Preliminary Desktop Site Investigation - Contamination

Gillieston Public School Redevelopment and New Public Preschool.

Report Date

24/01/2025

Prepared for:

Department of Education

Prepared by:

Callum Laker

School Name	Gillieston Public
School ID	1982
School Address	100 Ryans Road (Lot 51 DP1162489), 19 Northview Street (Lot 2 DP1308605), Gillieston Heights, NSW, 2321
School Region	Hunter and Central Coast NSW
Company Name	Stantec Australia Pty Ltd
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SITE CONTAMINATION ASSESSMENT
GILLIESTON PUBLIC SCHOOL AND NEW PUBLIC PRESCHOOL

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Prepared by _____
(signature)
Callum Laker, Senior Environmental Scientist

Reviewed by _____
(signature)
Mitch Blencowe, Principal Environmental Scientist (CEnvP)

Approved by _____
(signature)
Sam Levi, Senior Principal Environmental Scientist (CEnvP SC)

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Activity

The Gillieston Public School have been identified by the NSW Department of Education (DoE) as requiring redevelopment. The proposed redevelopment of Gillieston Public School is driven by service need including increase in expected student enrolments and the and removing demountable structure and replacement with permanent teaching spaces.

The activity comprises the following:

- Demolition and removal of existing temporary structures.
- Site preparation activity, including demolition, earthworks, tree removal.
- Construction of new:
  - 32 permanent general learning spaces and 3 support teaching spaces
  - Administration and staff hubs
  - Hall, canteen and library
  - Out of school hours care
  - Public preschool (standalone building for 60 places)
  - Covered Outdoor Learning Areas (COLAs)
  - Outdoor play areas, including games courts and yarning circle
  - New at-grade car parking
  - Extension of the existing drop-off / pick-up area and new bus bay
  - Realignment of the existing fencing
  - Associated stormwater infrastructure upgrades
  - Associated landscaping
  - Associated pedestrian and road upgrade activity

Executive Summary

Stantec Australia Pty Ltd (Stantec) was engaged by Department of Education (DOE) to complete a Preliminary Desktop Site Investigation - Contamination (PDSIC) Report for Gillieston Public, located at the corner of Northview Street and Ryans Road, Gillieston Heights, NSW and legally identified as Lot 51 DP 1162489 (the site). At the time of preparing this report, this was the site assessed, however it is noted that the REF site boundary also includes Lot 2 DP1308605, located at 19 Northview Street.

DOE are in the process of developing planning approval requirements, the proponent is required to undertake a Preliminary Desktop Site Investigation – Contamination (PDSIC), to determine the suitability of the land for the proposed land use(s) (pre-kindy school). The primary objectives of this investigation were therefore to preliminarily evaluate the potential for site contamination to be present based on the historical land use, desktop searches and an intrusive investigation.

Upon completion of the agreed scope of works the following was concluded:

- Gillieston Public is proposed for land use as pre-kindy and K-6 school. While the activity plans are still being finalised, this investigation was undertaken to preliminarily identify potential contamination and aid in determining suitability of the site.
- Based on the desktop review of available documentation, the documented site history and land use of the Gillieston Public site and immediate surrounding appeared to have been used for educational purposes by ownership since at least 1898. The use of the site for educational purposes has continued to date. The site has undergone progressive activity throughout the studied history, with the staged construction of current school infrastructure, noting that many of the current school buildings are temporary demountable buildings rather than permanent buildings, the most recent of which was added in late 2022. The surrounding land for the most part has not gone through significant changes and modifications during the assessed history, except for the south-east which has been developed with residences.
- Specific activities of relevance to potential contamination that appear to have occurred on site include demolition and filling.
- The site was not subject to regulation by the NSW EPA and was found to be free of statutory notices and licencing agreements under both the CLM Act 1997 and PoEO Act 1997 and was not included on the List of NSW Contaminated Site.
- Based on review of supplied asbestos building materials register asbestos has been identified in external features in Buildings A and D. Potential exists for further unidentified asbestos in soil in proximity with these structures associated with historical demolition work and poor construction and maintenance practices.

Based on the findings of this assessment and with reference to the purpose and objectives of this investigation, the following recommendations were made:

- Prior to any demolition activities all buildings and structures should first be subjected to a hazardous building material assessment to ensure the appropriate management of such materials. Following demolition and removal of building waste, and subject to asbestos clearance

inspections, an appropriate level of investigation and waste classification should be undertaken for soils underlying demolition areas.

- The tested contaminants of concern analysed were found to be below the human health, ecological criteria and Management Limits screening criteria in this area, with the exception of lead, zinc, nickel, asbestos and TRH F3: C16-C34.
- The asbestos containing material was limited to one (1) excavation location (HA331) which was located adjacent east of Building D. Asbestos fragments have been identified in the subfloor and building eaves of Building D in the southern side of the building, the fragment may be associated with this previously identified asbestos.
- TRH F3: C16-C34 concentration exceed ecological criteria in the primary sample, field duplicate and field triplicate samples taken at BH15_0.2. A follow up silica gel clean-up analysis procedure was undertaken by the laboratory for sample BH15_0.2 and results were reported below the adopted site criteria. The initial exceedance appeared to be derived from organic hydrocarbons, not synthetic hydrocarbons and thus does not seem to pose a risk to human or ecological health.
- Tap water from garden taps around Building D (around the lead impacted soil) was found not to contain metals at concentrations above human health or ecological criteria for total lead or total zinc.
- The lateral and vertical extent of the asbestos, lead, zinc and nickel has been sufficiently delineated using the data gap investigations and found to be limited to the areas in the north-western portion of the site surrounding Building D.
- Based on the findings of this assessment and with reference to the proposed activity, Stantec recommends the development of:
  - A Remediation Action Plan (RAP) and/or Human Health and Ecological Risk Assessment (HHERA) for the site;
  - The preparation of waste classification assessments (as required); and
  - Site validation report to inform the site remediation work and future site development plans.

Abbreviations

ACM	Asbestos Containing Material
AST	Above Storage Tank
BoM	Bureau of Meteorology
BTEX	Benzene, toluene, ethylbenzene and xylenes
CBD	Central Business District
CLM	Contaminated Land Management
CSM	Conceptual Site Model
DBYD	Dial Before You Dig
DCP	Development Control Plan
DQI	Data Quality Indicators
DQO	Data Quality Objectives
EIL	Ecological Investigation Level
EPA	Environmental Protection Authority
ESL	Ecological Screening Level
HIL	Health Investigation Level
HSL	Health Screening Level
km	kilometres
LEP	Local Environmental Plan
LGA	Local Government Authority
LOR	Limit of Reporting
m	metres
mAHD	metres Australian Height Datum
mBGL	metres Below Ground Level
NATA	National Associated Testing Authority
NEMP	National Environmental Management Plan
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NSW	New South Wales
OCP	Organochlorine Pesticides
OEH	Office of Environment and Heritage
OPP	Organophosphorus Pesticides
PACM	Potentially Asbestos Containing Material
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PID	Photoionization Detector
PoEO	Protection of the Environment Operations
Ppm	parts per million
QA/QC	Quality Assurance / Quality Control
RL	Reduced Level
RPD	Relative Percentage Difference
SEPP	State Environmental Planning Policies

SPR	Source – Pathway - Receptor
SWL	Static / Standing Water Level
SWMS	SafeWork Method Statement
TfNSW	Transport for New South Wales
TRH	Total Recoverable Hydrocarbons
UST	Underground Storage Tanks
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

Stantec Australia Pty Ltd (Stantec) was engaged by Department of Education (DoE) to complete a Preliminary Desktop Site Investigation Contamination (PDSIC) for Gillieston Public School, located at the corner of Northview Street and Ryans Road, Gillieston Heights, NSW and legally identified as Lot 51 DP 1162489 (the site). At the time of preparing this report, this was the site assessed, however it is noted that the REF site boundary also includes Lot 2 DP1308605, located at 19 Northview Street.

The site location is depicted on **Figure 1** and the site layout shown on **Figure 2** of **Appendix A**.

The scope of work for this investigation was completed in accordance with work order DDWO03878/22.

1.1 BACKGROUND AND PROPOSED ACTIVITY

Gillieston Public is located in the Hunter region NSW, suburb of Gillieston Heights, which is within the Maitland LGA. It is bordered by Gillieston Road to the north, Ryans Road to the west, Northview Road to the south and is surrounded primarily by open space and agricultural land, with one residence to the north and a low-density residential area to the south/south-east as shown on **Figure 2** of **Appendix A**.

At the time of preparing this report, it is understood that DoE are currently assessing two options for the proposed activity.

- Option 1:
  - 2 storey General Learning Hub with 12 GLS
  - 12 GLS over admin and library
  - Library, Hall and Admin and Staff Hub on southern boundary with carpark access
  - Learning Support spaces included in GLS
  - Carpark and kiss n drop on eastern boundary. Total cars required for the activity likely to be accommodated onsite
  - Bus bay on Gillieston Road
  - Pre-K located on western side of school attached to existing heritage building
  - Future link to neighbouring development ring-road
- Option 2:
  - 2 storey General Learning Hub with 24 GLS
  - 12 GLS over admin and library
  - 3 SLS
  - Library, Hall and Admin and Staff Hub on southern boundary with carpark access
  - Learning Support spaces included in GLS
  - Carpark and kiss n drop on eastern boundary. Total cars required for development likely to be accommodated onsite
  - Bus bay on Gillieston Road
  - Pre-K located on western side of school attached to existing heritage building
  - Future link to neighbouring development ring-road

1.2 OBJECTIVES

DoE are in the process of developing planning approval requirements, the proponent is required to undertake a Preliminary Desktop Site Investigation - Contamination (PDSIC), to determine the suitability of the land for the proposed land use(s) (pre-kindy school). The primary objectives of this investigation were therefore to preliminarily evaluate the potential for site contamination to be present based on the historical land use, desktop searches and an intrusive investigation.

1.3 SCOPE OF WORKS

The scope of works carried out to meet the objectives (outlined above in **Section 1.2**) of this investigation is summarised below:

1.3.1 Preliminary Contamination Assessment with Limited Sampling

The PDSIC investigation works included:

- A desktop study site history review including the following sources:
  - NSW Environment Protection Authority (EPA) contaminated land public register and the Public Register under Section 308 of the Protection of the Environment Operations Act 1997;
  - Local and regional geology, hydrogeology, topography and hydrology maps;
  - Groundwater data available for the area;
  - Historic aerial photographs;
  - Current and historic land title information;
  - Services and utilities plan review; and
  - Section 10.7 planning certificate.
- A site walkover by an experienced environmental geoscientist and contaminated lands professional to identify potential sources of contamination;
- Environmental sampling in conjunction with a geotechnical investigation, twenty-eight (28) boreholes were advanced using a Massenza MI2 drill rig (BH01 to BH28) within the site to provide coverage and assess for potential contamination.
  - Boreholes were advanced to a maximum target depth of 1.8 m below ground level (mBGL) or prior refusal.
- Soil sampling at near-surface, 0.5 mBGL and every half meter thereafter at each sampling point, or when a change in strata was observed;
- Site observations for visual aesthetic qualities and olfactory indicators of potential contamination including sheen, staining, discolouration, odour and inclusions of anthropogenic materials such as fragments of plastic, tile, glass, metal, bricks or other foreign material.
- Quality Assurance and Quality Control sampling and analysis at NATA Accredited laboratories;
- Preparation of a Preliminary Desktop Site Investigation - Contamination Report; and
- Preparation of a supplementary data gap investigation based on the preliminary soil investigation findings.

1.3.2 Data Gap Investigation

Data Gap Investigation (DGI) including:

- An additional, extensive site walkover by an experienced environmental geoscientist and contaminated lands professional to investigate potential sources of contamination and areas of potential environmental concern identified in the preliminary site contamination assessment;
- A total of fifty-one (51) hand augers were advanced over three days of investigation within the site to provide coverage and assess for potential contamination.
  - HA101 to HA116 were advances on 25 January 2023
  - HA201 to HA204 were advanced on 3 February 2023
  - HA301 to HA331 were advanced on 10 February 2023
  - Hand augers were advanced to a maximum target depth of 0.3 mBGL or prior refusal.
- Soil samples were collected at near-surface and at 0.3 mBGL at each sampling point, or when a change in strata was observed;
- Soils were assessed for visual aesthetic qualities and olfactory indicators of potential contamination including sheen, staining, discolouration, odour and inclusions of anthropogenic materials such as fragments of plastic, tile, glass, metal, bricks and other foreign material.
- Select primary soil samples and intra-laboratory duplicates were submitted to SGS Australia, a National Associated Testing Authority, Australia (NATA) Accredited laboratory for analysis of a broad suite of contaminants. Inter-laboratory duplicates were provided to Eurofins MGT Services for analysis, also a NATA Accredited laboratory, to satisfy quality assurance / quality control requirements; and
- Preparation of this PDSIC report in general accordance with the *Consultants Reporting on Contaminated Land* (NSW EPA, 2020) and the *National Environment Protection (Assessment of Site Contamination) Measure* (1999).

1.4 LEGISLATION AND GUIDELINES

The scope of the assessment has been developed in general accordance with the following guidelines and legislation:

- ASSMAC Acid Sulfate Soils Assessment Guidelines, Acid Sulfate Soils Management Advisory Committee, August 1998 (ASSMAC 1998)
- NEPC National Environment protection (Assessment of Site Contamination) Measure 1999. National Environmental Protection Council (NEPC 2013)
- NSW Department of Urban Affairs and Planning (2021) Managing Land Contamination: Planning Guidelines: SEPP Hazards and Resilience, 2021 (SEPP 55)
- NSW EPA Consultants Reporting on Contaminated Land: Contaminated Land Guidelines. New South Wales Environment Protection Authority, April 2020, Updated May 2020 (NSW EPA 2020)
- NSW EPA Sampling design part 1 - application. New South Wales Environment Protection Authority (EPA), August 2022;
- NSW EPA Sampling design part 2 - interpretation. New South Wales Environment Protection Authority (EPA), August 2022;
- Guidelines for Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, Western Australia Department of Health (WA DOH). 2009

2.0 SIGNFICANCE OF ENVIRONMENTAL ASPECTS

Based on the identification of potential impacts and an assessment of the nature and extent of the impacts of the proposed activity, it is determined that all potential impacts can be appropriately mitigated to ensure that there is minimal impact on the locality, community and/or the environment.

See **Section 14.0** for further details.

3.0 SITE DETAILS

The site is identified as 100 Ryans Road and 19 Northview Street, Gillieston Heights, legally described as Lot 51 DP1162489 and Lot 2 DP1308605.

The site is located within the Maitland Local Government Area (LGA) and is zoned RU2 Rural Landscape and R1 General Residential zone under the provisions of the Maitland Local Environmental Plan 2011 (MLEP2011).

Existing attributes of the subject site are noted as follows:

- The subject site exhibits an area of approximately 23,385m² and is located in the suburb of Gillieston Heights;
- The subject site has a frontage to Ryans Road to the east, Gillieston Road to the north, and Northview Street to the south;
- In its existing state, the subject site comprises the existing Gillieston Public School. Existing school buildings are primarily located in the west portion of the subject site with a large area of open space situated in the eastern portion. There are limited permanent structures located on the subject site with thirteen (13) existing demountable classrooms currently occupying the subject site. Permanent buildings consist of the Main Administration Building, Original Brick Cottage, Library and GLS building located in the centre of the subject site; and
- Carparking is provided from Gillieston Road for staff. Pedestrian access is available via this main entrance from Gillieston Road and via a separate pedestrian-only access gates on Northview Street and Ryans Road.

The existing site context is shown in **Figure 1** and **Figure 2** below.

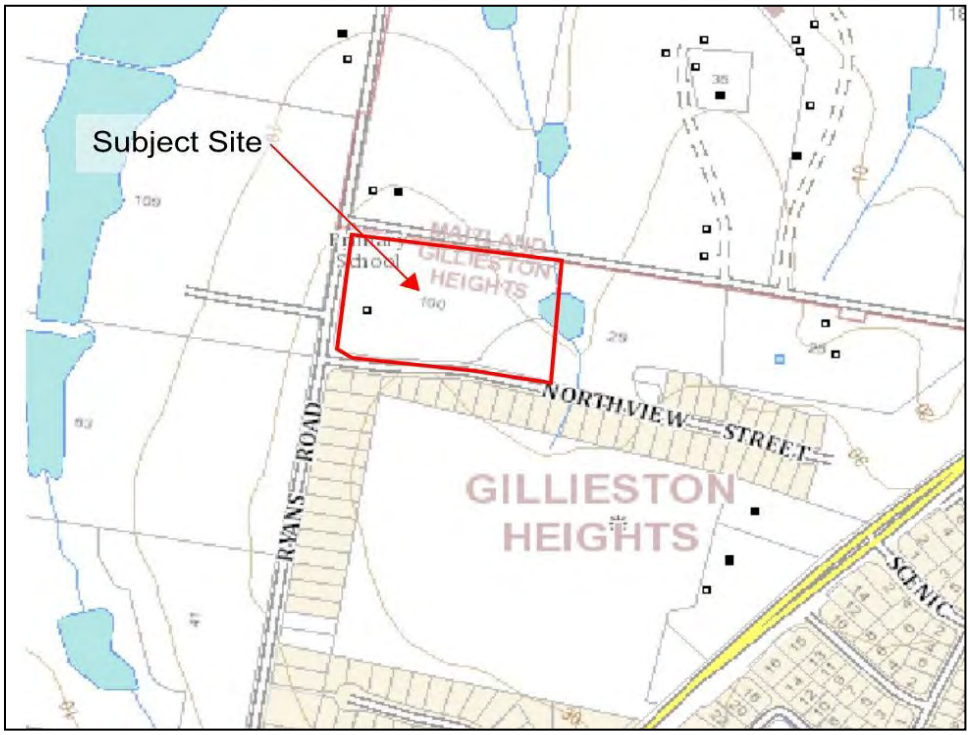

Figure 1 – Cadastral Map (Source: NSW Spatial Viewer, 2024)

Figure 2 – Site Aerial Map (Source: Near Map, 2024)

3.1 SITE IDENTIFICATION

Details related to the site at the time of preparing this assessment are included in **Table 3-1** below whilst site features are shown on **Figure 2** in **Appendix A**.

Table 3-1 Site Details

Details	Comments	
Site address	19 Northview Street & 100 Ryans Road, Gillieston Heights, NSW, 2321	
Applicable Lot and Deposited Plan	Lot 51 DP1162489 and, Lot 2 DP1308605	
Current land use	The site is currently a primary school (Gillieston Public). The site consists of multiple school buildings, grass and paved outdoor open space, other school infrastructure, car parks, and some localised vegetation.	
School operating hours	**Activity**	**Hours**
	Main School	8:45am to 3:05pm
	Preschool	8:45am to 3:05pm
	Before School Care	6:00am to 8:35am
	After School Care	3:05pm to 6:00pm
	Vacation Care (during school holidays)	6:00am to 6:00pm
Proposed land use	To Stantec's knowledge the selected land will be used for K-6 and pre-K learning facilities and infrastructure including multiple two-story buildings, open play space and carparking. No basement will be proposed. Earthworks will be limited to minor levelling of the site.	
Local Government Authority (LGA)	Maitland Local Government Area	
Current zoning (Maitland LEP 2011)	RU2: Rural Landscape R1: General Residential	
Site coordinates **(GDA2020 MGA 55)**	**Easting (m)**	**Northing (m)**
	924573.782	6367134.881
	924743.173	6367094.194
	924681.181	6366990.38
	924552.632	6367014.636

3.2 SURROUNDING LAND USE

The land uses immediately surrounding the site were identified during the site walkover inspection and desktop study and are summarised below in **Table 3-2**. The site and surrounding land uses are shown in **Figure 2** in **Appendix A**.

Table 3-2 Surrounding Land Use

Direction	Land Use or Activity
North	Gillieston Road with one residence and agricultural land further north
East	Agricultural land with some residential properties further east
South	Northview Street with residences and open space surrounding further west

West	Ryans Road followed by agricultural land with sparse residences

3.3 REGIONAL AND SITE SETTINGS

Site setting information, as listed within publicly available data sets and outlined in the Lotsearch report (*LS038890 EP*, dated 9 December 2022) that was completed for the site, is summarised in **Table 3-3**.

