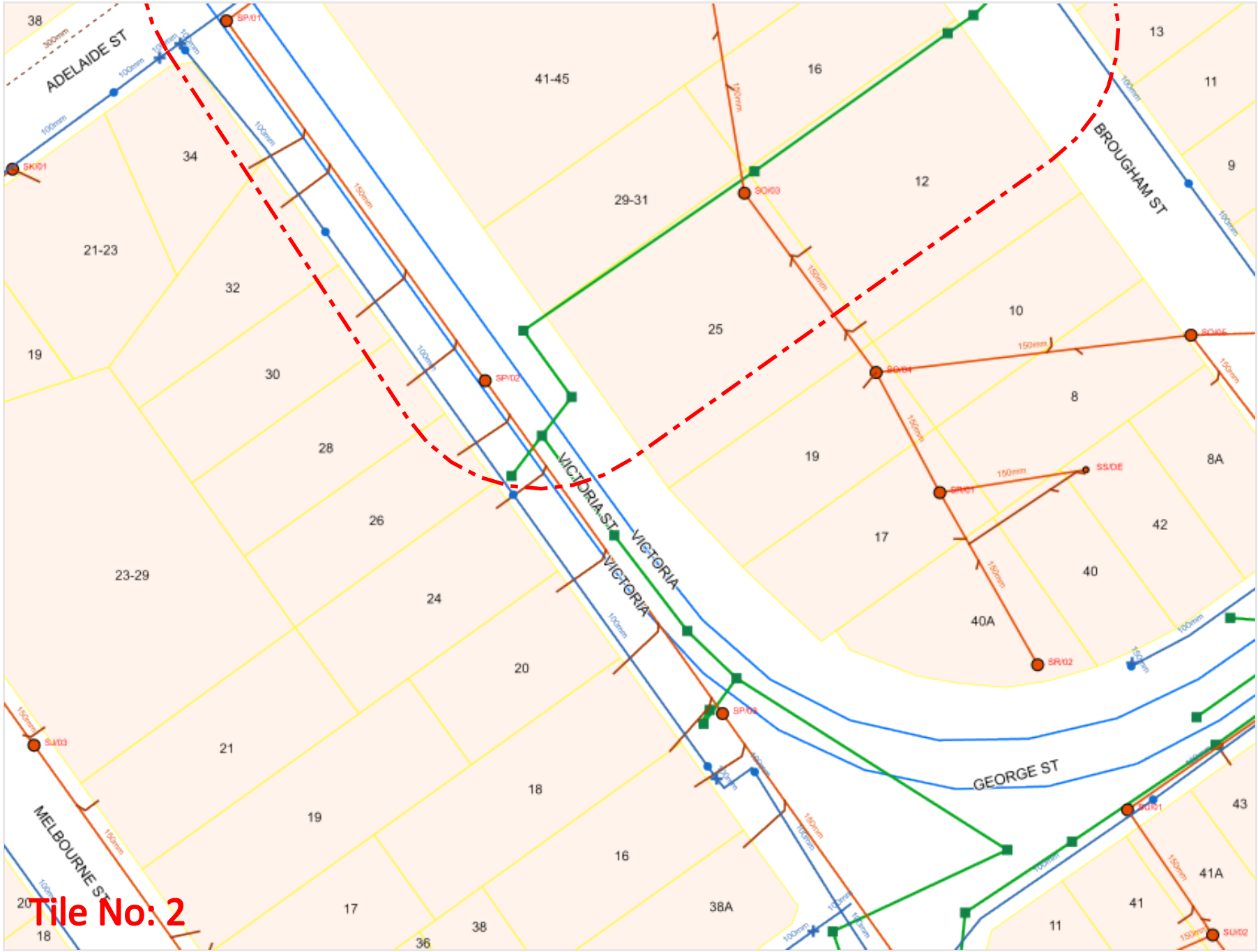
Scale: 1:1000
Expires: 27 Apr 2023

DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Central Coast Council nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

Central Coast Council

Sequence No: 222927380
Job No: 33916532
Location: 27a Adelaide Street, East Gosford, NSW 2250

DIAL BEFORE YOU DIG www.1100.com.au
The Essential First Step.



Legend

- Watermain
- Watermain (Asbestos)
- Watermain - Expired
- Watermain - Expired (Asbestos)
- Water Valve
- Watermain - Recycled
- Water Hydrant
- Sewer Service Connection
- Sewer Pressure Main
- Sewer Pressure Main- Expired
- Sewer Network Structures
- Sewer Maintenance Hole
- Sewer Dead End
- Sewer Lamphole
- Sewer Gravity Main
- Sewer Gravity Main (Asbestos)
- Sewer Gravity Main - Expired
- Drainage Pit
- Drainage Pipe
- Drainage Pipe - Expired
- Drainage Culverts
- Drainage Culverts - Expired

N

Scale: 1:1000
Expires: 27 Apr 2023

DISCLAIMER: While reasonable measures have been taken to ensure the accuracy of the information contained in this plan response, neither Central Coast Council nor PelicanCorp shall have any liability whatsoever in relation to any loss, damage, cost or expense arising from the use of this plan response or the information contained in it or the completeness or accuracy of such information. Use of such information is subject to and constitutes acceptance of these terms.

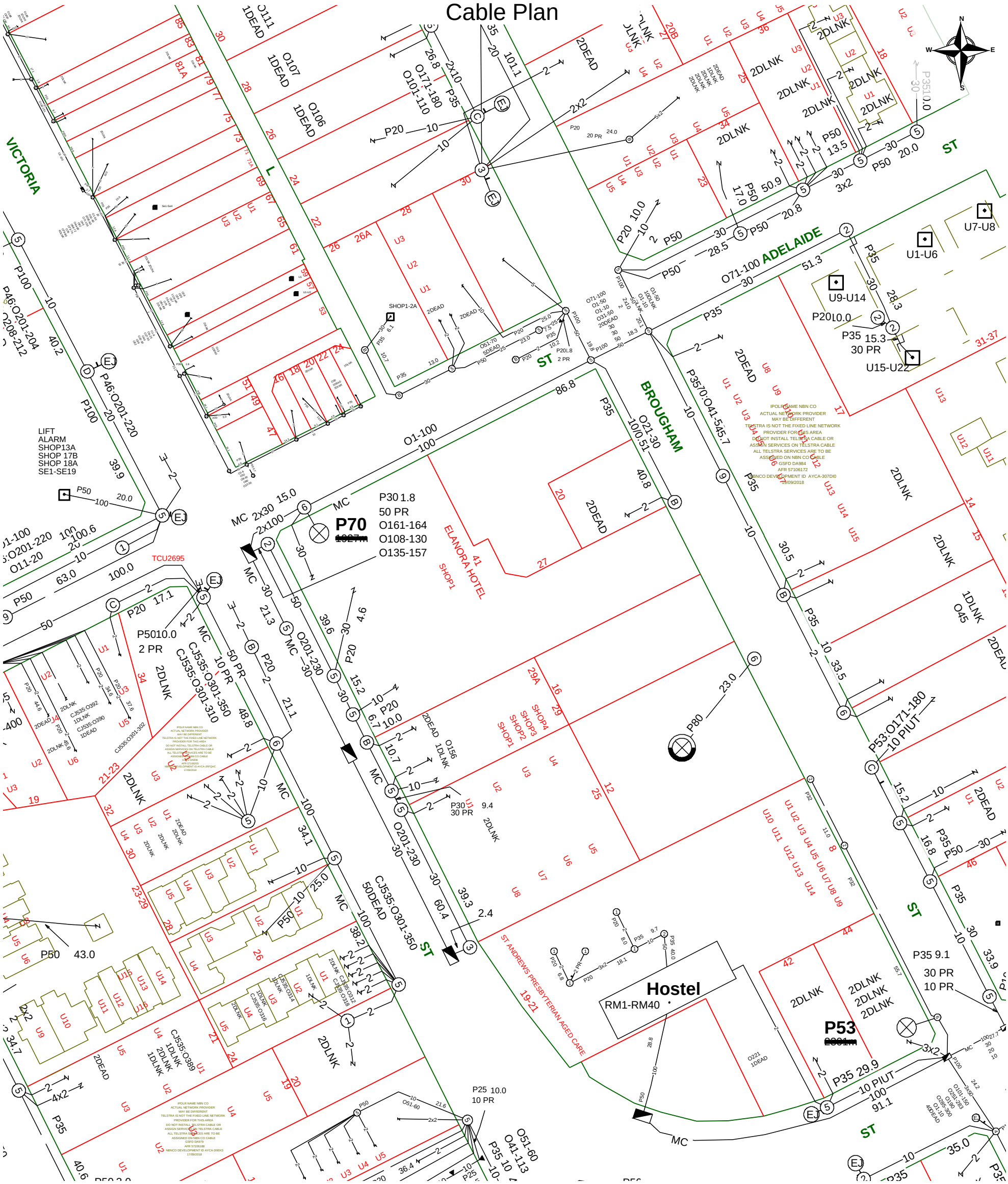
WARNING: This document is confidential and may also be privileged. Confidentiality nor privilege is not waived or destroyed by virtue of it being transmitted to an incorrect addressee. Unauthorised use of the contents is therefore strictly prohibited. Any information contained in this document that has been extracted from our records is believed to be accurate, but no responsibility is assumed for any error or omission. Optus Plans and information supplied are valid for 30 days from the date of issue. If this timeline has elapsed, please raise a new enquiry.