Table 3-3 Site Setting Information

Item	Details
Site Slope and Drainage Features (Nearmap, 2022)	The Lotsearch report shows the site elevation ranging from 30m AHD on the southern boundary to 18m AHD in the north-east corner and 22m AHD in the north-west corner showing that the site generally slopes down to the north with a ridge running north-south through approximately the western third of the site and down to the east and west from that point. The Site and neighbouring land surfaces are a mixture of predominantly permeable covers (grass and bare earth) with impermeable hardstands (concrete and asphalt) to a lesser extent. Surface run-off is anticipated to either drain into stormwater management systems or penetrate ground surfaces at a rate reflective of the underlying material. Based on surface contours and topography, surface run-off is expected to travel north-west from the western side of the ridge and north-east from the eastern side of the ridge.
Regional Soil Landscape (NSW Department of Planning, Industry and Environment)	The NSW DPIE *eSPADE* v2.2 website and the Lotsearch report indicated that the site overlies Bolwarra Heights (bh) residual soil landscape. Soils within the Bolwarra Heights landscape consisted of shallow to moderately deep (<150 cm) yellow, red and brown podzolic soils and some moderately deep (<100 cm) well-drained Lithosols on crests, whilst moderately deep (<140 cm) yellow soloths are evident on lower slopes.
Regional Geology (Department Finance, Services & Innovation 2022) (Herbert, 1983)	The Newcastle 1:100 000 Geological Map, Herbert C, 1983, illustrates that the subject site ins underlain by Sandstone, siltstone, conglomerate, and erratics (Pmb) of the Branxton Formation, part of the Maitland Group from the Permian group of the Palaeozoic era.
Topography (Department Finance, Services & Innovation 2022)	The Lotsearch report shows the site elevation ranging from 30m AHD on the southern boundary to 18m AHD in the north-east corner and 22m AHD in the north-west corner showing that the site generally slopes down to the north with a ridge running north-south through approximately the western third of the site and down to the east and west from that point. The NSW DPIE *eSPADE* v2.2 website shows the regional topography is rolling low hills with slopes ranging from 5–20%. Local relief is generally 50 m but ranging to 80 m. Elevation is 40–100 m. Rock outcrop is localised, often occurring where Muree Sandstone is present (<2%).
Regional Groundwater (Department Finance, Services & Innovation 2022) (Bureau of Meteorology)	The Lotsearch report with data sourced from WaterNSW showed one groundwater bore within a 2000 m radius of the site: GW201877 – located approximately 1260m to the north-east of the site. Installed as a stock and domestic bore in 1990 with a final depth of 26 metres. Bore is listed as functioning.
Surface Water Bodies (Nearmap, 2022)	The nearest surface water to the site are multiple small private dams/ponds within approximately 250m of the site, likely used as livestock drinking water. The nearest named surface waterbody is Swamp Creek located approximately 880m to the north-east of the site and discharges into Wallis Creek which then flows into the Hunter River. The site and surrounds are mostly grassed, due to a ridge running through the site,

Item	Details
	surface water flows are inferred to flow predominantly north, with some north-east and north-west, generally towards Swamp Creek.
Acid Sulfate Soils **Invalid source specified.** (MLEP, 2011)	The NSW Government Planning Industry and Environment online mapping tool, *eSPADE* Version 2.2, and the Lotsearch report indicate that the site is located within a soil class 5 ASS risk area, where acid sulfate soils are typically not found. Activities within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk. The nearest ASS risk is a soil class 2 area located approximately 250m west of the site in the vicinity of some of the nearby private dams, where acid sulfate soils are likely to be found below the ground surface. The Atlas of Australian Acid Sulfate Soils indicates the site is within a Class B area, with a low probability of occurrence (6-70%).
Salinity (Department Finance, Services & Innovation 2022)	In accordance with the Dryland Salinity National Assessment data presented in the Lotsearch report, the site is mapped as a high hazard or risk defined for all years: 2000, 2020, 2050.

3.4 SITE DESCRIPTION

Site inspections were undertaken by experienced Environmental Scientists from Stantec on the following dates:

- 19 – 21 December 2022
- 25 January 2023
- 03 February 2023
- 10 February 2023

Detailed observations of the site made during these inspections are provided below in **Table 3-4**, whilst photographs taken during the investigation are provided in **Appendix B** (Stantec, 2023).

Table 3-4 Site Inspection Details

Item	Observations
Weather Conditions	19/12/2022: Overcast clearing to sunny, windy, 23°C 20/12/2022: Mostly sunny, patchy cloud, 23°C 21/12/2022: Sunny, 25°C 25/01/2023: Sunny, 32°C 03/02/2023: Sunny, 33°C 10/02/2023: Sunny, 34°C
Site slope and drainage features	The site buildings are gathered almost entirely in the western half of the site. There is a ridge running north-south through the site, approximately 50m east of the western site boundary. The ridge slopes gently down in a northerly direction with a gently slope down to the west and a steep slope down to the east to the site boundaries. The low-lying area directly to the east of the site was boggy and likely floods during rain events and feeds into a culvert draining north underneath Gillieston Road.
Nearby surface water bodies	There is a chain of dams to the north, east and west the site, with the largest to the north-west. These dams are linked by ephemeral creek lines that lead to the north away from the site, eventually linking into Swamp Creek to the north of the site.
Site surface coverings	The eastern half the site was covered in healthy grass. The western half was covered with grass, sporadic weeds, mature trees and garden beds.

Item	Observations
	Concrete hardstands were observed near and between the school buildings and appeared to be in good condition with minor discolouring and cracking evident. There is an area of mulch/ woodchips between some of the central buildings. Maintained, healthy grass surrounded most school buildings. Minor areas of exposed soil were found around the centre and north of the site.
Surface soils	Surface soils observed were brown-grey silty sands that were consistent across the site. Surface soil was relatively shallow except in the low-lying eastern areas.
Site cut and fill	No notable anthropogenic material was observed in soils across the site. It was observed that the site was elevated on the southern side from the area further to the south. During the intrusive excavation the soil strata was observed to be natural, and rock was found as shallow at 0.5mBGL indicating that this elevated area is the natural topography not the result of filling.
Buildings	Two old school buildings are present on the site, one in the north-western corner (Building D) and one just to the south of the centre of the site (Building A). Original buildings were of brick and weatherboard construction and were in relatively good condition – some paint flaking observed. Other buildings were temporary demountable buildings on light concrete block footings raised 1-2m above ground level. Above ground water tanks were observed and one underground storage tank – later confirmed to be sewer storage.
Hazardous materials	No detailed hazardous material survey was conducted. Anecdotal evidence from personnel on site suggests that there has been asbestos and lead paint remediation works in the past on Building D (as shown on **Figure 1**, **Appendix A**). This information has not been confirmed through reports or other means. The schools asbestos register identifies asbestos in Building A and D and indicated the potential of asbestos material in other buildings on site.
Manufacturing, industrial or chemical processes and infrastructure	Not observed.
Fuel Storage (USTs/ASTs)	Not observed.
Dangerous Goods	Not observed.
Solid Waste Deposition	Multiple (at least four) 240L yellow-lid recycling bins and one general waste skip bin (approximately 5m^3 volume) in the south-western area of the site, near the driveway entrance from Ryans Road
Liquid Waste Disposal features	Not observed. A canteen was observed on site where it is likely that they dispose of liquid waste such as cooking oil, however Stantec are unable to comment on these disposal features as they were not directly observed.
Evidence of previous contamination investigations	Not observed.
Evidence of land contamination (staining or odours)	Not observed.
Evidence of groundwater contamination	Not observed.

Item	Observations
Groundwater Use	Not observed.
Vegetation	Generally healthy and well-maintained grass with weeds and few patches of wilted grass made up the majority of the site. Mature trees were found across the western half of the site with some smaller shrubs and vegetated garden beds. No signs of stressed vegetation were observed at the site.
Services	Not observed
Site fencing	In December, the site was fenced with waist-height metal fencing around the perimeter with temporary construction fencing running internally across the site bisecting the eastern grassed are, and between the school buildings in the south-west and north-west. Pedestrian access to the site is from the south off Northview Street, car parking access is from the north off Gillieston Road, and there is a locked vehicle access gate from the south off Northview Street (just east of the pedestrian access point). During the January and February inspections, the waist-height metal fence was being replaced with heavy duty 1.8m height steel security fencing around the site perimeter.

4.0 SITE HISTORY REVIEW

A desktop site history review of the following was conducted:

- Previous relevant site reports
- Historic aerial photographs;
- Historical business directories;
- Current and historic land title information;
- Schedule 11 Dangerous Goods Search issued by SafeWork NSW.
- NSW Environment Protection Authority (EPA) registers and records;
- Contaminated lands records of notices
- List of NSW contaminated sites notified to NSW EPA
- PoEO public register
- Local and regional geology, hydrogeology, topography and hydrology;
- Maitland City Council property file listings;
- Utilities and service plans
- Section 10.7 (2&5) certificates issued by Maitland City Council; and
- Schools asbestos register.

A Lotsearch report, namely LS*038890 EP* (dated 9 December 2022), was requested as part of this site history study) for the site. The report was done for the entirety of Lot 51 DP 1162489, and it included searches of databases maintained by the NSW Environment Protection Authority (EPA) for records relating to statutory notices under the *Contaminated Land Management Act 1997* (CLM Act 1997) and licensing agreements under the *Protection of the Environment Operations Act 1997* (POEO Act 1997). Historical aerial imagery was also provided in this report. Copies of relevant documents resulting from the report are presented in **Appendix C**.

It is noted that Stantec is not aware of any previous environmental investigations conducted at the site and has not been provided with any previous reports for review.

4.1 AERIAL PHOTOGRAPH REVIEW

As part of the desktop site history assessment a review of historical aerial photographs provided in the Lotsearch EP (LS, 2022) pertaining to Lot 51 DP 1162489 and surrounding land was undertaken by Stantec. The aerial photographs for the years of 1954, 1965, 1976, 1983, 1993, 2001, 2010, 2015, and 2022 were reviewed and are provided in **Appendix C**.

Details from this review regarding the site and surrounding land use are summarised below in **Table 4-1**.

Table 4-1 Summary of Historical Aerial Photographs

Dates	Site Use Observations	Surrounding Land Use Observations
1954 (B&W)	There are three main buildings on the site, one in the north-western corner of the site, another immediately to its east on the northern site boundary, and another due south near the southern site boundary. At least one of these buildings is likely a school building, others being possibly shed/barns. There are several smaller buildings/structures in between the three larger buildings, likely small sheds, although image quality is too low to clearly identify them. The entire eastern half of the site is cleared and grassed. There are a few sparse trees on the western half of the site.	There are well established dirt roads in the locations of Ryans Road and Gillieston Road. There is a cluster of small buildings to the south-east of site although image quality is too low to identify them. There is one building to the north of site along Ryans Road, likely a residence. There is a cluster of small buildings to the north-east of site, again image quality is too low to identify them. There is one building to the east of the site fronting Gillieston Road, either a shed or a residence. A relatively large reservoir can be seen in the north-western corner of the image. There is a small reservoir to the north of the site. Otherwise, the surrounding area is cleared and undeveloped, likely either unused or used for agricultural purposes. Ground appears to be grassed with some sparse trees to the south-west of the site.
1965 (B&W)	Image quality is improved, the building in the north-western corner of the site looks likely to be a school building fronting onto Gillieston Road and fenced off from the remainder of the site. There are some small structures within the fenced area associated with the building, likely storage, garage, toilets etc. The building to the east on the northern site boundary has been demolished. The building near the southern site boundary can be more clearly seen with a paved pad adjacent to it. It is likely that this is either a school building with paved area for assembly/play or a shed with paved area for parking. Some other small structures remain although most of the structures near the northern boundary visible in the 1954 image has disappeared. The eastern half of the site is still empty, although two small reservoirs now exist overlapping the site boundary at the eastern edge.	Ryans Road and Gillieston Road are well defined and may be paved although it is difficult to tell from the image quality. The cluster of buildings to the south-east are serviced by a well-defined access road, there appear to be towers collocated in the area, likely communications. The residence to the north on Ryans Road remains. The building to the east on Gillieston Road remains but is still unclear whether it is a residence or an agricultural building (shed/barn). The cluster of buildings in the north-east of the image has expanded and now includes one large building (likely a residence), with several small-medium sized structures and some materials storage/materials scattered around the area. It is assumed that this is either agricultural or light industrial. Another small reservoir can be seen to the north-east of the site (now totalling 5 reservoirs visible in the image, 4 small and one large). The remaining surrounding land remains cleared and grassed with sparse trees to the south.
1976	The image is now in colour. The site appears unchanged from the 1965 image, the only noticeable difference being that one of the two reservoirs on the eastern site boundary has disappeared.	The image is now in colour and Ryans Road and Gillieston Road both appear to be paved. The cluster of buildings to the south-east has grown to include some larger buildings, likely industrial or commercial. There is now a second building to the east of site on Gillieston Road adjacent to the first, they both appear to most likely be agricultural buildings (sheds/barns). The cluster of buildings in

Dates	Site Use Observations	Surrounding Land Use Observations
		the north-east of the image now appears to be one or two residences, and a medium-large building has replaced the many smaller ones, likely an agricultural shed/barn or industrial warehouse. The surrounding area is otherwise unchanged from the 1976 image.
1983	Two new buildings have appeared, likely classrooms, one on either side of the existing paved area in front of the southern building. The site appears otherwise unchanged from the 1976 image.	Another medium-large building has appeared in the north-eastern cluster of buildings. A new very large, long building can be seen crossing the north-eastern corner of the image and extending outside the frame at both ends. There may be a second, similar building crossing the very north-east corner of the image although not enough can be seen to distinguish what it is. These new building(s) are linked to the existing north-eastern cluster of buildings and eventually Gillieston Road via a well-defined access road. The residence on Ryans Road to the north of the site has disappeared. The surrounding area is otherwise unchanged from the 1976 image.
1993	Image quality is low. The roof of the original building in the north-west of site appears to have been replaced, suggesting the likely presence of asbestos (super6 style?) roofing material. There also appears to be paved vehicle access to the southern portion of the site from Ryans Road leading to the buildings at the south of the site. The site appears otherwise unchanged from the 1983 image.	The cluster of buildings in the south-east has undergone some development/consolidation. There are now three buildings, one small, one small medium and one medium. Additionally, to the north-west of the cluster of buildings, there is a large tower of some sort, potentially communications related. The north-eastern cluster of buildings has small additional small infrastructure surrounding it, possibly materials or equipment scattered around the buildings. In place of the residence on Ryans Road (north of the site) there are now two buildings, one medium and one medium-large. Likely agricultural buildings. A dirt access track can be seen leading from these new buildings to the large reservoir in the north-west corner of the image. The area to the north of the site on the eastern side of Ryans Road appears to have had some agricultural process done to it e.g., ploughing.
2001	The paved area between the buildings at the south of the site appears to have been replaced with a new building, assumed classroom, although low image quality makes it difficult to identify. To the north of these buildings (in the middle of the western, developed, portion of the site there is now a distinguished green whereas the rest of the grass has browned. The rest of the site appears unchanged from the 1993 image.	There is now one residence and associated paved area visible in the south-eastern corner of the image. There is an additional paved area adjacent to the south-eastern cluster of buildings, likely for car parking or storage. The north-eastern cluster of buildings has undergone some consolidation with lass small infrastructure/materials visible around the main buildings. The southernmost building of the group thought to be the residence has undergone a rebuild/renovation and has approximately doubled in size. A swimming pool has also been built to the north of this residence. A third building, likely a residence, has been built just north of the two buildings on Ryans Road to the north of the site. Three new buildings have been built across Gillieston Road from the site (fronting onto Gillieston Road) likely a residence and a small and a large shed. The residence is connected to Gillieston Road via a paved driveway and the large shed is connected to Gillieston Road and Ryans Road via dirt access tracks. Some feint dirt tracks can be seen in the south and east of the image however

Dates	Site Use Observations	Surrounding Land Use Observations
		most of the area surrounding the site remains undeveloped.
2010	Image quality is significantly improved. Several new small and medium sized buildings can be seen around the western portion of the site. There is a demountable classroom building to the south of the original north-east building, and a car ark to its west. These buildings are connected to the southern buildings by a paved walkway. There are several small buildings in the south of the site and one on the western perimeter that may be teaching spaces although are likely too small so may be used for storage. There is a new playground and covered play area on the northern boundary of the site. There is a new paved are along the eastern edge of the developed (western) portion of the site. The entire eastern portion of the site remains undeveloped.	There is a second residence in the south-eastern corner of the image. The original south-eastern residence now has a pool. The south-eastern cluster of buildings is now fenced in and surrounded by several cars and trailers. The paved area that was new in the 2001 image suggested to be a car park can now be seen to be fenced off so likely contains some utilities infrastructure or similar. Along the eastern edge of the image south of Gillieston Road there is now a line of vegetation and two small buildings along the dirt access track. A pool has been added to the residence on Ryans Road in the north-east of the image, and the larger of the two large, shed buildings has been demolished. The residence directly north of the site has added another large shed to the east of the original one, and two smaller buildings further east, possibly livestock pens of some sort. Most of the area surrounding the site remains undeveloped.
2015	Four new demountable classrooms have been added to the west/south-west of the site. One of the central buildings has been replaced with a larger one. There is another large building to the east of the south-eastern most buildings on site – this is the first building in the previously undeveloped portion of the site. Some of the undeveloped area appears to be being used as a sports field. The site is still less than 50% developed.	A new paved road has been built running east-west from Ryans Road bordering the south of the site – Northview Street. The eastern side of Ryans Road south of Northview Street is lined with houses. The whole southern side, and northern side at the east of the image, or Northview Street are lined with houses. All new houses are standalone with large, fenced backyards. The new buildings added to the residence just north of the site in the 2010 image have been removed, leaving only the three original buildings from the 2001 image. Despite the addition of approximately 40 new homes, the area surrounding the site remains largely open, undeveloped space.
2022	Three new demountable buildings have been added in the north of the site, and three in the south plus one smaller building, possibly a toilet block. An additional building has been built in the south-east of the developed portion of the site. No other major changes have occurred. The site is now approximately 50% developed	A few additional houses have been built to the south of the site along Ryans Road and Northview Street. The larger shed of the residence directly north of the site has been demolished. The surrounding area remains otherwise unchanged from the 2015 image.

4.2 HISTORICAL BUSINESS DATA

A historical business data review was completed as part of the Lotsearch EP (LS, 2022). The review for Lot 51 DP 1162489 did not return any businesses other than Gillieston Public School (active since 1991) and indicated no activities linked with the use/storage of per- or poly-fluoroalkyl substances (PFAS). These findings support the aerial image review which showed that the site and surrounding areas were wither vacant or used primarily for residential purposes. A copy of the Lotsearch EP is provided under **Appendix C**.

4.3 DESKTOP SEARCHES

The NSW EPA database searches completed for Lotsearch EP (LS, 2022) have been summarised below in **Table 4-2**. The radius of investigation was ≤1km.

Table 4-2 Summary of Desktop Searches

Dataset Searched	Details
Former Gasworks – NSW EPA Former Gasworks Sites List	The site and the surrounding land were not identified by the NSW EPA records as containing a former gasworks.
Waste Management – Australian Government, National Waste Management Database	The site and surrounding lands were not identified on the National Waste Management Site Database.
Liquid Fuel Facilities – Australian Government, National Liquid Fuel Facilities Dataset	The site was not identified on the national Liquid Fuel Facilities dataset, which includes consideration of fuel refineries, fuel terminals, fuel depots and petrol stations.
PFAS Investigation & Management Programs	The site and surrounding land were not identified to be contaminated with PFAS, based on the search of the following datasets: Australian Government Defence *PFAS Investigation Program* Australian Government Defence *PFAS Management Program* Airservices Australia National *PFAS Management Program* One area in the surrounding land was identified to be on the following dataset: NSW EPA *PFAS Investigation Program* Details of the site are listed below: Truegain Rutherford – located at 62 Kyle St, Rutherford NSW 2320 + Stoney, Fishery & Wallis Creeks downstream (788m north-east of the site)
Defence Sites	The site and surrounding land were not listed as a defence site on the Department of Defence (DoD), *Defence 3 Year Regional Contamination Investigation Program*.
EPA Other Site with Contamination Issues	The site and surrounding land withing a 1000m buffer zone were not listed on the EPA website dataset as having contamination issues. The dataset currently includes: James Hardie asbestos manufacturing and waste disposal sites Radiological investigation sites in Hunter's Hill Pasminco Lead Abatement Strategy Area
Military Sites and UXO Areas	The site and surrounding land were not identified to be situated in an area of current military activity or unexploded ordinates (UXO). This information was obtained from government public site accessed on the 15 December 2022 (https://www.whereisuxo.org.au/). *Note: There is a large area to the north/north-east of the site (closest point 1.6km from site) that was used for military training and camps during WWII that is listed as UXO category 'Other'.* *Note: There is a small area '148 Rutherford' located approximately 3.4km north-west of the site that was used as a grenade range during WWII that is listed as having 'substantial potential' of UXO being present.*
Naturally Occurring Asbestos Potential	The site and surrounding lands were not identified to be situated in an area of naturally occurring asbestos.

Dataset Searched	Details
Mining & Exploration Titles	The site is not situated in a mining subsidence district; however, the Maitland West mining subsidence district was identified 16m West of the site.
	The site and surrounding land are not subject to current mining and exploration titles or applications. Note: The site and surrounding land was subject to historical mining and exploration titles as listed in **Table 4-3.**
SEPP	The site was not recognised as a State Significant Project under the State Environmental Planning Policy (SEPP).
Heritage	The site and surrounding land were not listed as heritage items on the following datasets: Commonwealth Heritage List National Heritage List State Heritage Register – Curtilages Environmental Planning Instrument - Heritage

Table 4-3 Historical Mining and Exploration Titles

Title Holder	Start Date	End Date	Resource	Distance / Direction
Planet Exploration	05/03/1906		Petroleum	On-site
Sydney Oil Co (NSW) Pty Ltd, Manvane Pty Ltd Australia NL, Base Resources Ltd, Seahawk Oil Australia NL, Reading & Bates	01/08/1985	07/06/2015	Petroleum	On-site
Earth Resources Australia Pty Ltd			Petroleum	On-site
NSW Oil and Gas Company NL			Petroleum	On-site
Eastmet Ltd	04/05/1981		Petroleum	On-site
Planet Exploration Company Pty Ltd			Petroleum	On-site
AGL Upstream Investments Pty Limited			Minerals	On-site
South Maitland Collieries Pty Limited	29/04/1987	29/04/1991	Coal	835m north

4.4 LAND TITLE DOCUMENT REVIEW

Historical land title documents were obtained to assess for potential historical site uses that may have resulted in contamination. The land title documents are provided in **Appendix E** and summarised in **Table 4-4** below:

Table 4-4 Land Title Records Summary

Date of Acquisition and Term Held	Registered Proprietor(s) and Occupation / Land Use	Title Reference
As regards to the part numbered 1 on Cadastral Records		
08.02.1898	Her Majesty The Queen (Acquired for the purpose of the Public Instruction Act of 1880)	Book 617 No. 503

Date of Acquisition and Term Held	Registered Proprietor(s) and Occupation / Land Use	Title Reference
08.02.1898 (1898 to Date)	# Minister of Public Instruction Now # Minister for Education & Training	Book 617 No. 503 Then 1/797922 Now 51/1162489
As regards to the part numbered 2 on Cadastral Records		
03.10.1916 (1916 to 1916)	John Borthwick (Solicitor) Kenneth Stewart Clift (Grazier)	Volume 2703 Folio 103
16.12.1916 (1916 to 1926)	Adelaide Abelia Enright (Married Woman)	Volume 2703 Folio 103 Now Volume 2736 Folio 126
01.03.1926 (1926 to 1953)	Thomas McInerney (Carter)	Volume 2736 Folio 126 Now Volume 3866 Folio 245
26.06.1953 (1953 to 1970)	Herbert Victor Jordon (Dairy Farmer)	Volume 3866 Folio 245 Now Volume 7085 Folio 160
09.04.1970 (1970 to 1997)	Royden Francis Jordon (Dairy Farmer)	Volume 7085 Folio 160 Then Volume 12482 Folio 98 Then Volume 13144 Folio 103 Then Volume 13404 Folio 249 Then Volume 13764 Folio 151 Then 21/598848 Now 3/817693
31.01.1997 (1997 to 1998)	Brian Thomas Jordon Douglas Paul Jordon Phillip Edward Jordon (Transmission Application)	3/817693 Now 5/868890
20.02.1998 (1998 to 1998)	Rajinder Singh Dhami Kay Dhami	5/868890
20.02.1998 (1998 to 2009)	Subdivision Investments Pty. Limited	5/868890
18.09.2009 (2009 to 2011)	Joolmibi Pty Limited Now York Company Pty Limited	5/868890
27.04.2011 (2011 to Date)	# Minister for Education & Training	5/868890 Now 51/1162489

Date of Acquisition and Term Held	Registered Proprietor(s) and Occupation / Land Use	Title Reference
Easements		
23.03.2011 (D.P. 1162489): Easement to drain water variable width affecting the part(s) shown so burdened in the diagram (provided in Appendix C).		

4.5 SAFEWORK NSW RECORD SEARCH

A SafeWork NSW Schedule 11 Storage of Hazardous Chemicals search was lodged on the 18 of December 2022 to identify if bulk storage of chemicals had historically or are currently stored on the premises, such as underground petroleum storage tanks.

A search of the records held by SafeWork NSW located records pertaining to the premises indicating that dangerous goods have been stored on the site as detailed in **Table 4-5**. A copy of the data provided by SafeWork is attached under **Appendix F**. Stantec considers the LPG tank historically present on the site to be a low contamination risk due to the nature of its contents being gas.

Table 4-5 Dangerous Goods Licence Details

Licence No.	Licence Class	Licensee	Storage Specifications	Quantity	Date Granted	Date Expired
35/010938	2.1 – Flammable gases (e.g., LP Gas, acetylene).	School Education Department Gillieston Public School	Above-ground tank, UN 1075 Petroleum gases, liquified	1100L	11/03/1976	14/04/2005

4.6 EPA RECORDS SEARCH

4.6.1 Contaminated Land Records of Notices

The Contaminated Land Record of Notices is maintained by the Office of Environment and Heritage (OEH) in accordance with part 5 of the Contaminated Land Management (CLM) Act 1997 and contains regulatory notices issued by the Environment Protection Authority (EPA) in relation to the contaminated sites.

The Record of Notices searched for the Lotsearch EP (LS, 2022) did not identify the site or any surrounding land parcels within a 1km buffer zone registered on the list.

4.6.2 List of NSW Contaminated Sites Notified to the NSW EPA

The list of NSW contaminated sites notified to the EPA are properties that are contaminated to an extent that warranted reporting to the NSW EPA; however, contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before can determine the requirement regulation.

A search of the List of NSW Contaminated Sites notified to the EPA was undertaken for Lotsearch EP (LS, 2022) and identified that the site was not a notified site, however; one land parcel within 1000 m radius of the site was noted to be on the list of notified sites and is summarised below in **Table 4-6**.

Stantec assess the Farley Wastewater Treatment Works to pose a low contamination risk for the site due to a combination of its distance from the site and its downgradient location with groundwater assumed to flow away from the site towards the Treatment Works.

Table 4-6 Sites Notified to the NSW EPA

Site Name	Address	Contamination Activity Type	Management Class	Distance / Direction
Farley Wastewater Treatment Works	Owlpen Lane	Other industry	Regulation under CLM Act not required	955m north-west

4.6.3 PoEO Public Register

The PoEO Public Register under Section 308 of the Protection of the Environment Operations (PoEO) Act 1997 contains Environmental Protection Licences (EPLs), applications and notices issued by the EPA. A search for licences to identify issues of relevance within 1000 m radius zone completed for the Lotsearch EP (LS, 2022) returned the results summarised in **Table 4-7**. These results indicate a possible contamination risk for pesticides/herbicides as the licensed activities may have been / may still be being conducted on-site.

Table 4-7 Surrounding Sites on PoEO Database (Active Licenses)

Organisation	Location	Status	Activity	Distance / Direction
Maitland City Council	All waterbodies in the Maitland Local Government Area	Active	Other activities incl. application of herbicides to waterways	On-site
Hunter Water Corporation	Farley Wastewater Treatment Works – off Owlpen Lane	Active	Sewage treatment processing by small plants	955m north-west

A search for delicensed and former licensed activities to identify issues of relevance within 1000 m radius zone completed for Lotsearch EP (LS, 2022) returned the results summarised in Table 4-8. These results indicate a possible contamination risk for pesticides/herbicides as the licensed activities may have been conducted on-site.

Table 4-8 Surrounding Sites on PoEO Database Former Licensed)

Organisation	Location	Status	Activity	Distance / Direction
Luhrmann Environment Management Pty Ltd	Waterways throughout NSW	Surrendered	Other Activities / Non Scheduled Activity - Application of Herbicides	On-site
Robert Orchard	Various Waterways throughout New South Wales - Sydney NSW 2000	Surrendered	Other Activities / Non Scheduled Activity - Application of Herbicides	On-site
Sydney Weed & Pest Management Pty Ltd	Waterways throughout NSW - Prospect, NSW, 2148	Surrendered	Other Activities / Non Scheduled Activity - Application of Herbicides	On-site
State Of New South Wales	Soil Conservation Service,	Surrendered	Other Activities - Application of Herbicides	123m north-west

Organisation	Location	Status	Activity	Distance / Direction
(Department of Primary Industries - Lands)	Waterways within the Hunter Valley Flood Mitigation Scheme, Maitland			

4.7 SECTION 10.7 PLANNING INFORMATION

The site is zoned partly as RU2 Rural Landscape and partly as R1 General Residential under the Maitland Local Environmental Plan 2011. The LEP states the following objectives for RU2:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base
- To maintain the rural landscape character of the land
- To provide for a range of compatible land uses, including extensive agriculture
- To provide for a range of non-agricultural uses where infrastructure is adequate to support the uses and conflict between different land uses is minimised

The LEP states the following objectives for R1:

- To provide for the housing needs of the community
- To provide for a variety of housing types and densities
- To enable other land uses that provide facilities or services to meet the day to day needs of residents

The Section 10.7 Planning Certificate provided by Maitland City Council is attached in **Appendix D** and includes the following pertinent information relating to contamination:

- *The land to which the certificate relates is not declared to be significantly contaminated land within the meaning of that act as at the date when the certificate is issued.*
- *The land to which the certificate relates is not subject to a management order within the meaning of that act as at the date when the certificate is issued.*
- *The land to which the certificate relates is not the subject of an approved voluntary management proposal within the meaning of that act at the date the certificate is issued.*
- *The land to which the certificate relates is not the subject of an ongoing maintenance order within the meaning of that act as at the date when the certificate is issued.*
- *As at the date when the certificate is issued, Council has not identified that a site audit statement within the meaning of that act has been received in respect of the land the subject of the certificate.*

4.8 SITE HISTORY SUMMARY

Based on the desktop review of available documentation, the documented site history and land use of the Gillieston Public site and immediate surrounding appeared to have been used for educational purposes by ownership since at least the 1890s. The use of the site for educational purposes has continued to date. The site has undergone progressive development throughout the studied history, with the staged construction of current school infrastructure, noting that many of the current school buildings are temporary demountable buildings rather than permanent buildings. The surrounding land

for the most part has not gone through significant changes and modifications during the assessed history, except for the south-east which has been developed into low-density residential housing.

Specific activities of relevance to potential contamination that appear to have occurred on site include demolition and filling.

4.9 SCHOOLS ASBESTOS REGISTER

A search conducted on 15 December 2022 of the asbestos register found on the School Infrastructure website (https://www.schoolinfrastructure.nsw.gov.au/content/infrastructure/www/what-we-do/we-look-after-our-schools/schools-asbestos-register.html) found no historical investigations or events have been recorded at Gillieston Public School. The asbestos register investigation findings are summarised below in **Table 4-9**. The location of building numbers on site can be seen in **Figure 2**.

Table 4-9 Asbestos Register Summary

Asbestos Type	Location Found	Building No.	Risk Status*
Chrysolite (white asbestos)	Ceiling Structures/Linings, Eaves Linings, Underfloor Voids, Wall Linings Internal, Wall Linings Internal - null	B00A, B00D	Low
Amosite (brown asbestos)	Ceiling Structures/Linings, Eaves Linings, Underfloor Voids, Wall Linings Internal, Wall Linings Internal - null	B00A, B00D	Low
Crocidolite (blue asbestos)	Ceiling Structures/Linings, Eaves Linings,	B00A, B00D	Low
Assumed Asbestos	Ceiling Structures/Linings, Eaves Linings, Electrical Backing Board, End Wall Panel, Landing, Step Treads, Toilet Partitions	B00A, OS 602 10744, OS 601 12781, OS 523 13280, OS 840 13283, OS 601 14417, OS 602 15745,	Low

*Low risk = asbestos containing materials that pose a low health risk to personnel, employees and the general public providing they remain undisturbed.

4.10 CONTROLLED CHEMICALS

The NSW EPA uses chemical control orders (CCO) as a primary legislative tool under the Environmentally Hazardous Chemicals Act 1985 to manage chemicals of concern and limit their potential impact on the environment. Stantec provide a preliminary screening of the site history for the likelihood of chemicals of concern within the CCO framework in **Table 4-10** below.

Table 4-10 Preliminary Controlled Chemicals Screening

Chemical of Concern	Likelihood of Occurrence
Were aluminium smelter wastes used or stored on the site (CCO, 1986)?	Low
Do dioxin contaminated wastes (CCO, 1986) have the potential to impact the site?	Low
Were organotin products (CCO 1989) used or stored on site?	Low
Were polychlorinated biphenyls (PCBs) used or PCB waste (CCO 1997) stored on site?	Low to medium *Fluorescent light fittings with potential PCB capacitators may*

Chemical of Concern	Likelihood of Occurrence
	be/have been present in old buildings on site.
If Yes to any of the above, has site sampling suite been optimised to include specific sampling for other chemicals of concern in soil, air, water?	Yes. Even though likelihood of PCBs were low to medium, soil samples were analysed for PCBs.

4.11 PER AND POLY FLUOROALKYL SUBSTANCES (PFAS)

A PFAS probability of occurrence desktop survey is provided in **Table 4-11** and has been undertaken on the basis of information provided in the PFAS National Environmental Management Plan (NEMP 2020). PFAS are known to be present in Aqueous Film Forming Firefighting Foams (AFFF) and Alcohol-Type Concentrate (ATC). The historic use of AFFF is reported as being used by Fire & Rescue NSW between 1976 and 2007, while other agencies used AFFF during training exercises as late as 2010 (Source: Fire & Rescue NSW, Information Sheet, Firefighting Foam and PFAS, reference D16/82523).

Table 4-11 PFAS Desktop Survey

Preliminary Screening	Likelihood of Occurrence
Is the past or present site activity listed in the NEMP 2020 as being an activity with risk of fire. If so, list activity:	Low
Is the past or present off-site activity up-gradient or adjacent to the site listed in the NEMP 2020 as being an activity with risk of fire. If so list activity:	Low
Did fire training involving the use of suppressants occur on-site between 1970 and 2010?	Low
Did fire training occur up-gradient of or adjacent to the site between 1970 and 2010?	Low
Have “fuel” fires ever occurred on site between 1970 and 2010? (i.e., ignition of fuel storage tanks - solvent, petrol diesel, kerosene, other)?	Unknown
Have PFAS been used in manufacturing or stored on-site?	Low
Could PFAS have been imported to the site in fill materials from a site with activity listed in NEMP 2020 and subject to exposure to PFAS from 1970 to 2010?	Unknown
Could PFAS-contaminated groundwater or run-off have migrated beneath or on to the site?	Low
Is the site or adjacent sites listed in the NSW EPA PFAS Investigation program [4]?	No *Note the closest PFAS investigation site is Truegain Rutherford located approximately 5.4 km north-west of the site.*
If the likelihood is medium or high in any of the above factors, does the site analytical suite need to be optimised to include preliminary sampling and testing for PFAS in soil and waters (incl. ASLP or TCLP)? Provide rationale.	Yes – despite the likelihood of above factors being low, selected soil samples have been analysed.

Notes:
1 Likelihood: Low – All necessary documentation has been reviewed and there is no recorded instance of potential PFAS use or exposure
2 Medium - All necessary documentation has been reviewed and there is potential evidence of a recorded instance of potential PFAS use or exposure

3 High - All necessary documentation has been reviewed and there is evidence of a recorded instance of potential PFAS use or exposure
4 https://www.epa.nsw.gov.au/your-environment/contaminated-land/pfas-investigation-program

4.12 ANECDOTAL EVIDENCE

A discussion between a Stantec Environmental Scientist and a member of School Infrastructure NSW that occurred on site on 25 January 2023 identified that the original school administration building, building D (as shown on **Figure 1** of **Appendix A**) had undergone a roof replacement within the previous 12 months, estimated to be over Christmas of 2021. According to the DOE member, the works had not disturbed or uncovered asbestos, and had included lead paint dust remediation. It was also noted by the DOE member that building D was intended to be painted in the near future, and that the building would be tested for lead paint as part of this work and would undergo remediation if required. The site was confirmed to contain one underground sewer/septic tank. It was explained that the bedrock is shallow under many of the buildings, particularly between the location of the underground tank and Northview Street.

5.0 PRELIMINARY CONCEPTUAL SITE MODEL

Outlined within National Environment Protection Measure (NEPM)2013 Schedule B2 – Guideline on Site Characterisation, a Conceptual Site Model is required to aid the assessment of data collected for the site.

5.1 PRELIMINARY CSM

A conceptual site model (CSM) provides an assessment of the fate and transport of contaminants of potential concern within the context of site-specific subsurface conditions with regard to their potential risk to human health and the environment. Risk to human health and the environment is identified through complete Source – Pathway – Receptor (SPR) linkages. In order to identify SPR linkages the CSM considers site specific factors including:

- Source(s) of contamination
- Identification of contaminants of concern associated with past (and present) source(s)
- Site specific information including soil type(s), depth to groundwater, effective porosity, groundwater flow velocity and surface water bodies and interactions
- Locations of any identified sources relative to the proposed site activity
- Actual or potential receptors considering both current and future land use both for the site, adjacent properties and any sensitive ecological receptors

5.1.1 Identified Contamination Sources

Based on review of the historical site and surrounding land uses, Stantec have identified the following sources of contamination that may be encountered onsite:

- Imported fill material potentially used for filling or beneath building slabs and structures
- Potential low-level fuel leakage from parked vehicles (cars and trucks) both historically and currently on site
- Previously identified asbestos containing materials in school infrastructure and on grounds
- Weathering of exposed building structures including, painted surfaces, metallic objects, and cement fibre sheeting (containing lead-based paint and/or asbestos etc.)

5.1.2 Identified Receptors

A high-level summary of potential receptors considered to be susceptible to site contamination include:

- Students
- Current site workers
- Future site workers
- Neighbouring site users
- Ecological receptors - the root zone of mature trees may potentially be within fill material and/or shallow groundwater. In the absence of waterways or obvious areas of ecological significance no other receptors have been identified.

The preliminary CSM applicable for the site during this investigation, which is inclusive of a more detailed list of receptors, is summarised in **Table 5-1** and applies to the potential future land use settings.

Table 5-1 Preliminary Conceptual Site Model

Contaminant Source	Impacted Media	Contaminants of Potential Concern	Potential Exposure Pathways	Receptors	Completeness
Imported fill material Low-level leakage from parked vehicles	Surficial soils Surface water through run-off	Metals TRH PAH BTEX OCP OPP PCB Asbestos	Direct Contact Incidental Inhalation Incidental Ingestion	**Human:** Current site users Future Site workers (including maintenance workers) Neighbouring site users (including neighbouring basement users) **Ecological:** Existing and future plant-based biota within the site	Potentially complete in the event of any direct interaction with impacted media (i.e., excavations, use as growth medium)
Hazardous building materials contained within former and existing site structures Weathering of exposed building structures	Air Surficial soils (particularly surrounding site buildings)	Asbestos Lead PCB Synthetic mineral fibres	Direct Contact Incidental Inhalation Incidental Ingestion		

PAH: polycyclic aromatic hydrocarbons
TRH: total recoverable hydrocarbons
BTEX: benzene, toluene, ethylbenzene, xylene
OCP: organochlorine pesticides
OPP: organophosphorus pesticides
PCB: polychlorinated biphenyls

6.0 DATA QUALITY OBJECTIVES

6.1 DATA QUALITY OBJECTIVES

The NEPC (2013) which is endorsed by the NSW EPA under s105 of the *Contaminated Land Management Act 1997*, requires that Data Quality Objectives (DQOs) are adopted for all assessment and remediation programs. The DQO process as adopted by the NSW EPA is described within the US EPA (2000) *Guidance for the Data Quality Objectives Process and Data Quality Objectives Process for Hazardous Waste Site Investigations*.

The DQOs for the assessment are summarised below in **Table 6-1**.