Sequence Number: 222927377

Date Generated: 30 Mar 2023

For all Optus DBYD plan enquiries –
Email: Fibre.Locations@optus.net.au
For urgent onsite assistance contact 1800 505 777
Optus Limited ACN 052 833 208

Cable Plan



Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment Ph - 13 22 03 Email - Telstra.Plans@team.telstra.com Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries	Sequence Number: 222927383
TELSTRA LIMITED A.C.N. 086 174 781	Please read Duty of Care prior to any excavating
Generated On 30/03/2023 09:03:26	

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

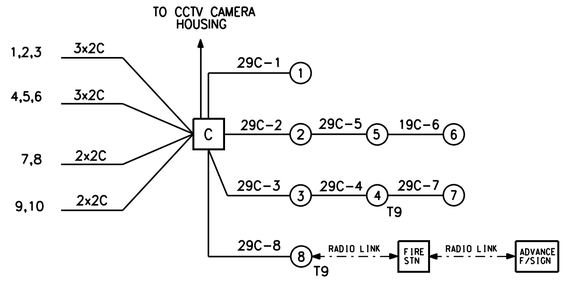
WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.
As such,Telstra supplied location information is indicative only.Spatial accuracy is not applicable to Quality Level D.
Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.
Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.
A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.

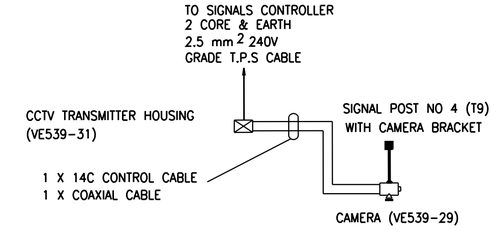
DRAWN BY CADD
DO NOT AMEND MANUALLY

0336.184.VV.2695

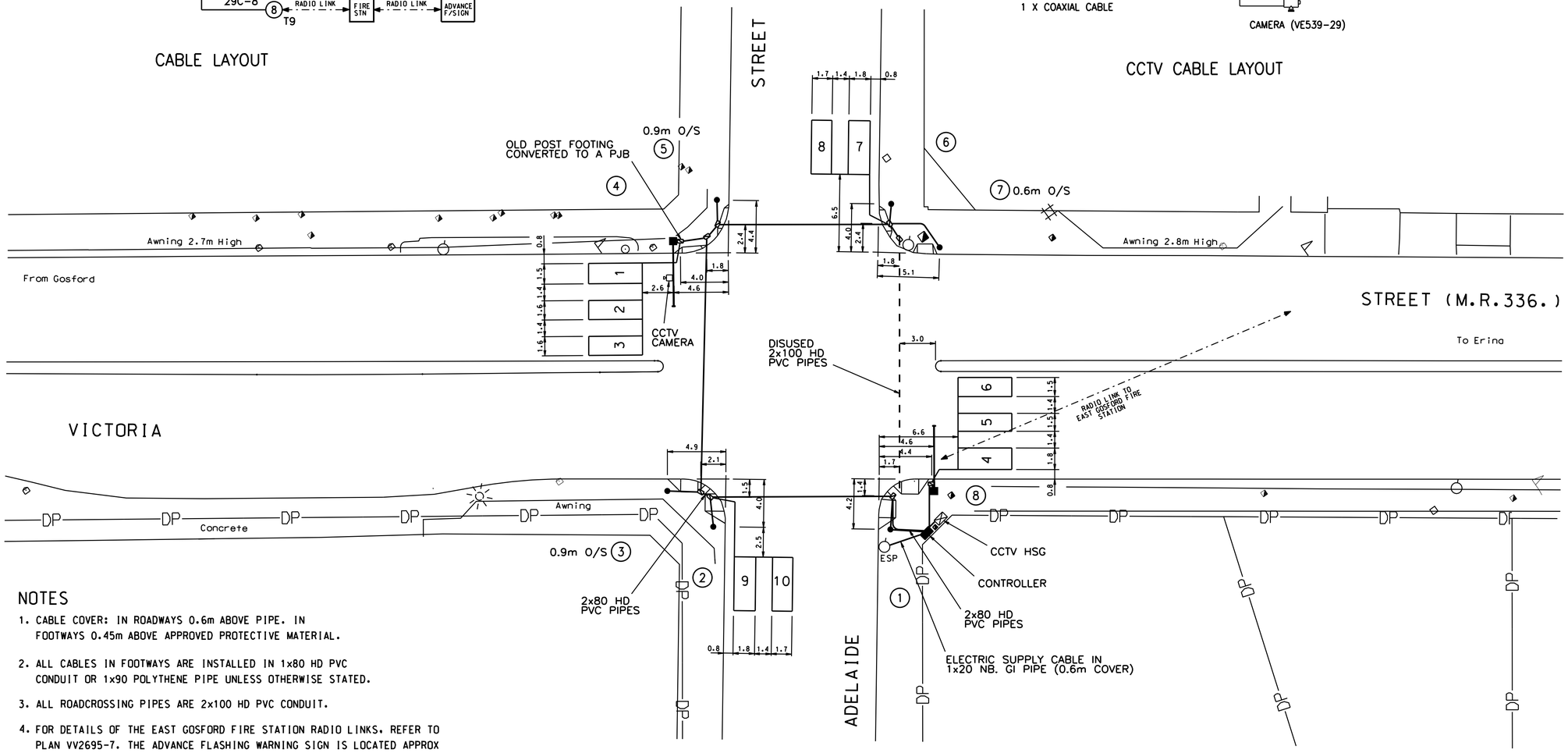
Transport Roads & Maritime Services
NSW GOVERNMENT



CABLE LAYOUT



CCTV CABLE LAYOUT



NOTES

1. CABLE COVER: IN ROADWAYS 0.6m ABOVE PIPE. IN FOOTWAYS 0.45m ABOVE APPROVED PROTECTIVE MATERIAL.
2. ALL CABLES IN FOOTWAYS ARE INSTALLED IN 1x80 HD PVC CONDUIT OR 1x90 POLYTHENE PIPE UNLESS OTHERWISE STATED.
3. ALL ROADCROSSING PIPES ARE 2x100 HD PVC CONDUIT.
4. FOR DETAILS OF THE EAST GOSFORD FIRE STATION RADIO LINKS. REFER TO PLAN VV2695-7. THE ADVANCE FLASHING WARNING SIGN IS LOCATED APPROX 300m EAST OF TCS-2695 ON THE ENTRANCE RD.

A	ORIGINAL ISSUE	
'B' ISSUE:-HR333.592 POST POSITIONS REVISED. CABLE LAYOUT REVISED. CCTV CAMERA ADDED. WAE. LC/AR 15/05/09.		
'C' ISSUE WAE. PED'S AND DET'S RENUMBERED. IH LC	J/1 HR997	10-02-2014

REFERENCE PLANS	
Symbols & Abbreviations	VD003-6
Standard Positioning	VD001-5
Presence Detectors	VC005-17
Det Schedule Explanation	VD018-7
Type 2 Posts	VM202-1
Type 9 Posts	VM215-1
Design Layout	VV2695-4
Wiring Chart	VV2695-6

SURVEYOR	R.W.GALTON
DATE	4-7-85
FLD DATA	0336.184.FB.2903
Map Reference	Map29 J-45
Designed	LC. 13/07/06
Checked	MM. 17/07/06
RECOMMENDED	