Table 6-1 Data Quality Objectives

DQO Step	Discussion
Step 1: State the Problem (Summarise the contamination problem that will require new environmental data and identify the resources available to resolve the problem; develop a conceptual site model).	Available information indicates that the site has historically been used as an education facility and has undergone progressive development over the last at least 70 years. Investigation is required to determine if potential contamination from historical demolition and/or filling, and the use of hazardous buildings materials is present. The investigation encompasses the entire site, as shown in **Figure 4**, **Appendix A**. This assessment was undertaken to: • Identify historical site uses and potential contamination sources • Determine the presence of contaminated soils (if any) • Classify the soils – indicative waste classification (if needed) • Specify what further action is required (if any) A preliminary Conceptual Site Model (CSM) is presented in **Section 5.1**.
Step 2: Identify the decision / goal of the study (Identify the decisions that need to be made on the contamination problem and the new environmental data required to make them).	Our default assumption (null hypothesis) for the purpose of the study is that: The site is impacted by the contamination of land due to historical site activities. We aim to show, that: The site is not impacted by contamination at a level that represents a risk to current and / or future site onsite and offsite receptors. If this can be shown then, subject to the limitations of the investigation methodology, the site will be determined unimpacted by contamination associated with historical activities that present risk to ongoing, unchanged land-use or a constraint to the proposed future activity. If this cannot be shown, then the following decisions will be made: 1. Is further investigation required; and / or 2. Is remediation of site soils necessary to make the site suitable for the intended land use?
Step 3: Identify the information inputs (Identify the information needed to support any decision and specify which inputs require new environmental measurements).	Inputs to the decision-making process included: • Guidelines made or approved by the NSW EPA under the Contaminated Land Management Act 1997 • Results of the desktop history conducted on the site. • Information gathered during the assessment of fill and natural soils. • Laboratory analysis of soil for relevant COPCs, based on historical land use;

DQO Step	Discussion
	• Assessment of the suitability of the analytical data obtained, against the Data Quality Indicators (DQIs) outlined below; and Aesthetic observations of soils, including odours, staining and waste inclusions.
Step 4: Define the boundaries of the study (Specify the spatial and temporal aspects of the environmental media that the data must represent to support decision)	The boundaries of the study are: • Lateral – the intrusive investigation is limited to the borehole locations as shown in **Figure 4** in **Appendix A** • Vertical – the intrusive environmental soil investigation was limited to a maximum 1.8 mBGL • Temporal – Results are valid on the day of data / sample collection and remain valid as long as no changes occur on site or contamination (if present) does not migrate on site or on to the site from offsite sources.
Step 5: Develop the analytical approach (To define the parameter of interest, specify the action level, and integrate previous DQO outputs into a single statement that describes a logical basis for choosing from alternative actions).	Parameters of interest include the laboratory results of primary and quality control soil analytical testing. Decision rules for soil and criteria exceedance are outlined as follows: • If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use • The Practical Quantitation Limit (PQL) for all analyses is at or below the adopted criteria level • If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use • The PQL for all analyses is at or below the adopted criteria level • Soil: The laboratory soil test results will be considered to have met the adopted site soil criteria when the following occur: – The laboratory reported result is below the investigation human health and ecological criteria for the site; or, – The calculated 95% Upper Confidence Level of the arithmetic mean (95%UCL) contaminant concentration does not exist in soil samples at concentrations in excess of Tier 1 Assessment Criteria; and – The standard deviation of the results is less than 50% of the relevant adopted criteria; and, – No single analytical result for a CoPC should exceed 250% of the relevant investigation level or screening level. The laboratory results and site observations associated with the assessment of asbestos in soil must meet the following criteria: • No asbestos detected in laboratory results
Step 6: Specify performance or acceptance criteria (Specify the decision-maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data).	Decision errors are incorrect decisions caused by using data that is not representative of site conditions due to sampling or analytical error. The two types of decision errors are: the sampling program does not detect the variability of a contaminant from point to point across the site; and errors made during sample collection, handling, preparation, analysis and data reduction. Decision errors will be minimised by the following: • The field sampling design, frequency, and methodology, sample preservation techniques and laboratory analytical procedures will be conducted in accordance with accepted NSW EPA, NEPM (2013) and NATA accredited methodologies • A check of the field and laboratory works is to be made against the Data Quality Indicators for precision, accuracy, representativeness, completeness and comparability as outlined in NEPM (2013) Schedule B2, Site Characterisation and included in **Section 11.1**

DQO Step	Discussion
	• A decision that soil is acceptable for the site land use is based on calculation of the 95% Upper Confidence Level of the arithmetic mean (95%UCL) and standard deviation for contaminant concentration and comparison with the adopted soil criteria. Therefore, the acceptable limit of a decision error is 5% that a conclusive statement may be a false positive or false negative • Sampling errors may occur when the sampling program does not adequately detect the variability of a contaminant from point to point across the site or is not representative. Some examples of this scenario include but are not limited to: – Restrictions in borehole depth due to drilling refusal – Proposed samples are not collected due to access being restricted to a given location Measurement errors can occur during sample collection, handling, preparation, analysis and data reduction. To address this the following measures are proposed: a) Field staff to follow a standard procedure when undertaking samples, including decontamination of tools, removal of adhered soil to avoid false positives in results, collection of representative samples and use of appropriate sample containers and preservation methods b) Laboratories to follow a standard procedure when preparing samples for analysis and undertaking analysis c) Laboratories to report quality assurance/ quality control data for comparison with the DQIs established for the project
Step 7: Develop the plan for obtaining data (Identify the most resource-effective sampling and analysis design for general data that are expected to satisfy the DQOs).	The works plan is designed to meet the project objectives in **Section 1.2** and the DQOs outlined above. To ensure resource-effective sampling, analysis and data collection that satisfied the DQOs, the following actions are to be taken: • Written instructions will be used to guide field personnel in the required fieldwork activities • Representative soil samples will be collected from the site and analysed for characterisation purposes • Field works and analyses will be undertaken in accordance with Stantec Standard Operating Procedures

6.2 DATA QUALITY INDICATORS

To ensure that the investigation results were of an acceptable quality, the data set was assessed against the data quality indicators (DQIs) outlined in **Table 6-2**.

Table 6-2 Data Quality Indicators

QAQC Measure	Field Quality Indicator	Laboratory Quality Indicator
Precision: A quantitative measure of the variability (or reproducibility) of data.	SOPs are appropriate and complied with. Field duplicates and Blind field duplicates are collected and analysed at a rate of 5% (1 per 20 samples). Use of calibrated equipment.	Laboratory analyses of laboratory and inter-laboratory duplicates, field duplicates, laboratory prepared volatile trip spiles. Relative Percent Difference (RPD) calculation results: <30% Relative Percentage Difference (RPD). The RPD values are calculated using the following equation: $RPD = \frac{I C_O - C_R I}{} \times 100$

QAQC Measure	Field Quality Indicator	Laboratory Quality Indicator
		$[(C_O + C_R) / 2]$ Where, C_O = Analyte concentration of the original sample C_R = Analyte concertation of the duplicate sample
Accuracy: A quantitative measure of the closeness of reported data to the "true" value.	SOPs are appropriate and complied with. Use of calibrated equipment. Field inter/intra laboratory duplicates sampled and analysed at a rate of 1 per 20 samples. <30% Relative Percentage Difference (RPD) Analysis of rinsate sample collected at rate of 1 per day. Trip spike and trip blanks were used.	Laboratory holds NATA-accreditation for the analyses. Laboratory limit of reporting is below the adopted investigation level. Laboratory analysis of: field blanks, rinsate blank, reagent blank, method blank, matrix spike, matrix spike duplicate, surrogate spike, reference material, laboratory control sample, laboratory-prepared spikes. The nominal acceptance limits on laboratory control samples are: Laboratory spikes: 70-130% recovery for metals 60-140% for organics Laboratory duplicates. If contaminant concentration is: < 10 x PQL, no RPD limit 10-20 x PQL, RPD is 0% to 50% >20 x PQL, RPD is 0% to 20% Laboratory surrogates: 60-140% recovery. Laboratory blanks: <PQL Laboratory control samples, 70-130% recovery
Representativeness: The confidence (expressed qualitatively) that data are representative of each media present on site and the conditions encountered in the field	Appropriate media sampled. Preservation and storage of samples upon collection and during transport to the laboratory occurs. Sampling is undertaken by an experienced sampler.	Blank samples run in parallel with field samples to confirm there are no unacceptable instances of laboratory artefacts. Review of RPD values for field and laboratory duplicates to provide an indication that the samples are generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities The appropriateness of collection methodologies, handling, storage and preservation techniques will be assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (i.e., volatile loss during transport due to incorrect preservation / transport methods). Rinsate samples used when sampling equipment is reused have analytical results <LOR.
Completeness: A measure of the amount of useable data from the data collected during the fieldwork program	All critical locations sampled. All samples collected (from grid and at depth). Standard operating practices (SOPs) appropriate and complied with.	All critical samples are analysed according to the SAQP. All CoPC are analysed. Appropriate methods and PQLs are implemented. Sample documentation is complete.

QAQC Measure	Field Quality Indicator	Laboratory Quality Indicator
	Sampling is undertaken by an experienced sampler. Suitable records of field work are documented. Completed laboratory sample chain-of-custody and documentation.	Samples are analysed within holding times.
Comparability: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Same SOP is used on each field occasion. Climatic conditions are documented. Experienced sampler Sample type, preservation and handling are consistent at sampling events. Use of calibrated equipment.	Sample analytical methods used (including clean-up) Sample PQLs (justify/quantify if different) Same laboratories are used, and justification is given where differences occur. Same analytical methods, PQLs, and units of measurement are used.

7.0 ASSESSMENT CRITERIA

The assessment of site's soils has been undertaken in the framework of a Tier 1 risk assessment. A Tier 1 assessment is a risk-based analysis comparing site data with generic investigation levels and screening levels for various land uses to determine the need for further assessment or an appropriate management strategy. The application of investigation and screening levels is subject to a range of limitations.

The following sections detail the adopted Tier 1 Screening Criteria for the site.

7.1 SOIL CONTAMINATION ASSESSMENT CRITERIA

In the context of this investigation, the human health investigation and screening levels adopted for the assessment are hereafter referred to as soil assessment criteria (SAC). The SAC is outlined in **Table 7-1**. The specific SAC values are presented along with analytical results in **Appendix G**.

Table 7-1 Soil Assessment Criteria

Value	Guideline	Criteria
Human Health	NEPC, 2013, Schedule B1, Section 6, Tables 1A(1) and 1A(3); For asbestos: Section 4, Table 7.	The criteria have been derived in consideration of the proposed end land use and associated activities, which are school infrastructure upgrade. As the activity includes pre-kindy and primary school facilities, the HIL-A / HSL-A exposure scenario (residential with garden/accessible soil) is considered appropriate given the sensitive land use leading to potential exposure to soil, dust, and vapours. The specific criteria to be used are summarised below: • Health Investigation Level (HIL) for 'residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, (no poultry), also includes children's day care centres, preschools and primary schools' (**HIL-A**) • Health Screening Level (HSL) for 'Low – high density residential' (**HSL-A&B**) **For asbestos**: • No visible asbestos for surface soils • Asbestos detected in any form or any concentration within soil will prompt a more detailed investigation
Ecological	NEPC 2013, Schedule B1	Within the landscaped areas, the ecological criteria for urban residential and public open space is considered to be appropriate. • Ecological Screening Levels (ESL) for urban residential and public open space, fine soil, 0-2m. • Ecological Investigation Levels (EIL) for urban residential and public open space, aged, NSW setting, low traffic[1] site observations indicated that the school was in a low traffic area.

Notes:
1: Low traffic means "those areas located in quiet backstreets, cul-de-sacs, or no throughroads, which carry < 50 cars (estimated) per hour during busy periods." High traffic area means "properties located within 50m of a road which was estimated to carry > 250 vehicles per hour past a point during a peak period. Houses in high traffic areas were therefore close to freeways, expressways or main thoroughfares." Source Trace Element Concentrations in Soils from Rural and Urban Areas of Australia, Olszowy et. Al. Contaminated Sited Monograph Series No. 4 1995.

8.0 METHODOLOGY

8.1 SITE INVESTIGATION PROGRAM

Fieldwork was undertaken by experienced environmental engineers from Stantec. The records and observations made during fieldwork are presented in **Table 8-1** and shown in photographs provided in **Appendix B**, with geological logs presented in **Appendix H**.

The Quality Assurance / Quality Control (QA/QC) program is discussed in **Table 6-1**. Copies of NATA-accredited laboratory reports and chain of custody documentation is provided in **Appendix I**.

Table 8-1 Investigation Activity Summary

Activity	Details
Dates of Field Activity	Service locating was undertaken on 19 December 2022. Drilling and soil sampling was undertaken on 19, 20 and 21 December 2022. Soil boring (using hand tools e.g., hand auger) and soil sampling was undertaken on 25 January 2023, 03 February 2023 and 10 February 2023.
Service Location	An accredited service locater was engaged to locate and mark underground services in the vicinity of each borehole location and to avoid damage to subsurface utilities. Service locating was supervised by an environmental engineer from Stantec.
Drilling locations	Boreholes were drilled at 28 locations (BH01, BH02, BH03, BH04, BH05, BH06, BH07, BH08, BH09, BH10, BH11, BH12, BH13, BH14, BH15, BH16, BH17, BH18, BH19, BH20, BH21, BH22, BH23, BH24, BH25, BH26, BH27, and BH28) with a Massenza MI2 drilling rig. Soil boring utilising a hand auger was undertaken on the following dates and the following locations: 25 January 2023: 16 locations (HA101, HA102, HA103, HA104, HA105, HA106, HA107, HA108, HA109, HA110, HA111, HA112, HA113, HA114, HA115 and HA116). 03 February 2023: 4 locations (HA201, HA202, HA203, HA204) 10 February 2023: 31 locations (HA301, HA302, HA303, HA304, HA305, HA306, HA307, HA308, HA309, HA310, HA311, HA312, HA313, HA314, HA315, HA316, HA317, HA318, HA319, HA320, HA321, HA322, HA323, HA324, HA325, HA326, HA327, HA328, HA329, HA330, and HA331) The location of each borehole/ hand auger is shown on **Figure 4** of **Appendix A**.
Soil Logging	Soils encountered during the investigation were described and logged in accordance with Australian Standard AS 1726:2017 – Geotechnical site investigations. The geological logs are presented in **Appendix H**. In addition to logging boreholes, excavated soils were assessed for visual and olfactory indicators of contamination such as sheen, staining, odour, discoloration, and the presence of asbestos containing materials.
Soil Sampling	Samples were collected directly off the auger, specifically soil that had not come into contact with the auger. A new dedicated, unused pair of nitrile gloves were used for collection of each sample. For the QA/QC samples, the material was carefully mixed and distributed evenly between sampling containers. All soils were inspected upon excavation and once material was inspected, Samples were placed into laboratory-supplied containers including 250 ml glass jars with Teflon lined lids for contaminant testing; High-density polyethylene (HDPE) containers for PFAS testing; and resealable plastic zip-lock bags for asbestos testing.

Activity	Details
Soil Sample Collection	Soil samples collected during the investigation are summarised below: Soil samples were collected from 28 boreholes (from fill and natural soil horizons, where applicable) at BH01, BH02, BH03, BH04, BH05, BH06, BH07, BH08, BH09, BH10, BH11, BH12, BH13, BH14, BH15, BH16, BH17, BH18, BH19, BH20, BH21, BH22, BH23, BH24, BH25, BH26, BH27, and BH28. Soil samples were collected from 51 hand augers (from fill soil horizons) at HA101, HA102, HA103, HA104, HA105, HA106, HA107, HA108, HA109, HA110, HA111, HA112, HA113, HA114, HA115, HA116, HA201, HA202, HA203, HA204, HA301, HA302, HA303, HA304, HA305, HA306, HA307, HA308, HA309, HA310, HA311, HA312, HA313, HA314, HA315, HA316, HA317, HA318, HA319, HA320, HA321, HA322, HA323, HA324, HA325, HA326, HA327, HA328, HA329, HA330, and HA331.
Soil Sample Analysis Selection	Soil samples were selected for analysis based on contaminant indicators such as odours, PID readings, staining or anthropogenic materials mixed through the fill / natural soil profile. In the absence of contaminant indicators, samples were selected to provide site characterisation to a level appropriate for the limitations of the assessment (i.e., coverage across relevant soil profiles and soil types). Samples collected on 19, 20 and 21 December 2022 were analysed as follows: • 107 primary soil samples were collected, and 32 samples analysed at a laboratory • Seven intra-laboratory duplicates, two were analysed at a laboratory • Seven inter-laboratory duplicates, two were analysed at a laboratory Samples collected on 25 January were analysed as follows: • 29 primary soil samples were collected, and 24 samples analysed at a laboratory • Two intra-laboratory duplicates, both were analysed at a laboratory • Two inter-laboratory duplicates, both were analysed at a laboratory • One rinsate sample Samples collected on 03 February 2023 were analysed as follows: • 8 primary soil samples were collected, and 4 samples analysed at a laboratory • One intra-laboratory duplicates, analysed at a laboratory • One inter-laboratory duplicates, analysed at a laboratory • One trip blank, analysed at a laboratory • One trip spike, analysed at a laboratory Samples collected on 10 February 2023 were analysed as follows: • 62 primary soil samples were collected, and 31 samples analysed at a laboratory • Four intra-laboratory duplicates, three were analysed at a laboratory • Four inter-laboratory duplicates, three were analysed at a laboratory • Three water samples, all analysed at a laboratory • One rinsate sample, analysed at a laboratory • One trip blank, analysed at a laboratory • One trip spike, analysed at a laboratory The primary samples were submitted to NATA accredited SGS Environmental Services and the inter-lab duplicate was submitted to Eurofins Environmental Testing. A summary of samples and analytes are provided in **Appendix G** and NATA laboratory reports and chain of custody documentation are provided in **Appendix I**.
Borehole Reinstatement	All boreholes were backfilled with the soil removed during drilling and reinstated and levelled to ground surface.
Decontamination Procedure	Sampling Equipment – nitrile gloves were disposed of and replaced between each sampling location.

Activity	Details
	Drill auger and hand auger – the drill auger and hand auger were cleared of residual soil waste and was rinsed using Liquinox (a phosphate-free detergent) and potable water between each test location.
Sample Preservation and Transport	Following collection, soil samples, were placed directly in laboratory-supplied glass jars, and/or zip-lock bags and stored on ice in an esky until the end of the day when they were transferred to a fridge/freezer overnight. Upon completion of the fieldwork, samples were stored on ice in an esky during sample transit to the laboratory under standard Chain of Custody documentation procedure.
Laboratory Analysis	Soil samples collected on 19, 20 and 21 December 2022 were submitted for analysis for the following contaminants of concern: • Total Recoverable Hydrocarbons (TRH) • Benzene, Toluene, Ethylbenzene, Xylenes, Naphthalene (BTEXN) • Polycyclic Aromatic Hydrocarbons (PAH) • Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) • pH/pHFOX • Metals • Asbestos (quantification) Soil samples collected on 25 January 2023 were submitted for analysis for the following contaminants of concern: • Lead • Zinc • Total Recoverable Hydrocarbons (TRH) • Asbestos (quantification) Soil samples collected on 3 February 2023 were submitted for analysis for the following contaminants of concern: • BTEX • PAH • Lead • Asbestos Soil samples collected on 10 February 2023 were submitted for analysis for the following contaminants of concern: • Lead • Zinc • Asbestos Water samples collected from garden taps surrounding Building D on 10 February 2023 were submitted for analysis for the following contaminants of concern: • Total Lead • Total zinc

9.0 RESULTS

9.1 FIELD OBSERVATIONS

Twenty-eight sampling points were advanced during the initial investigation, with a further 51 sampling points advanced during the data gap investigations. Ground conditions encountered across the site were relatively uniform. The subsurface profiles encountered are summarised in **Table 9-1** below, and presented in graphical borehole logs attached in **Appendix H**.

Table 9-1 Subsurface Conditions Summary

BH ID	Soil Description / Depth (m) BGL											
	Fill (Silty Sand)	Fill (Sandy Gravel)	Fill (Silty Gravel)	Fill (Silty Clay)	Fill (Clayey Sand)	Fill (Sand)	Alluvium (Clay with Sand and Trace Gravel)	Natural Silty Sand	Natural Silty Clay	Natural Silty Sand / Sandstone / Weathered Rock	Anthropo-genics	Depth
BH01	0.0 – 0.7						0.7 – 1.3	1.3 – 1.5			No	1.5 (TD)
BH02	0.0 – 0.7						0.7 – 1.5				No	1.5 (TD)
BH03	0.0 – 0.7						0.7 – 1.2	1.2 – 1.5			No	1.5 (TD)
BH04	0.0 – 0.7						0.7 – 1.2		1.2 – 1.5		No	1.5 (TD)
BH05	0.0 – 0.5						0.5 – 1.2	1.2 – 1.5			No	1.5 (TD)
BH06	0.0 – 0.4	0.4 – 0.5								0.5 – 1.8	No	1.8 (R)
BH07	0.0 – 0.4	0.4 – 0.8								0.8 – 1.74	No	1.74 (R)
BH08	0.0 – 0.5						0.5 – 0.9	0.9 – 2.1		2.1 – 3.1	No	3.1[2]
BH09	0.0 – 0.5						0.5 – 0.65	0.65 – 1.51			No	1.51 (R)
BH10	0.0 – 0.3							0.3 – 0.9		0.9 – 1.0	No	1.0 (R)
BH11	0.0 – 0.3									0.3 – 0.5	No	0.5 (R)
BH12	0.0 – 0.8						0.8 – 1.4			1.4 – 1.6	No	1.6 (R)
BH13	0.0 – 0.3						0.3 – 0.45	0.45 – 0.6		0.6 – 0.71	No	0.71 (R)
BH14	0.0 – 0.5						0.5 – 1.1			1.1 – 1.6	No	1.6[3]
BH15	0.0 – 0.6[1]						0.6 – 1.0			1.0 – 1.3	No	1.3 (R)
BH16	0.0 – 1.0									1.0 – 1.51	No	1.51 (R)
BH17	0.0 – 0.3							0.3 – 0.6		0.6 – 0.91	No	0.91 (R)
BH18	0.0 – 0.6							0.6 – 0.95		0.95 – 1.21	No	1.21 (R)

BH ID	Soil Description / Depth (m) BGL											
	Fill (Silty Sand)	Fill (Sandy Gravel)	Fill (Silty Gravel)	Fill (Silty Clay)	Fill (Clayey Sand)	Fill (Sand)	Alluvium (Clay with Sand and Trace Gravel)	Natural Silty Sand	Natural Silty Clay	Natural Silty Sand / Sandstone / Weathered Rock	Anthropo-genics	Depth
BH19	0.0 – 0.4						0.4 – 1.0	1.0 – 1.3		1.3 – 1.7	No	1.7 (R)
BH20	0.0 – 0.5						0.5 – 1.1	1.1 – 1.3		1.3 – 1.51	No	1.51 (R)
BH21	0.0 – 0.4									0.4 – 0.8	No	0.8 (R)
BH22	0.0 – 0.6						0.6 – 1.1	1.1 – 1.4		1.4 – 1.66	No	1.66 (R)
BH23	0.0 – 0.5						0.5 – 0.65			0.65 – 1.63	No	1.63 (R)
BH24	0.0 – 0.3									0.3 – 1.01	No	1.01 (R)
BH25	0.0 – 0.9[1]						0.9 – 1.1			1.1 – 1.38	No	1.38[2]
BH26	0.0 – 0.7						0.7 – 1.1	1.2 – 1.35			No	1.35 (TD)
BH27	0.0 – 1.2						1.2 – 1.5				No	1.5 (TD)
BH28	0.0 – 0.7						0.7 – 0.9	0.9 – 1.5			No	1.5 (TD)
HA101	0.0 – 0.17										No	0.17 (R)
HA102	0.0 – 0.3										No	0.3 (TD)
HA103	0.0 – 0.3										No	0.3 (TD)
HA104	0.0 – 0.25	0.25 –0.3									Yes (soft plastics, PVC fragments)	0.3 (TD)
HA105	0.0 – 0.3										No	0.3 (TD)
HA106	0.0 – 0.3										No	0.3 (TD)
HA107	0.0 – 0.16										Potential brick	0.16 (R)
HA108	0.0 – 0.15	0.15 –0.3									No	0.3 (TD)
HA109	0.0 – 0.3										No	0.3 (TD)

BH ID	Soil Description / Depth (m) BGL											
	Fill (Silty Sand)	Fill (Sandy Gravel)	Fill (Silty Gravel)	Fill (Silty Clay)	Fill (Clayey Sand)	Fill (Sand)	Alluvium (Clay with Sand and Trace Gravel)	Natural Silty Sand	Natural Silty Clay	Natural Silty Sand / Sandstone / Weathered Rock	Anthropo-genics	Depth
HA110	0.0 – 0.3										No	0.3 (TD)
HA111	0.0 – 0.3										No	0.3 (TD)
HA112	0.0 – 0.15	0.15 –0.3									No	0.3 (TD)
HA113	0.0 – 0.12										No	0.12 (R)
HA114				0.0 – 0.3							No	0.3 (TD)
HA115	0.0 – 0.2	0.2 – 0.28									No	0.28 (R)
HA116			0.2 – 0.3	0.0 – 0.2							No	0.3 (TD)
HA201	0.0 – 0.3										Yes (plastics)	0.3 (TD)
HA202	0.0 – 0.3										Yes (brick, plastics)	0.3 (TD)
HA203	0.0 – 0.3										No	0.3 (TD)
HA204	0.0 – 0.3										Yes (brick, tiles, wood, glass)	0.3 (TD)
HA301	0.0 – 0.3										No	0.3 (TD)
HA302	0.0 – 0.3										No	0.3 (TD)
HA303	0.0 – 0.3										No	0.3 (TD)
HA304	0.0 – 0.3										No	0.3 (TD)
HA305	0.0 – 0.3										No	0.3 (TD)
HA306	0.0 – 0.3										Yes (plastics)	0.3 (TD)
HA307	0.0 – 0.1										No	0.1 (R)

BH ID	Soil Description / Depth (m) BGL											
	Fill (Silty Sand)	Fill (Sandy Gravel)	Fill (Silty Gravel)	Fill (Silty Clay)	Fill (Clayey Sand)	Fill (Sand)	Alluvium (Clay with Sand and Trace Gravel)	Natural Silty Sand	Natural Silty Clay	Natural Silty Sand / Sandstone / Weathered Rock	Anthropo-genics	Depth
HA308	0.0 – 0.3										No	0.3 (TD)
HA309	0.0 – 0.3										Yes (nails)	0.3 (TD)
HA310				0.0 – 0.3							Yes (tile)	0.3 (TD)
HA311			0.0 – 0.3								No	0.3 (TD)
HA312	0.0 – 0.3										No	0.3 (TD)
HA313	0.0 – 0.3										No	0.3 (TD)
HA314	0.0 – 0.3										No	0.3 (TD)
HA315	0.0 – 0.3										No	0.3 (TD)
HA316	0.0 – 0.3										No	0.3 (TD)
HA317	0.0 – 0.1			0.1 – 0.3							Yes (tile)	0.3 (TD)
HA318				0.0 – 0.3							Yes (gravel)	0.3 (TD)
HA319	0.1 – 0.3				0.1 – 0.3						Yes (gravel)	0.3 (TD)
HA320	0.0 – 0.3										No	0.3 (TD)
HA321	0.0 – 0.3										No	0.3 (TD)
HA322	0.0 – 0.3										No	0.3 (TD)
HA323	0.0 – 0.3										No	0.3 (TD)
HA324	0.0 – 0.3[4]										Yes (concrete)	0.3 (TD)
HA325	0.0 – 0.3										Yes (plastic)	0.3 (TD)
HA326	0.0 – 0.3										Yes (glass)	0.3 (TD)

BH ID	Soil Description / Depth (m) BGL											
	Fill (Silty Sand)	Fill (Sandy Gravel)	Fill (Silty Gravel)	Fill (Silty Clay)	Fill (Clayey Sand)	Fill (Sand)	Alluvium (Clay with Sand and Trace Gravel)	Natural Silty Sand	Natural Silty Clay	Natural Silty Sand / Sandstone / Weathered Rock	Anthropo-genics	Depth
HA327	0.0 – 0.3										No	0.3 (TD)
HA328	0.0 – 0.3										Yes (plastic)	0.3 (TD)
HA329					0.0 – 0.1	0.1 – 0.3					Yes (plastic)	0.3 (TD)
HA330	0.0 – 0.3										No	0.3 (TD)
HA331	0.0 – 0.3										Yes (metal, brick, ACM fragment)	0.3 (TD)

Notes:
All depths measured in metres below ground surface level at the time of the investigation.

- TD = Termination Depth.
- BGL = Below Ground Level
- R = Termination due to refusal

1. Strata change at 0.4m – still silty sand, fill material
2. Coring started from 1.5m – no further soil contamination samples collected
3. Coring started from 1.6m – no further soil contamination samples collected
4. Strata change at 0.2m – still silty sand, fill material

9.2 ANALYTICAL RESULTS

The soil laboratory analytical results obtained during Stantec's investigation are presented in the laboratory summary tables provided in **Appendix G** and the laboratory reports in their entirety are provided in **Appendix I**.

9.2.1 Human Health Criteria

With the exception of the samples listed below in **Table 9-2**, all chemical analyte results were recorded below the laboratory LOR, or the applicable human health criteria.

Table 9-2 Human Health Criteria Exceedances

Analyte	HIL Criteria	Exceedance Location	Laboratory Result
Lead	300 mg/kg	BH14_0.2	380 mg/kg
		BH15_0.2	380 mg/kg
		QA400 (primary sample BH15_0.2)	490 mg/kg
		QC400 (primary sample BH15_0.2)	320 mg/kg
		HA102_0.1	970 mg/kg
		HA102_0.3	910 mg/kg
		HA103_0.1	2500 mg/kg
		HA103_0.3	1200 mg/kg
		HA104_0.1	390 mg/kg
		HA104_0.3	460 mg/kg
		HA108_0.1	310 mg/kg
		HA108_0.3	480 mg/kg
		HA109_0.1	310 mg/kg
		HA109_0.3	350 mg/kg
		HA111_0.1	530 mg/kg
		HA111_0.3	360 mg/kg
		HA112_0.1	300 mg/kg
		QC200 (primary sample HA112_0.1)	420 mg/kg
		HA112_0.3	350 mg/kg
		HA309_0.1	340 mg/kg
		HA311_0.1	460 mg/kg
		QA111 (primary sample HA311_0.1)	460 mg/kg
		HA331_0.1	1600 mg/kg

Asbestos was detected in the following samples from HA331_0.2, exceeding the HIL criteria:

- One (1) fragment of bonded fibre cement sheeting (HA331_0.2_PACM) – bonded asbestos fragment – chrysotile asbestos detected
- HA331_0.2 – bonded asbestos fragments in soil at 0.01% w/w – chrysotile asbestos detected

9.2.2 Ecological and Other Criteria

With the exception of the samples listed below in **Table 9-3**, all results were below the adopted site criteria.

Table 9-3 Ecological and Other Criteria Exceedances

Analyte	HIL Criteria	Exceedance Location	Laboratory Result
Lead	1100 mg/kg	HA103_0.1	2500 mg/kg
		HA103_0.3	1200 mg/kg
		HA331_0.1	1600 mg/kg
Zinc	220 mg/kg	BH14_0.2	230 mg/kg
		BH15_0.2	260 mg/kg
		QA400 (primary sample BH15_0.2)	290 mg/kg
		QC400 (primary sample BH15_0.2)	250 mg/kg
		HA102_0.1	870 mg/kg
		HA102_0.3	880 mg/kg
		HA103_0.1	1900 mg/kg
		HA103_0.3	1000 mg/kg
		HA104_0.1	910 mg/kg
		HA104_0.3	960 mg/kg
		HA108_0.1	220 mg/kg
		HA108_0.3	370 mg/kg
		HA111_0.1	310 mg/kg
		HA111_0.3	310 mg/kg
		QC200 (primary sample HA111_0.3)	240 mg/kg
		HA116_0.1	430 mg/kg
		HA309_0.1	280 mg/kg
		HA310_0.1	230 mg/kg
		HA317_0.1	290 mg/kg
		HA319_0.1	230 mg/kg
		HA321_0.1	550 mg/kg
		HA330_0.1	220 mg/kg
		HA331_0.1	830 mg/kg
Nickel	8 mg/kg	BH15_0.2	11 mg/kg
		QA400 (primary sample BH15_0.2)	11 mg/kg
		QC400 (primary sample BH15_0.2)	10 mg/kg
TRH F3 (C_{16} – C_{34})	300 mg/kg	BH15_0.2	380 mg/kg
		QA400 (primary sample BH15_0.2)	330 mg/kg
		QC400 (primary sample BH15_0.2)	490 mg/kg

9.3 AESTHETIC CONSIDERATIONS

Schedule B1 Section 3.6 of the (NEPC, 2013) provides guidance for the assessment of soils based on aesthetic values as a result of impacts from low concern or non-hazardous inert foreign material in soil or fill material as a result of human activity. Locations within the site contained fill materials with minor quantities of anthropogenic materials, including gravel, glass, brick, plastic, metal, tiles, nails, bonded ACM.

With the exception of asbestos / ACM, the type, quantity and nature of anthropogenic material found in fill across the majority of the site was determined not to pose a risk to human health or be likely to cause visual concern if they were reused on site.

10.0 QUALITY ASSURANCE / QUALITY CONTROL

An assessment of the data quality was undertaken in accordance with the Data Quality Indicators for the field work and the laboratory. Details of this assessment are provided in **Appendix J**.

11.0 DISCUSSION

11.1 SITE CHARACTERISATION

All examined soil samples were evaluated on a qualitative basis for odour and visual signs of contamination (e.g., hydrocarbon odours, oil staining, petrochemical filming, asbestos fragments, ash, slag) and the following observations were noted:

- A consistent fill material was identified across the site to a maximum depth of 1.2mBGL at BH27. It is noted that the average depth of fill across site was 0.59mBGL based on the 28 boreholes that penetrated into the natural stratum.
- Anthropogenic material (soft plastics, plastic tape, PVC pipe fragments, metal, nails, tile, brick, concrete, glass) was observed in trace quantities in fill material in HA104, HA201, HA202, HA204, HA306, HA309, HA310, HA316, HA317, HA324, HA325, HA326, HA328, HA329 and HA331
- Asbestos containing material (ACM) was observed in fill material at location HA331. A recovered fragment (HA331_0.2_PACM) was tested and asbestos was identified as bonded chrysolite asbestos Sample HA331_0.2 (taken at the location of HA331_0.2_PACM) was tested and asbestos was identified as bonded fragments in soil (0.01%w/w). Asbestos was not observed within other excavated locations and was not detected in other locations in laboratory analysis.
- PID readings were relatively low, with the maximum reading recorded as 12ppm in sample BH06_1.5 (note that no other sample PID reading was above 8.5ppm). These levels indicated a low likelihood of volatile organic compounds being present.
- No visual or olfactory evidence of contamination was observed.
- Indicators of acid sulfate soils and salinity were not observed.
- Groundwater was not observed at any of the locations.
- Tap water from garden taps around Building D (the epicentre of soil contamination) was found not to contain metals at concentrations above human health or ecological criteria for total lead or total zinc.

Analytical results showed:

- All tested contaminants of concern analysed were found to be below the human health, ecological criteria and Management Limits screening criteria in this area, with the exception of lead, zinc, nickel, asbestos and TRH F3: C16-C34.
- TRH F3: C16-C34 was found to exceed ecological criteria in the primary sample, field duplicate and field triplicate samples taken at BH15_0.2. Silica gel clean-up testing of BH15_0.2 found hydrocarbon levels below the adopted site criterial. The exceedance TRH concentration appeared to be as a result of organic material, not synthetic hydrocarbons and thus may not pose a direct risk to human health and the environment.

11.2 DISCUSSION

The assessment findings suggest that soil contamination impact at the site may pose a potential risk to both human health and the environment. The main contaminants of concern include:

- Asbestos

- Lead

The asbestos containing material was limited to one excavation location (HA331) which was located adjacent east of Building D. Fragments have been identified in the subfloor and building eaves of Building D in the southern side of the building, the fragment may be associated with previously identified asbestos and ACM removal activities. Based on review of provided asbestos building materials register, ACM has been identified in external features of Buildings A and D. We note that there might still be potential occurrence of unidentified asbestos in soil within the vicinity of these structures, which might be related to historical demolition activities, poor construction and maintenance practices.

Lead and zinc exceedances, initially recorded in soil sample BH15_0.2, were delineated during the data gap investigations. The January 25 site sampling activity was undertaken to confirm if the soil analytical exceedances were genuine instances of contamination and if so what level of contamination was present around areas of potential concern. The subsequent February 10 investigation was to further quantify the contamination confirmed by the earlier sampling, and to identify the contamination extent to inform a remediation strategy.

11.3 CONCEPTUAL SITE MODEL

With the additional information collected as part of this site contamination assessment, the preliminary CSM summarised in Section 5.0 has been reconsidered and updated. Many of the previously identified PAEC have been removed as potential sources of contaminant risk, however, a few potential sources remain and are summarised in **Table 11-1** below.

Table 11-1 Revised Conceptual Site Model

Contaminant Source	Impacted Media	Contaminants of Potential Concern	Potential Exposure Pathways	Receptors	Likelihood of Completeness
Hazardous building materials contained within former and existing site structures Weathering of exposed building structures	Surficial Soils	Lead Zinc Asbestos	Direct Contact Incidental Inhalation Incidental Ingestion	**Human:** Current site users Future Site workers (including maintenance workers) Neighbouring site users (including neighbouring basement users) **Ecological:** Existing and future plant-based biota within the site	**High:** if unmanaged given the high likelihood of exposure by children and other site users - receptors who come in contact with site's soils

11.4 DATA GAPS AND UNCERTAINTIES

Based on the findings of this investigation, the following data gaps are noted:

- The assessment of contamination was limited to the location of each borehole/ hand auger
- Hand auger and borehole sampling is generally considered unsuitable for a complete assessment of asbestos in soil risk due to the small volume of soil disturbed and assessed. A bonded asbestos fragments have been found at a single location in shallow soil (HA331_0.2). While this may be an isolated impacted, the asbestos building material register for the site indicates that further fragments have been identified in the subfloor of the adjacent Building D. Further assessment may be warranted using a test pitting methodology to delineate and limit the extent of asbestos impacted materials requiring management in this area.
- Soil quality beneath buildings and hardstand areas (particularly concrete pathways and the staff carpark) was inaccessible for a visual or intrusive assessment, so any potential contamination impact beneath the buildings is unknown.
- Groundwater quality and flow direction; and soil quality outside the study area footprint were not investigated.
- A hazardous materials survey was not completed for potentially hazardous building materials.
- Should excavation works be proposed for the area outside the site, then a soil and groundwater assessment are to be completed for the additional area of works

12.0 CONCLUSIONS

Stantec Australia Pty Ltd (Stantec) was engaged by Department of Education (DOE) to complete a Preliminary Desktop Site Investigation - Contamination (PDSIC) Report for Gillieston Public, located at the corner of Northview Street and Ryans Road, Gillieston Heights, NSW and legally identified as Lot 51 DP 1162489 (the site). At the time of preparing this report, this was the site assessed, however it is noted that the REF site boundary also includes Lot 2 DP1308605, located at 19 Northview Street.

DOE are in the process of developing planning approval requirements, the proponent is required to undertake a Preliminary Desktop Site Investigation – Contamination (PDSIC), to determine the suitability of the land for the proposed land use(s) (pre-kindy school). The primary objectives of this investigation were therefore to preliminarily evaluate the potential for site contamination to be present based on the historical land use, desktop searches and an intrusive investigation.

Upon completion of the agreed scope of works the following was concluded:

- Gillieston Public is proposed for land use as pre-kindy and K-6 school. While development plans are still being finalised, this investigation was undertaken to preliminarily identify potential contamination and aid in determining suitability of the site.
- Based on the desktop review of available documentation, the documented site history and land use of the Gillieston Public site and immediate surrounding appeared to have been used for educational purposes by ownership since at least 1898. The use of the site for educational purposes has continued to date. The site has undergone progressive development throughout the studied history, with the staged construction of current school infrastructure, noting that many of the current school buildings are temporary demountable buildings rather than permanent buildings, the most recent of which was added in late 2022. The surrounding land for the most part has not gone through significant changes and modifications during the assessed history, except for the south-east which has been developed with residences.
- Specific activities of relevance to potential contamination that appear to have occurred on site include demolition and filling.
- The site was not subject to regulation by the NSW EPA and was found to be free of statutory notices and licencing agreements under both the CLM Act 1997 and PoEO Act 1997 and was not included on the List of NSW Contaminated Site.
- Based on review of supplied asbestos building materials register asbestos has been identified in external features in Buildings A and D. Potential exists for further unidentified asbestos in soil in proximity with these structures associated with historical demolition work and poor construction and maintenance practices.

12.1 RECOMMENDATIONS

Based on the findings of this assessment and with reference to the proposed activity, purpose and objectives of this investigation, the following recommendations were made:

- Develop a Remediation Action Plan (RAP) and / or develop a site-specific Human Health and Ecological Risk Assessment (HHERA);
- Develop an Unexpected Finds Protocol to manage risks of unidentified impacts such as hazardous materials or waste in fill material at the site.

- Prepare a Construction and Environmental Management Plan (CEMP) to minimise potential risks to human health and the environment during implementation of the RAP;
- The preparation of waste classification assessments (as required) for disposal of impacted soil. It is recommended that stockpiling and assessment of each area or spoil type to confirm the final classification due to the heterogeneity in the fill material.
- Any material being removed from site (including virgin excavated natural materials or VENM) must be classified for off-site disposal in accordance the EPA (2014) Waste Classification Guidelines and/or a NSW EPA Resource Recovery Order.
- Based on the findings of this assessment and with reference to the proposed activity, Stantec recommends the development of:
  - A Remediation Action Plan (RAP) and/or Human Health and Ecological Risk Assessment (HHERA) for the site;
  - The preparation of waste classification assessments (as required); and
  - Site validation report to inform the site remediation work and future site activity plans.

13.0 MITIGATION MEASURES

See the below table that outlines the appropriate mitigation measures for contamination risks outlined in this report.

Table 14-1 Mitigation Measures

Project Stage Design (D) Construction (C) Operation (O)	Mitigation Measures	Relevant Section of report
D / C	A suitable Remediation Action Plan (RAP) is to be prepared that outlines the remediation strategy for the identified contamination above applicable land use criteria at the site.	Section 5.0, Section 9.0, Section 12.0 and Section 13.0.
D / C	The data gaps identified concerning contamination at the site should be assessed during future investigations/ remediation activity	Section 11.4 and Section 13.0

14.0 LIMITATIONS

The agreed scope of this assessment has been limited to a Preliminary Desktop Site Investigation Contamination as requested by DOE. The assessment may not identify contamination occurring in all areas of Gillieston Public School site or occurring after sampling was conducted at the site. Subsurface conditions may vary considerably away from the sample locations where information has been obtained.