APPROVED
CON SHAKAS
TRAFFIC ENG. TECH. MANAGER
DATE 18/07/06

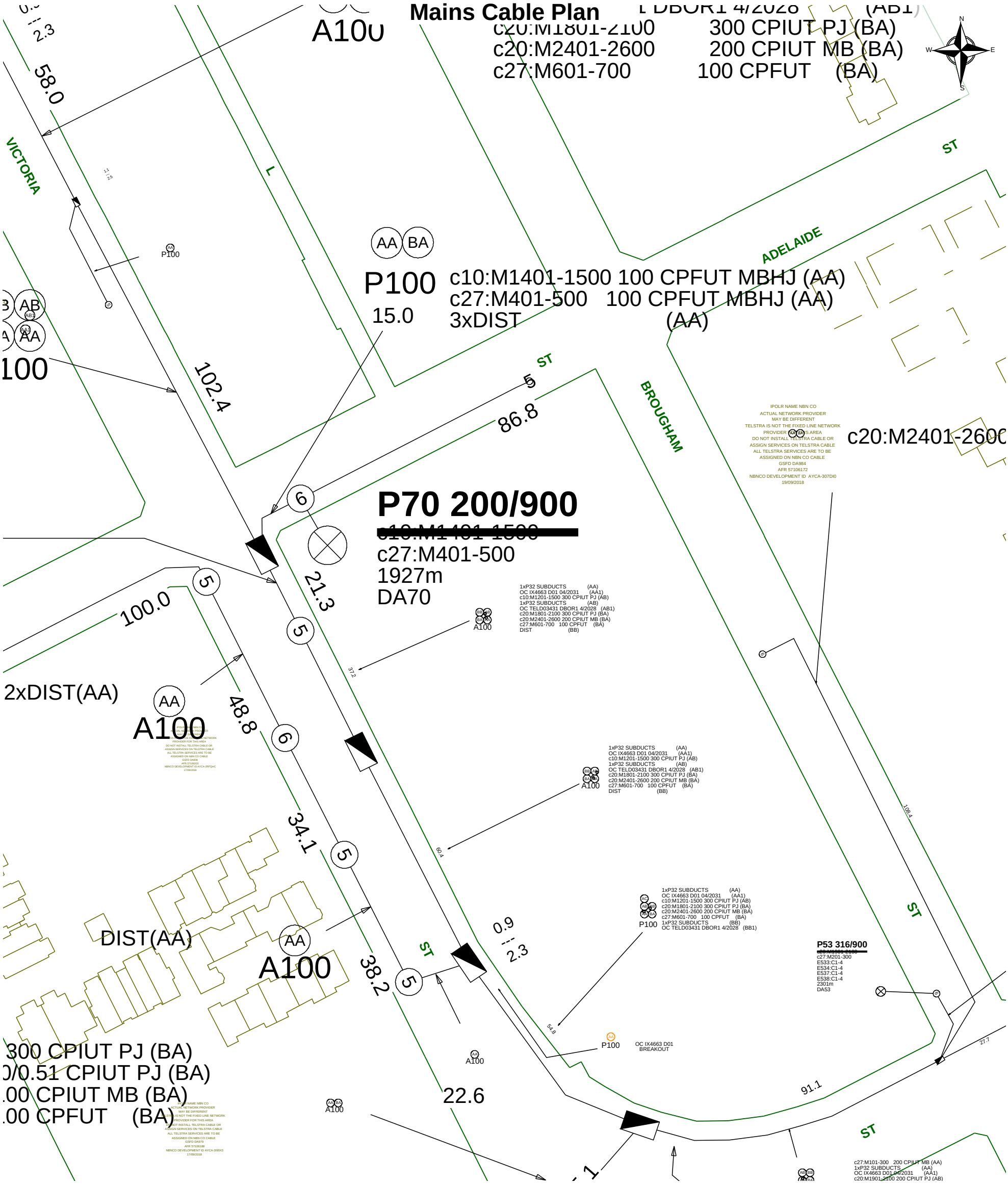
ROADS AND MARITIME SERVICES

CITY OF GOSFORD M.R.336.
INTERSECTION OF VICTORIA STREET AND ADELAIDE STREET
EAST GOSFORD

CABLE INSTALLATION T.C.S. N 2695

REGION: HUNTER			SUPERSEDES
FILE No. 184.TS.124	No. OF SHEETS -	SHEET No. 5	2
SCALE 1:200			ISSUE A B C

REG. No. 0336.184.VV.2695



Report Damage: https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment
Ph - 13 22 03
Email - Telstra.Plans@team.telstra.com
Planned Services - ph 1800 653 935 (AEST bus hrs only) General Enquiries

TELSTRA LIMITED A.C.N. 086 174 781

Generated On 30/03/2023 09:03:28

Sequence Number: 222927383

Please read Duty of Care prior to any excavating

WARNING
Telstra plans and location information conform to Quality Level "D" of the Australian Standard AS 5488-Classification of Subsurface Utility Information.
As such,Telstra supplied location information is indicative only.Spatial accuracy is not applicable to Quality Level D.
Refer to AS 5488 for further details. The exact position of Telstra assets can only be validated by physically exposing it.
Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy.
Further on site investigation is required to validate the exact location of Telstra plant prior to commencing construction work.
A Certified Locating Organisation is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works.