This Document has been provided by Stantec subject to the following limitations:

- This Document has been prepared for the particular purpose outlined in Stantec's proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.
- The scope and the period of Stantec's services are as described in Stantec's proposal and are subject to restrictions and limitations. Stantec did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in this report. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Stantec in regard to it.
- Conditions may exist which were undetectable given the limited nature of the enquiry Stantec was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the Document. Accordingly, additional studies and actions may be required.
- In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. Stantec's opinions are based upon information that existed at the time of the production of this report . It is understood that the services provided allowed Stantec to form no more than an opinion of the actual conditions of the site at the time this report was prepared and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.
- Any assessments made in this report are based on the conditions indicated from published sources and the investigation described. No warranty is included, either express or implied, that the actual conditions will conform exactly to the assessments contained in this report.
- Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Stantec for incomplete or inaccurate data supplied by others.
- Stantec may have retained sub consultants affiliated with Stantec to provide services for the benefit of Stantec. To the maximum extent allowed by law, DOE acknowledges and agrees it will not have any direct legal recourse to, and waives any claim, demand, or cause of action against, Stantec's affiliated companies, and their employees, officers and directors.

This assessment report is not any of the following:

- A Detailed Site Investigation or Environmental Site Investigation sufficient for an Environmental Auditor to be able to conclude a Site Audit Report and Site Audit Statement.

- A Site Audit Report or Site Audit Statement as defined under the *Contaminated Land Management Act, 1997.*
- A geotechnical report and the bore logs or test pit logs may not be sufficient as the basis for geotechnical advice.
- A detailed hydrogeological assessment in conformance with NSW DEC (2007) Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination.
- An assessment of groundwater contaminants potentially arising from other sites or sources nearby.

A total assessment of the site to determine suitability of the entire parcel of land at the site for one or more beneficial uses of land.

15.0 REFERENCES

Australian Standard 4482.1-2005: Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil.

Guideline on the Investigation Levels for Soil and Groundwater' of the *National Environment Protection (Assessment of Site Contamination) Measure* (NEPM) *1999* (NEPC, 1999) as varied May 2013 (the 'NEPM 2013'); Standards Australia (2005).

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NSW EPA (2017) *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd edition)*. NSW Environment Protection Authority, Sydney. October 2017.

NSW EPA (2020) *Consultants Reporting on Contaminated Land*, Contaminated Land Guidelines, NSW Environment Protection Authority, Sydney, April 2020.

NSW Government (2021) *MinView*, Mining, Exploration and Geoscience, NSW Government, Regional NSW, Retrieved from: https://minview.geoscience.nsw.gov.au/#/?lon=148.9143&lat=-32.65607&z=6&bm=bm1&l=.

Office of Environment and Heritage (OEH) (2017) *Acid Sulfate Soils*. NSW Government, November 2017.

APPENDICES

Appendix A FIGURES

Location Plan

Gillieston Public School,
Gillieston Heights NSW

Project Code: 304100928-GS-022
Drawn By: MMM, Checked By: AES
Rev: 01
Date: 2023-01-13
Figure: 1

Stantec

Legend

- Site Boundary
- Watercourses
- Cadastre

Notes:
1. Coordinate System: GDA2020 MGA Zone 56

References:
1. Aerial imagery (MetroMap, June 2022)
2. Cadastre (NSW SS, 2022)
3. Watercourses (NSW SS)

0 200 400 600
Metres

Scale at A3: 1:1,500

This document has been prepared based on information provided by others as cited in the data sources. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

Site Plan

Gillieston Public School,
Gillieston Heights NSW

Project Code: 304100928-GS-021
Drawn By: MMM, Checked By: AES
Rev: 01
Date: 2023-03-10

Stantec

Legend

- Site Boundary
- Site Building
- Watercourses
- Cadastre
- Suburb Boundary

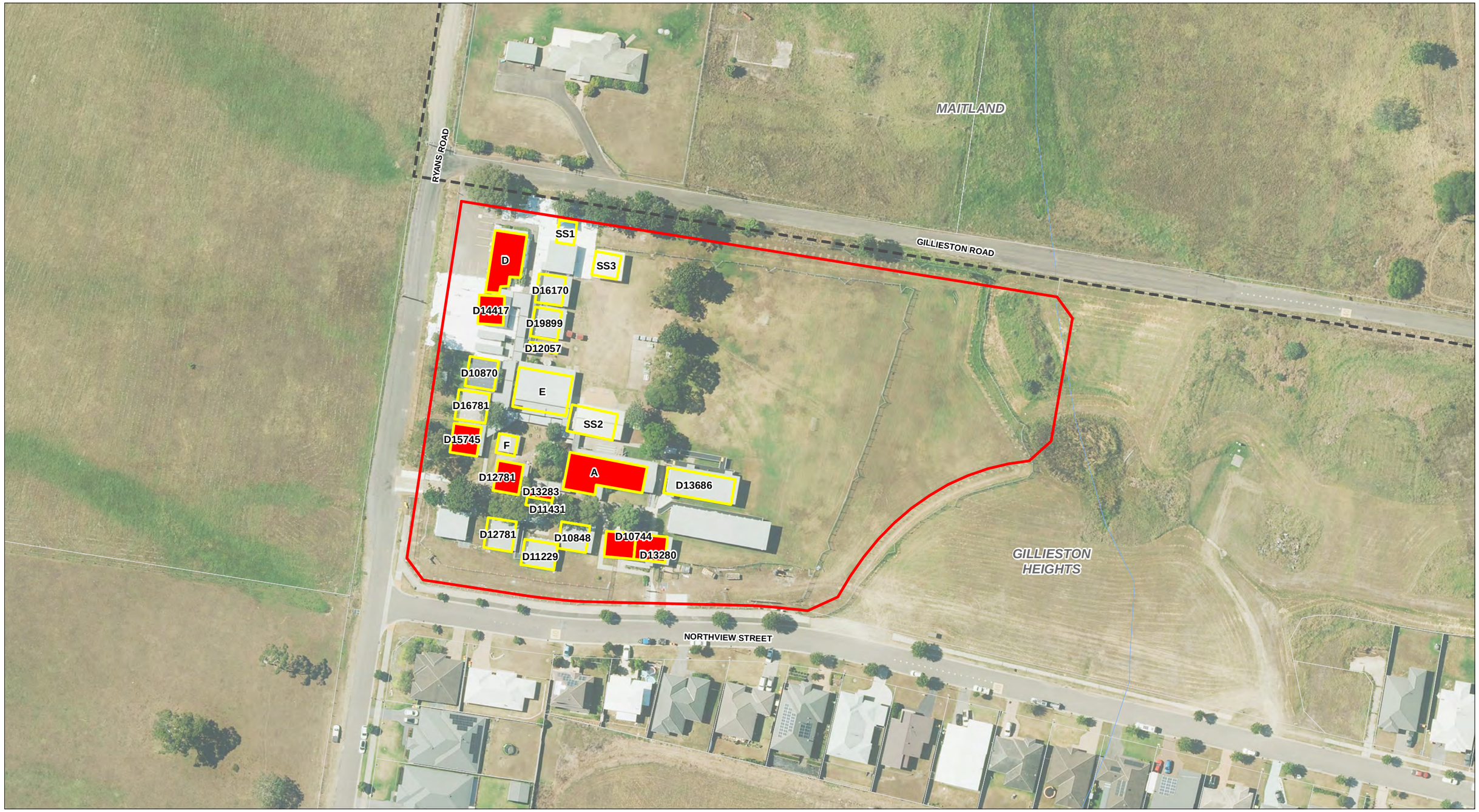
Notes:
1. Coordinate System: GDA2020 MGA Zone 56

References:
1. Aerial imagery (MetroMap, June 2022)
2. Cadastre (NSW SS, 2022)
3. Watercourses and Suburb Boundary (NSW SS)

0 20 40 60 Metres

Scale at A3: 1:1,500

This document has been prepared based on information provided by others as cited in the data sources. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.



Areas of Environmental Concern

Gillieston Public School,
Gillieston Heights NSW

Project Code: 304100928-GS-023
Drawn By: MMM, Checked By: AES
Rev: 01
Date: 2023-03-10

Stantec

Legend

- Site Boundary
- Site Building
- Area of Environmental Concern
- Watercourses
- Cadastre
- Suburb Boundary

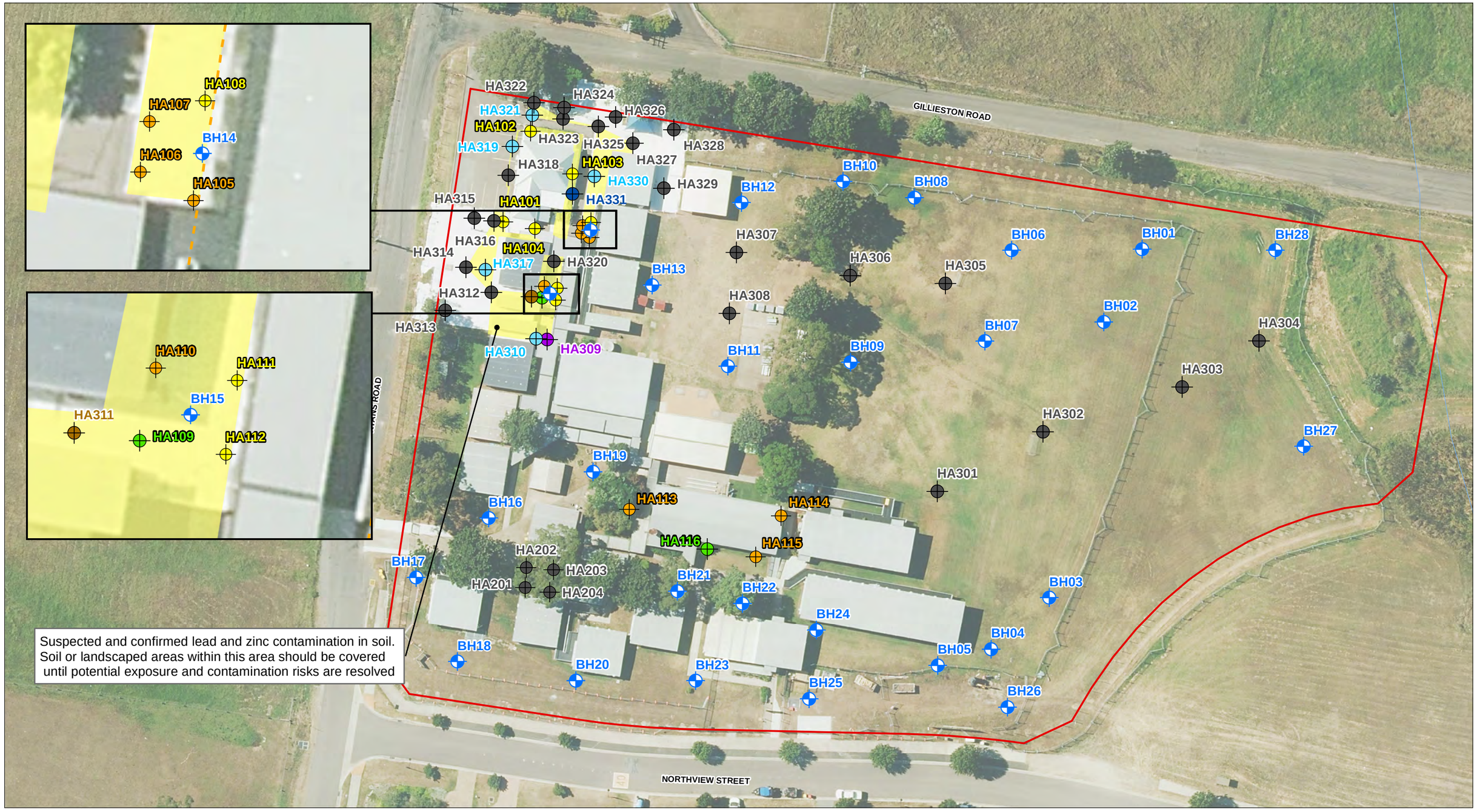
Notes:
1. Coordinate System: GDA2020 MGA Zone 56

References:
1. Aerial imagery (MetroMap, June 2022)
2. Cadastre (NSW SS, 2022)
3. Watercourses and Suburb Boundary (NSW SS)

0 20 40 60 Metres

Scale at A3: 1:1,500

This document has been prepared based on information provided by others as cited in the data sources. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.



Sampling and Remediation Extent Plan

Gillieston Public School,
Gillieston Heights NSW

Project Code: 304100928-GS-026
Drawn By: CC, Checked By: CL
Rev: 01
Date: 2023-03-10

Stantec

Legend

- Site Boundary
- Previous Bore Hole Locations
- Watercourse
- Approximate Lead and Zinc Remediation Area

Previous Hand Auger Locations

- No Exceedance
- Exceedance of HIL Criteria for Lead and EIL criteria for Zinc
- Exceedance of EIL Criteria for Zinc

Hand Auger Location (Data Gap Investigation)

- No Exceedance
- Exceedance of HIL Criteria for Lead
- Exceedance of HIL Criteria for Lead and EIL criteria for Zinc
- Exceedance of HIL Criteria for Lead and Asbestos and EIL criteria for Zinc
- Exceedance of EIL Criteria for Zinc

Notes:
1. Coordinate System: GDA2020 MGA Zone 56

References:
1. Aerial imagery (MetroMap, June 2022)
2. Cadastre (NSW SS, 2022)
3. Watercourses (NSW SS)

0 10 20 30 Metres

Scale at A3: 1:750

This document has been prepared based on information provided by others as cited in the data sources. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

Appendix B SITE PHOTOS

Figure 1 **Massenza MI2 drill rig used in initial intrusive investigation (BH01 – BH28). Taken in north-eastern corner of site (low-lying area).**

Figure 2 **View south from the eastern side of Building D. BH14, HA105-HA108 located in grass on left of image. BH15, HA109-HA112, HA309-311 and HA320 located in grass in centre of image.**

Figure 3 **View east along southern site boundary (Northview St visible in right of image) showing natural surface topography. Taken from approx. highest point on site.**

Figure 4 **View north from covered learning area in centre of school grounds. Natural soil topography sloping down gently to the north in direction of view. BH11-BH13, HA307, HA308, HA328 and HA329 located in grassed area visible.**

Figure 5 **Looking north-east down the sloped grounds. Taken from eastern side of eastern-most demountable school building.**

Figure 6 **View south past Building D. Building D shown as being of brick construction with new roof. HA103 and HA331 located in grass in centre of image. Laboratory results showed highest HIL and EIL exceedances of lead (HA103_0.1: 2500mg/kg, HA103_0.3: 1200 mg/kg and HA331_0.1: 1600mg/kg) and EIL exceedances of zinc (HA103_0.1: 1900mg/kg, HA103_0.3: 1000mg/kg and HA331_0.1: 830mg/kg) recorded on site. TAP03 sample taken from garden tap located by blue hose in image foreground.**

Figure 7 **Anthropogenic gravel found by HA101 – road base from nearby staff carpark construction.**

Figure 8 **Natural topsoil material sampled from HA301 – no anthropogenics or contamination present.**

Figure 9 **North-western corner of Building D, HA102 visible in grass. Flaking paint visible on window frame/sill.**

Figure 10 Western side of Building D, HA103 visible in grass. Flaking paint visible on window frame/sill.

Figure 11 **South-western corner of Building D. Garden tap used for TAP01 and TAP02 samples shown. Temporary ground covering applied to contain contamination visible.**

Figure 12 **Fill/ topsoil material sampled from HA311 – silty gravel (anthropogenic fill), laboratory results showed elevated lead levels above HIL criteria (460mg/kg recorded)**

Figure 13 **Silty-clay fill material from HA318 between Building D and staff carpark. Laboratory results showed no exceedances of HIL and EIL criteria.**

Figure 14 **Sandy-silt material sampled from HA321. Laboratory results showed zinc levels exceeding EIL criteria (550mg/kg recorded)**

Figure 15 HA331_0.2_PACM fragment visible in HA331. Laboratory analysis determined fragment to be bonded chrysolite asbestos.

Figure 16 **HA331 material taken from eastern side of Building D. Laboratory results showed lead exceedance of HIL and EIL criteria (1600mg/kg recorded) and zinc exceedance of EIL criteria (830mg/kg recorded). Asbestos identified as bonded fragments in soil at 0.01%w/w (exceeding HIL criteria)**

Appendix C LOTSEARCH

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 09 Dec 2022 14:19:38

Reference: LS038890 EP

Address: Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

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

Dataset Listing

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

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	04/11/2022	04/11/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	09/12/2022	14/10/2022	Monthly	1000m	0	0	1
Contaminated Land Records of Notice	Environment Protection Authority	01/12/2022	01/12/2022	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	06/12/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	09/12/2022	23/09/2022	Monthly	2000m	0	0	1
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	05/12/2022	05/12/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	05/12/2022	05/12/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	09/11/2022	09/11/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	01/12/2022	01/12/2022	Monthly	1000m	1	1	2
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	01/12/2022	01/12/2022	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	01/12/2022	01/12/2022	Monthly	1000m	3	3	4
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	1	1	1
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	1	1	13
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	1
Major Easements	NSW Department of Customer Service - Spatial Services	15/11/2022	15/11/2022	Quarterly	1000m	0	0	6
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	Annually	1000m	2	2	2
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	0	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	13
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	2
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	1	1	4
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	09/11/2022	28/10/2022	Monthly	500m	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	2
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	1	1	1
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	09/11/2022	09/11/2022	Quarterly	1000m	0	1	1
Current Mining Titles	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	7	7	8
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	2	4	16
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	18/10/2022	01/07/2022	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	09/11/2022	28/10/2022	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	05/12/2022	25/10/2022	Weekly	1000m	2	2	2
Lower Hunter and Central Coast Regional Vegetation Survey	NSW Office of Environment & Heritage	28/02/2015	16/11/2009	Annually	1000m	0	1	8
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	2
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	05/12/2022	05/12/2022	Weekly	10000m	-	-	-

Site Diagram

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 20643m²

Total Perimeter: 592m

Scale: 0 25 50 Meters

Data Source Aerial Imagery: © Aerometrex Pty Ltd

Disclaimers:

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

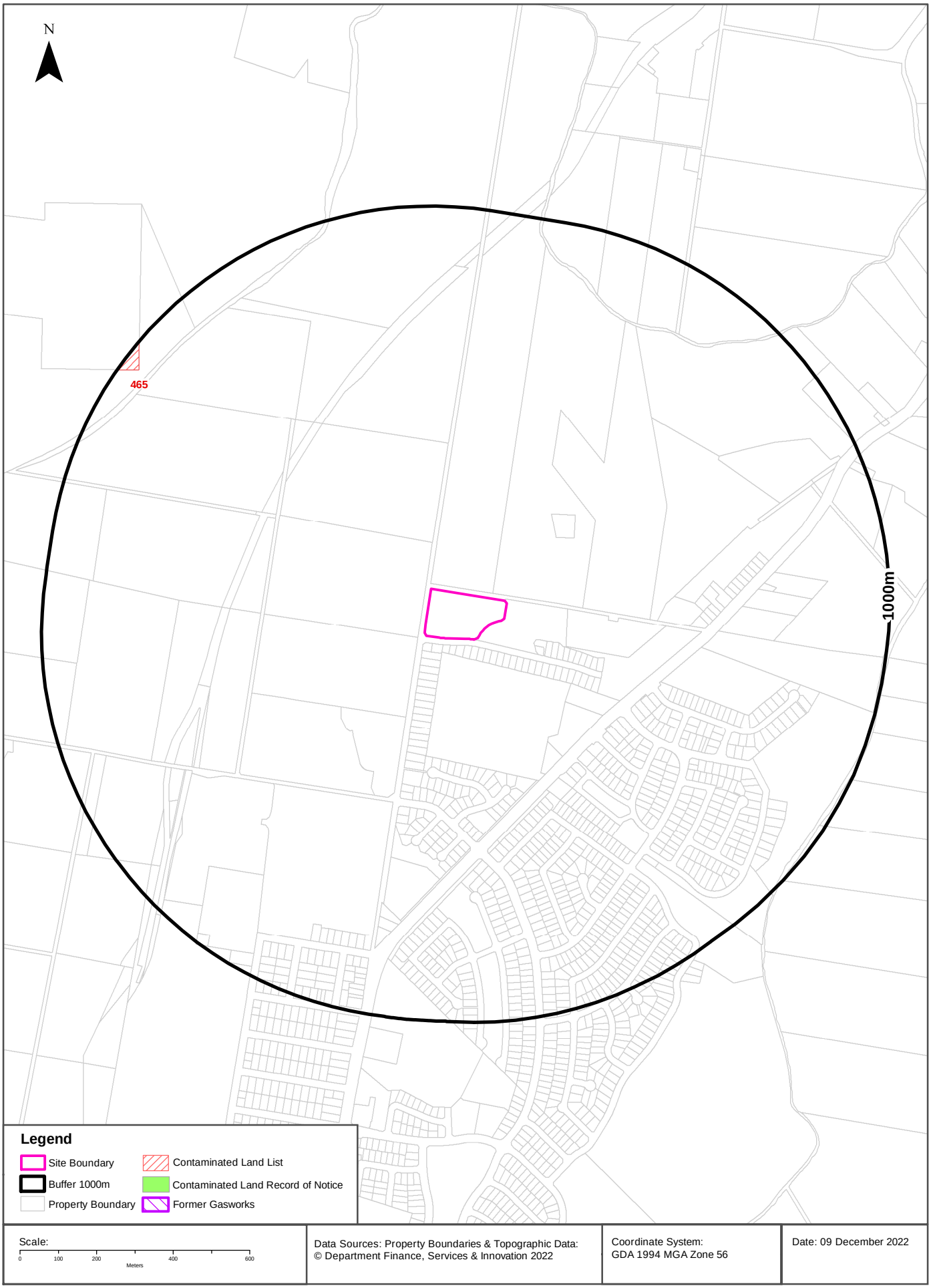
Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System: GDA 1994 MGA Zone 56

Date: 09 December 2022

Contaminated Land

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Contaminated Land

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
465	Farley Wastewater Treatment Works	Owlpen Lane	Farley	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	955m	North West

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Contaminated Land

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

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

Former Gasworks

Former Gasworks within the dataset buffer:

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

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

Waste Management & Liquid Fuel Facilities

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

National Waste Management Site Database

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

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

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

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
N/A	No records in buffer										

National Liquid Fuel Facilities Data Source: Geoscience Australia
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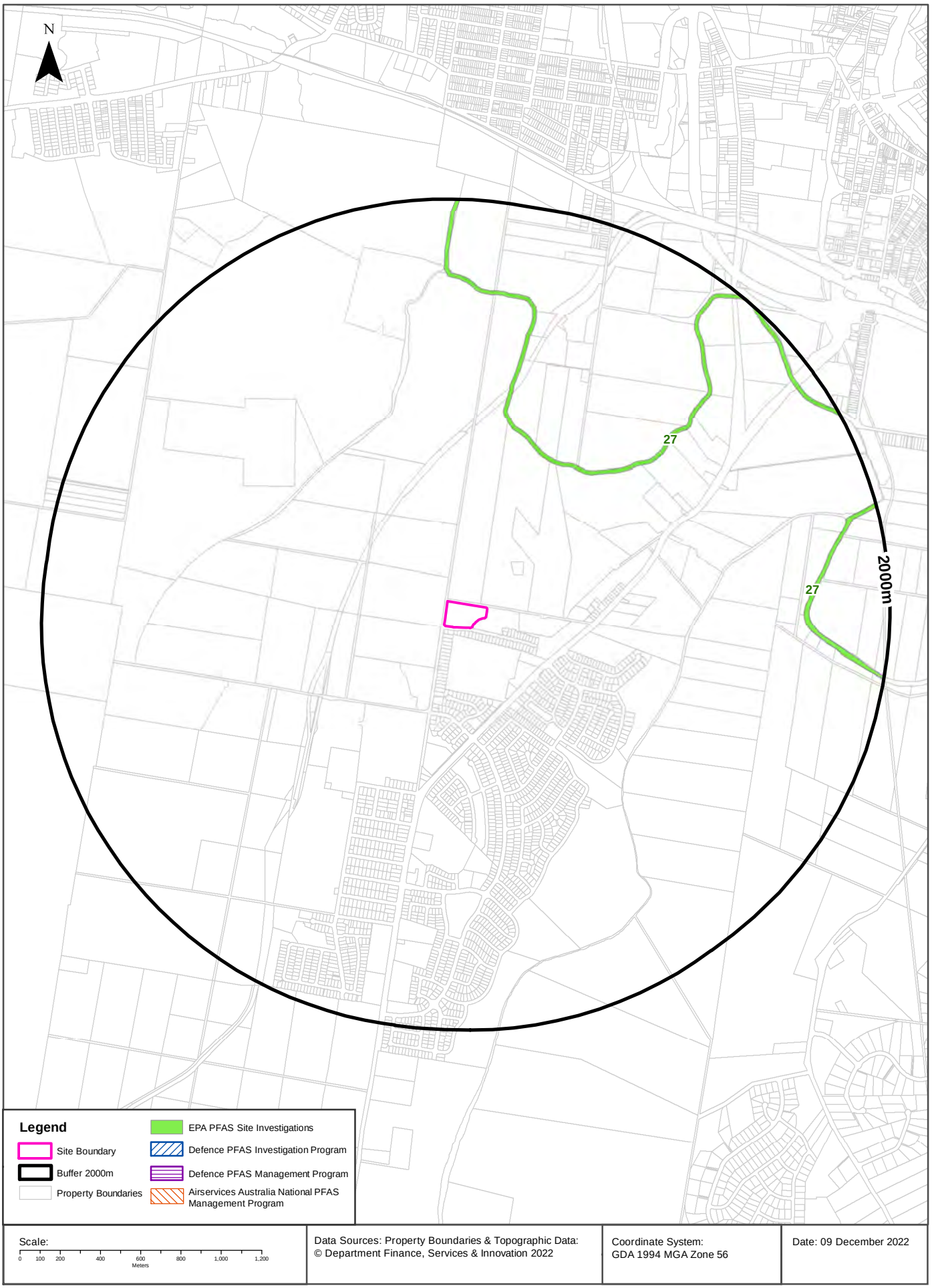
PFAS Investigation & Management Programs

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



PFAS Investigation & Management Programs

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

EPA PFAS Investigation Program

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

Map ID	Site	Address	Loc Conf	Dist	Dir
27	Rutherford, Truegain	62 Kyle St, Rutherford NSW 2320 + Stoney, Fishery & Wallis Creeks downstream	Network of Features	788m	North East

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

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Defence 3 Year Regional Contamination Investigation Program

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

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

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

EPA Other Sites with Contamination Issues

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

EPA Other Sites with Contamination Issues

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

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

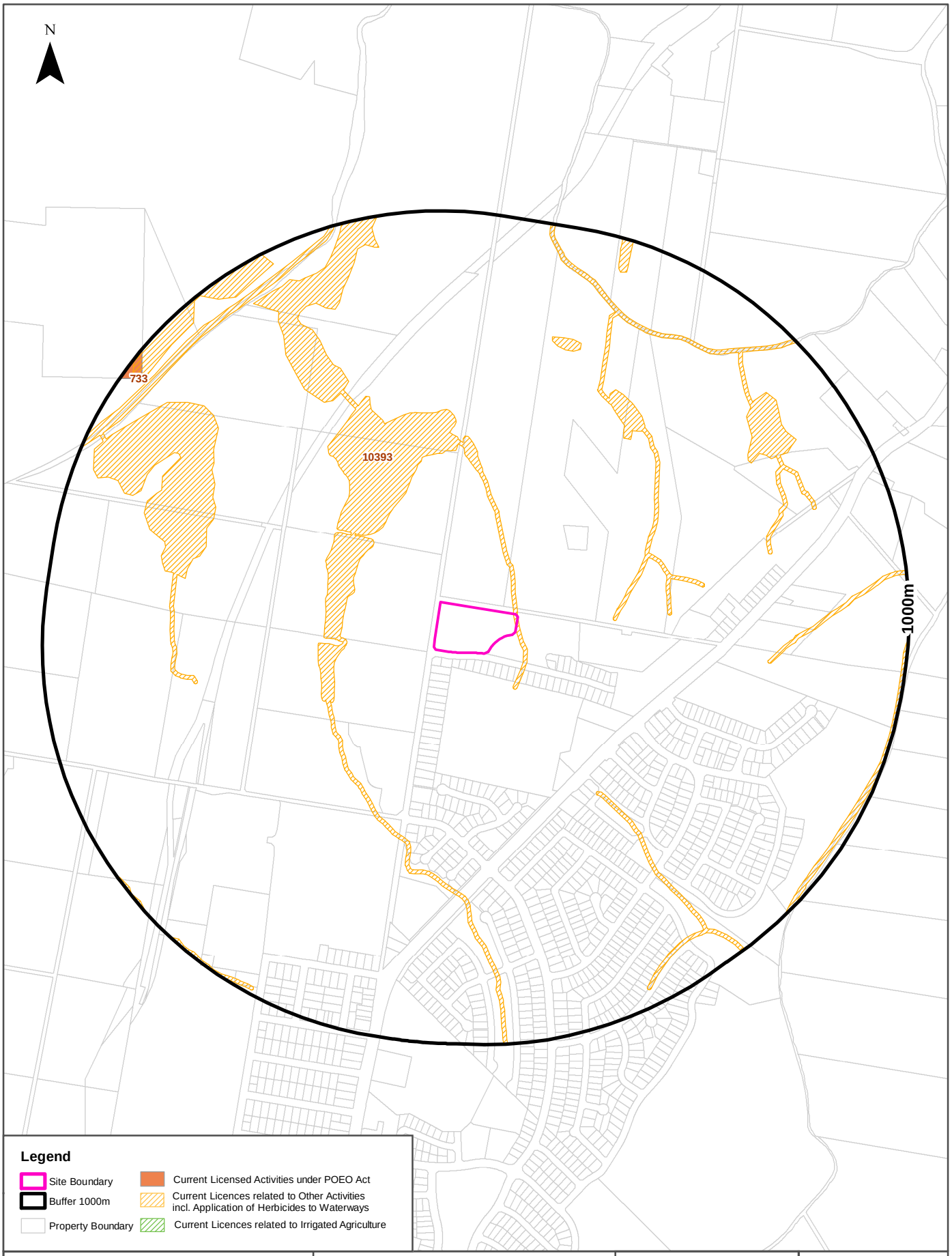
Sites within the dataset buffer:

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

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

Current EPA Licensed Activities

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



EPA Activities

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Licensed Activities under the POEO Act 1997

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

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
10393	MAITLAND CITY COUNCIL	ALL WATERBODIES IN THE MAITLAND LOCAL GOVERNMENT AREA	.	MAITLAND	Other activities	Network of Features	0m	On-site
733	HUNTER WATER CORPORATION	FARLEY WASTEWATER TREATMENT WORKS	Off Owl Pen Lane	FARLEY	Sewage treatment processing by small plants	Premise Match	955m	North West

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

Delicensed & Former Licensed EPA Activities

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

EPA Activities

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Delicensed Activities still regulated by the EPA

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

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

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

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

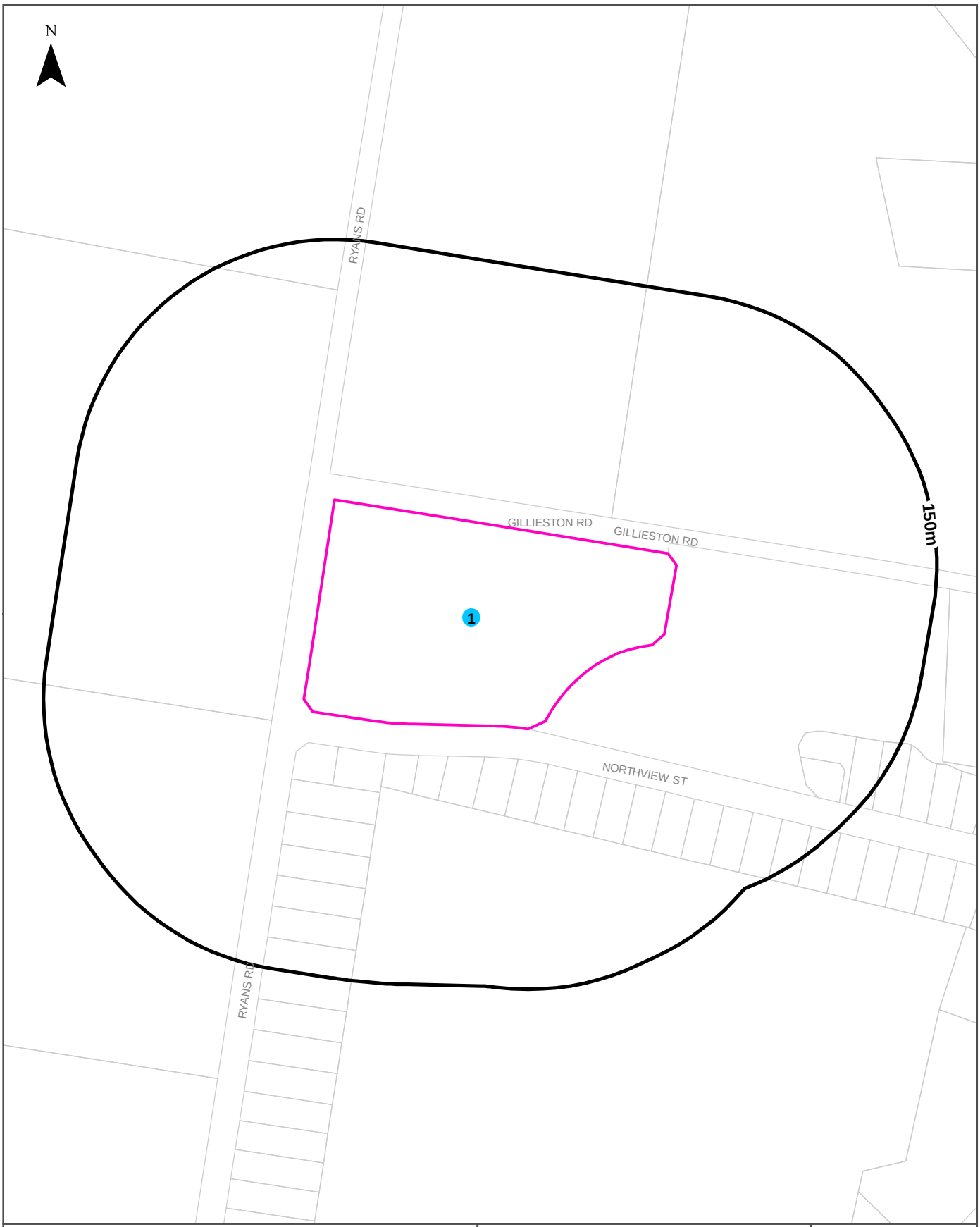
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
12439	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	Soil Conservation Service, Waterways within the Hunter Valley Flood Mitigation Scheme, MAITLAND	Surrendered	13/02/2007	Other Activities - Application of Herbicides	Network of Features	123m	North West

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

Historical Business Directories

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Legend

- Site Boundary
- Buffer 150m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 40 80 120 160 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 09 December 2022

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018
Property Boundaries © NSW Department Finance, Services & Innovation 2022

Historical Business Directories

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC.	Gillieston Public School., Gillieston Heights 2321	78862	1991	Premise Match	0m	On-site

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Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

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Historical Business Directories

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

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

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

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Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

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Aerial Imagery 2022

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Aerial Imagery 2015

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

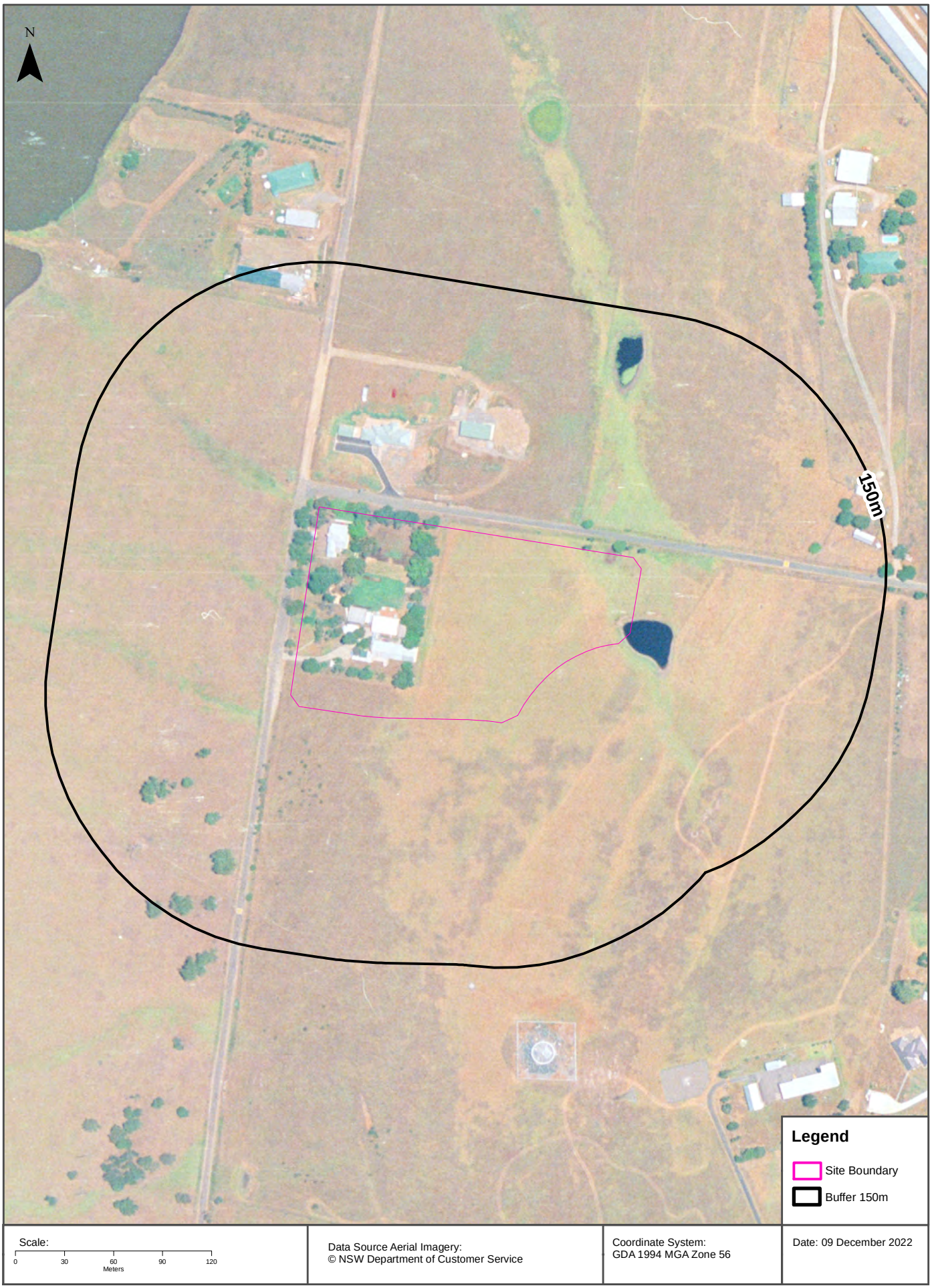
Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 09 December 2022

Aerial Imagery 2010

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Aerial Imagery 2001

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Aerial Imagery 1993

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Aerial Imagery 1983

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Aerial Imagery 1976

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Aerial Imagery 1965

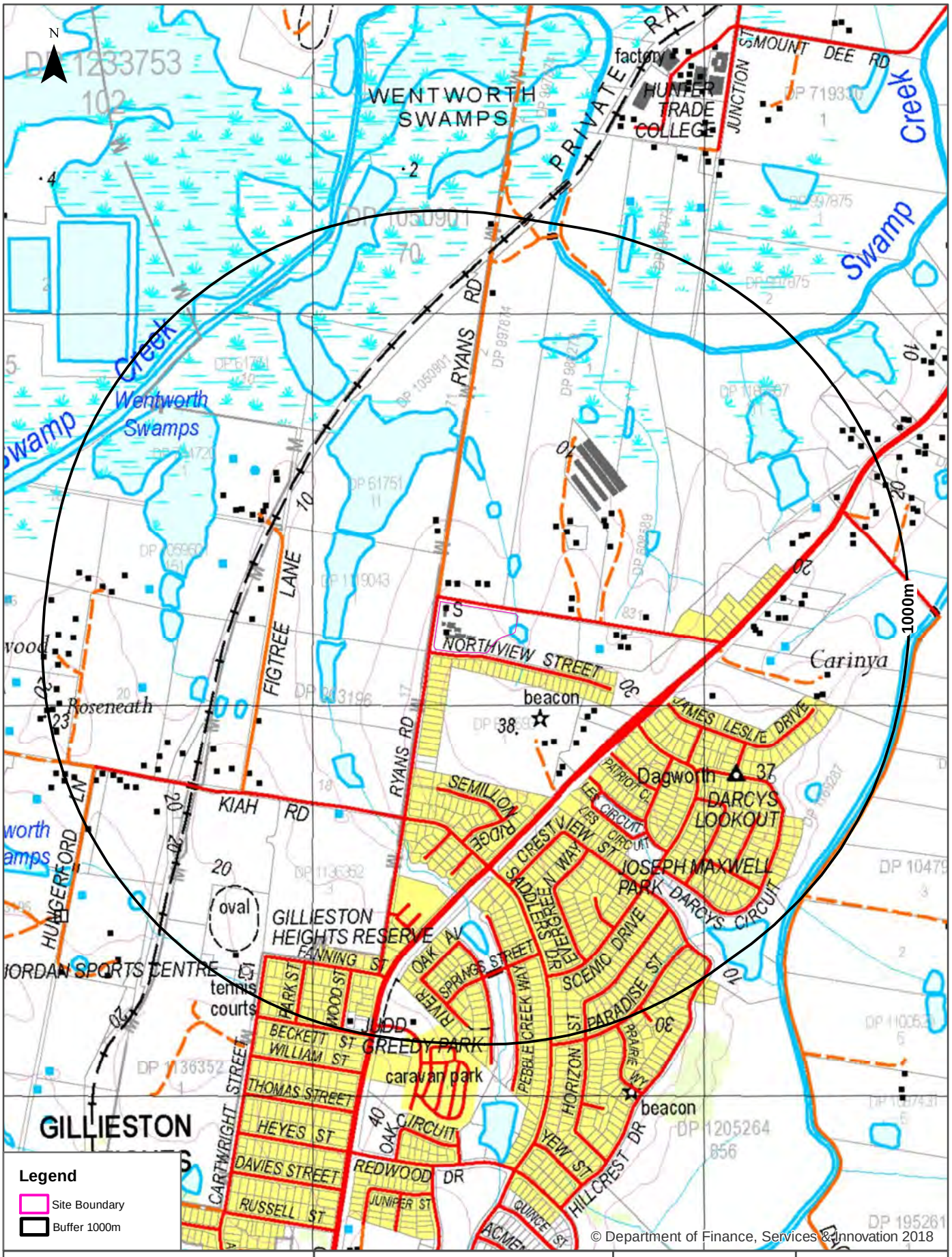
Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Aerial Imagery 1954