See the Steps- Telstra Duty of Care that was provided in the email response.

APPENDIX F: SITE PHOTOGRAPHS

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SITE PHOTOGRAPHS

Client:	Bonython Elanora Pty Ltd
Project:	Hazardous Ground Gas Assessment
Site Location:	Elanora Hotel
Job No.:	E3019

FOUNDATION EARTH SCIENCES

Photo 1

View of buildings near Adalaide street
Looking North-East
Inspected 31.03.2023

Photo 2

Veiw of the bottlemart next to the eleanora hotel
Looking South West
Inspected 31.03.2023

Photo 3

View of paved area on the northeast side of the Elanora hotel
Looking North-West
Inspected 31.03.2023

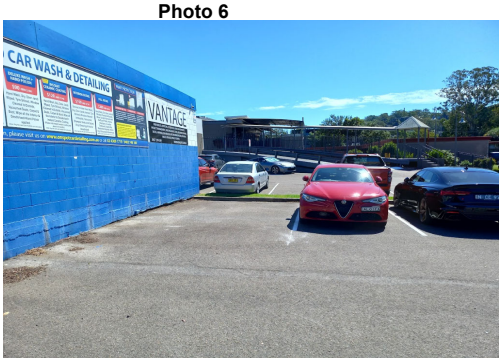
Photo 4

View of Elanora hotel carpark
Looking East
Inspected 31.03.2023

Photo 5

View of access road east side of elanora hotel
Looking South West
Inspected 31.03.2023

Photo 6



View of Elanora hotel carpark next to carwash.
Looking North West
Inspected 31.03.2023

APPENDIX P: SAFEWORK RECORDS

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FOUNDATION EARTH SCIENCES

Michael Silk <michael@foundationes.com.au>

Fwd: SafeWork NSW: 00822439 –Site Search application – Result found [ref:_00D281hl6J._500Mn4AfZ4:ref]

1 message

Khy Veivers <khy@foundationes.com.au> 9 May 2023 at 09:07
To: Ben Buckley <ben@foundationes.com.au>, Michael Silk <michael@foundationes.com.au>

Hi,
E3019 East Gosford Safework results,
Regards

---------- Forwarded message ---------
From: **Licensing** <licensing@safework.nsw.gov.au>
Date: Mon, 8 May 2023 at 08:22
Subject: SafeWork NSW: 00822439 –Site Search application – Result found [ref:_00D281hl6J._500Mn4AfZ4:ref]
To: khy@foundationes.com.au <khy@foundationes.com.au>

Batch 1 44 Victoria.pdf
Batch 2 44 Victoria.pdf
LICENSING - Gosford East 44 Victoria St - Site Plans.tr5

Security Classification: Sensitive Personal
Please do not amend the subject line of this email

Dear Khy

Re: Site Search for Schedule 11 Hazardous Chemicals on premises Application – Result found

I refer to your application for a Site Search for Schedule 11 Hazardous Chemicals on premises, received by SafeWork NSW on 30/03/2023 for the following site: Victoria St, Adelaide St and Brougham St, East Gosford, NSW.

Please find attached copies of the documents that SafeWork NSW holds on record number 35/012702 relating to the storage of Hazardous Chemicals at the above-mentioned premises.

If you have any further information or if you have any questions, please use one of the following options, quoting the SafeWork NSW enquiry reference number: 00822439

- Email: licensing@safework.nsw.gov.au
- Phone: 13 10 50

Kind regards

Kim Brearley
Licensing Representative
SafeWork NSW | Better Regulation Division
Department of Customer Service
p- 13 10 50
e- licensing@safework.nsw.gov.au | www.customerservice.nsw.gov.au
Level 3, 32 Mann Street, Gosford, NSW 2250

We are always looking for ways that we can improve our services. You may be contacted by email in the next few weeks to complete a short survey and provide us with your feedback on what we did well and where we can improve. If you do not wish to participate in our surveys, please email us at: licensingQA@customerservice.nsw.gov.au and we will ensure that you are not contacted.

ref:_00D281hl6J._500Mn4AfZ4:ref

--
Khy Veivers
Foundation Earth Sciences
Civil & Geotechnical Engineer
0409 784 783

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