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

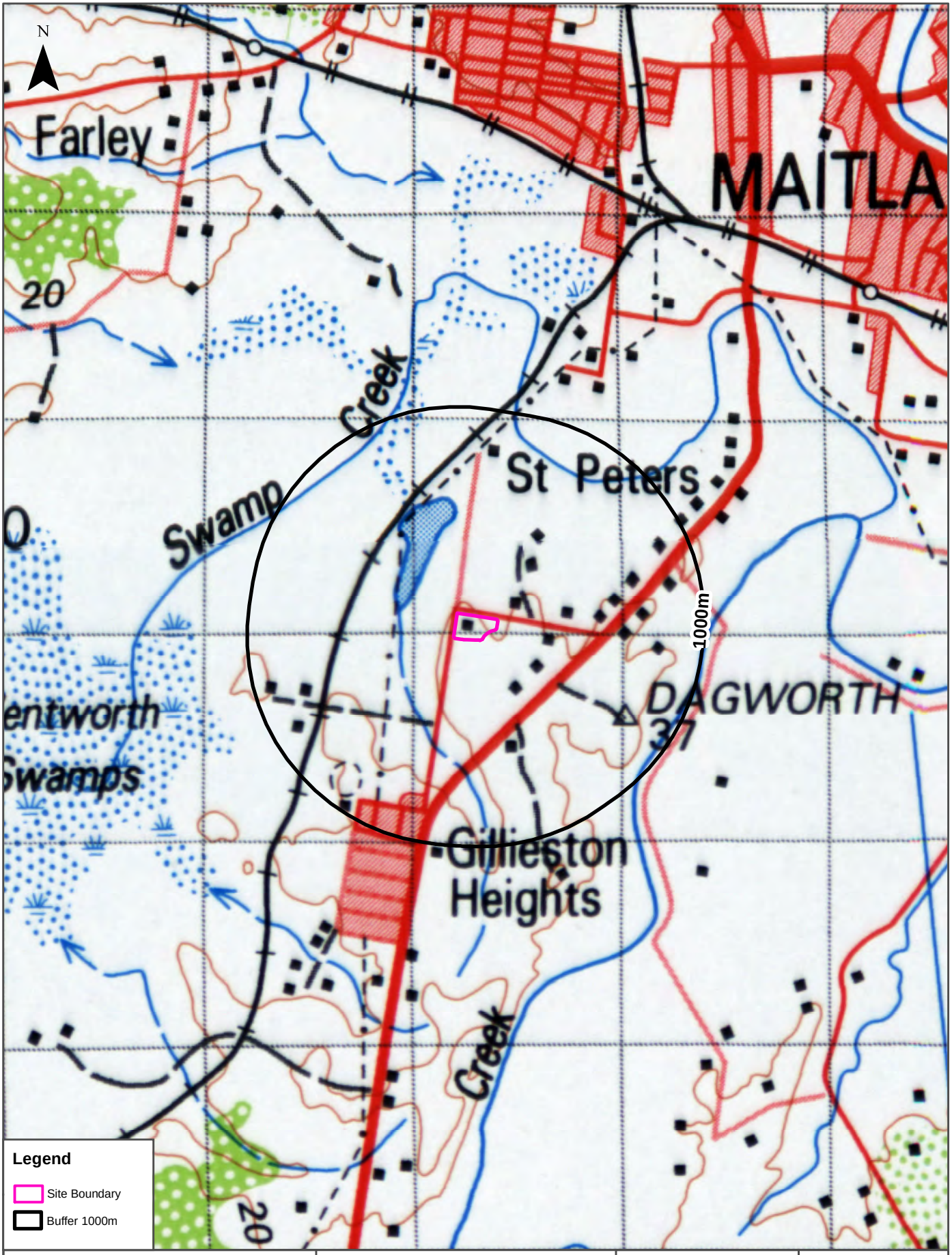
Topographic Map 2015

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Historical Map 1981

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

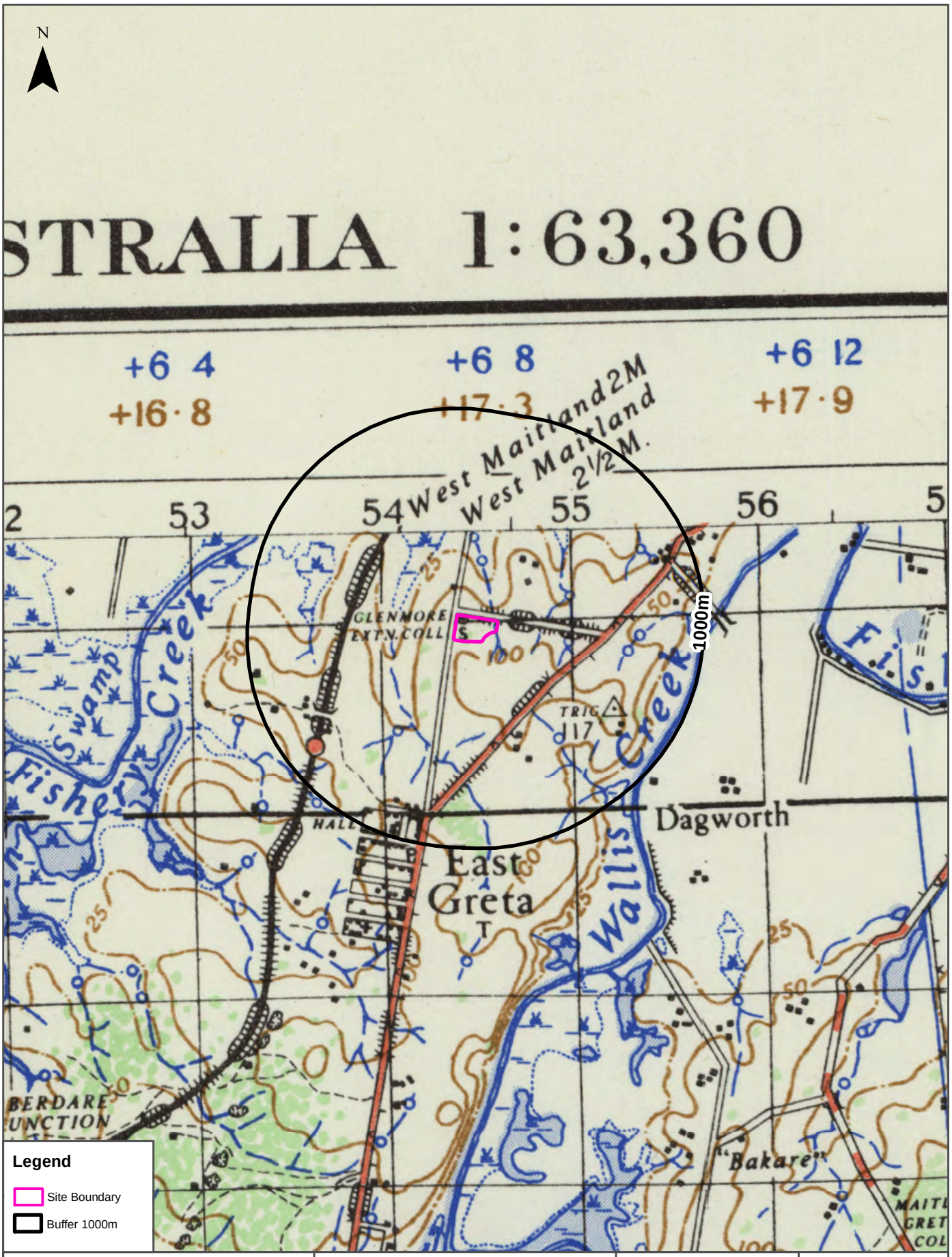


Historical Map c.1942

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

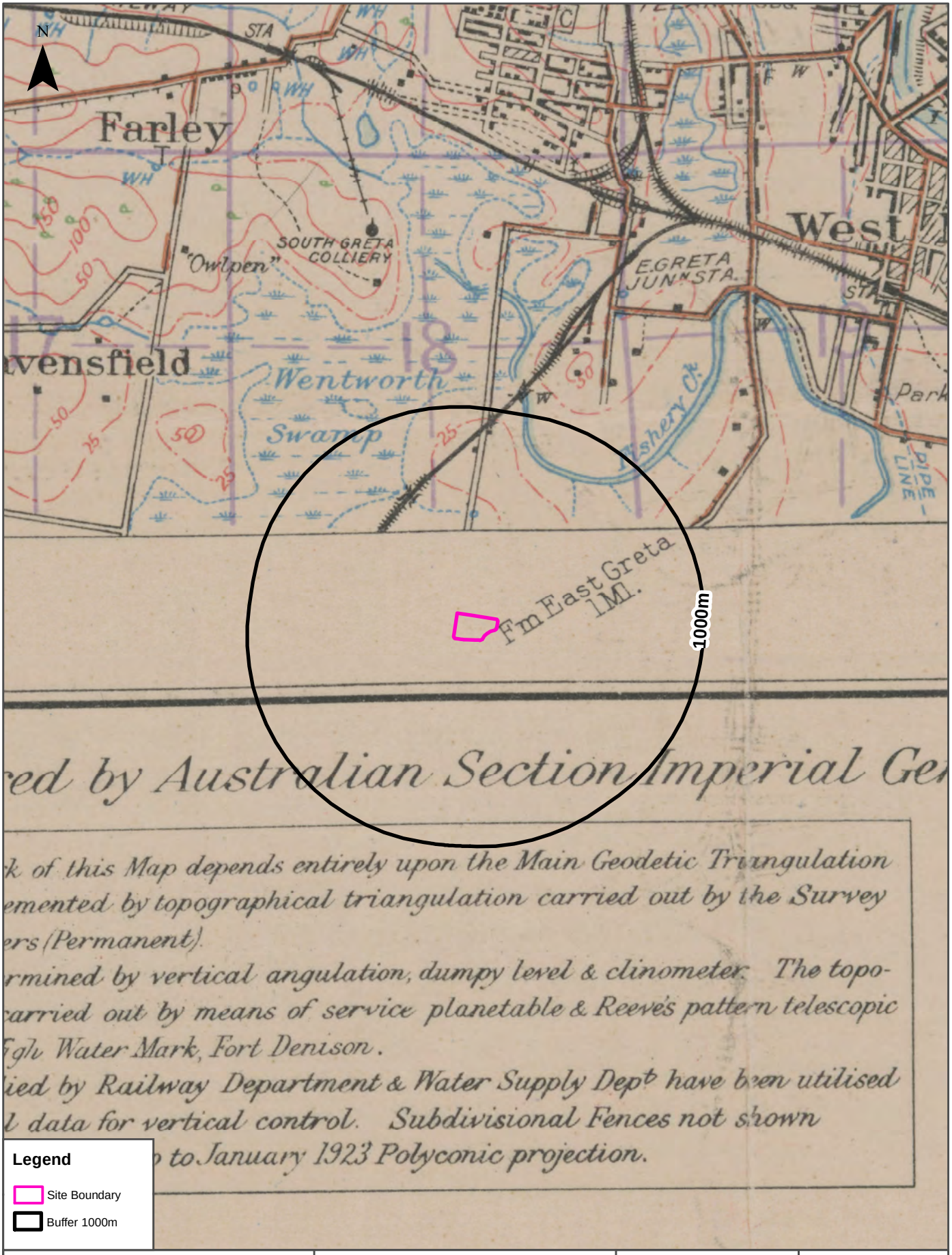
Historical Map c.1941

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



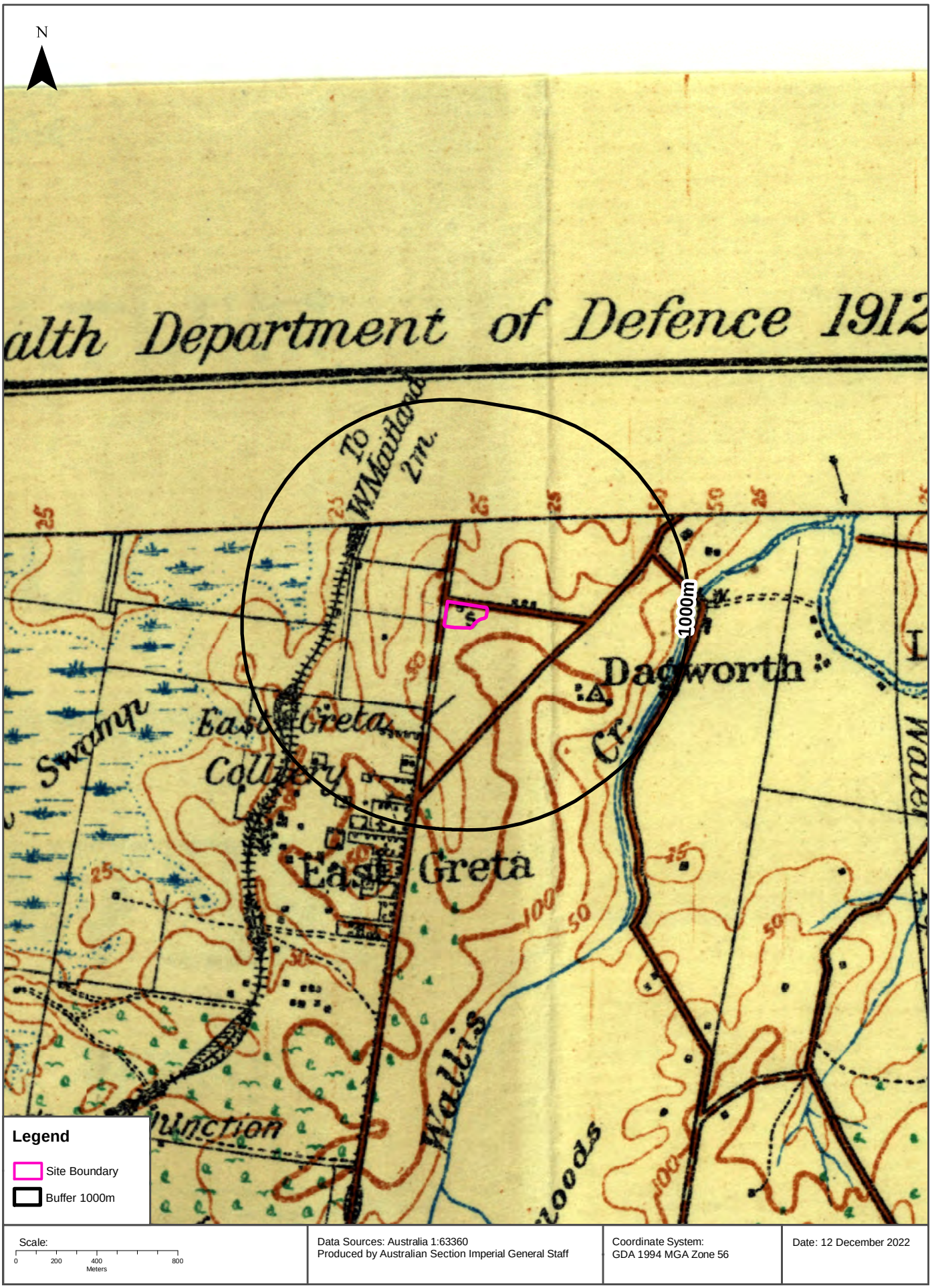
Historical Map c.1925

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



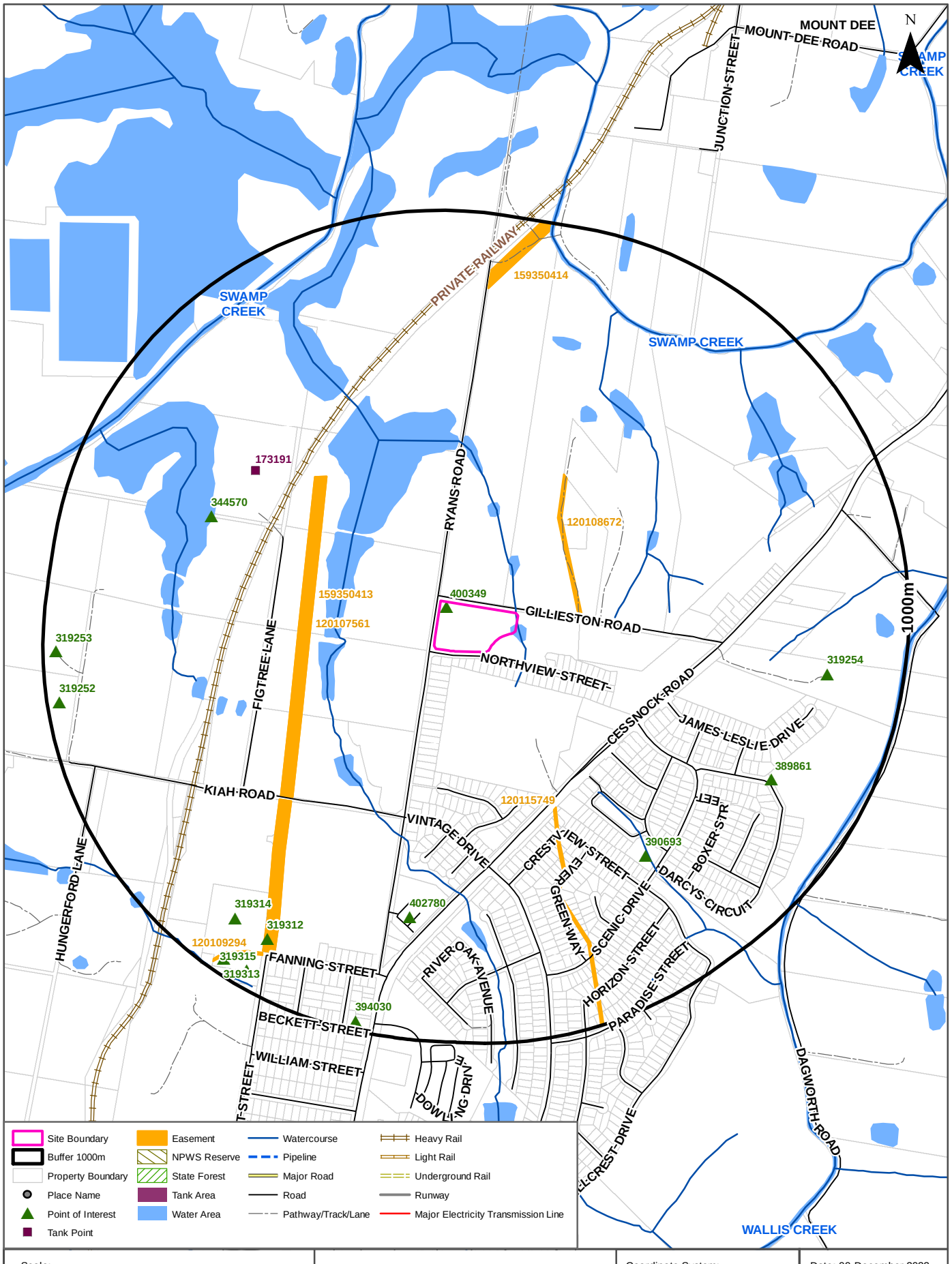
Historical Map c.1913

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Topographic Features

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 09 December 2022

Topographic Features

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
400349	Primary School	GILLIESTON PUBLIC SCHOOL	0m	On-site
344570	Swamp	WENTWORTH SWAMPS	626m	North West
390693	Park	JOSEPH MAXWELL VC PARK	661m	South East
402780	Retirement Village	RIDGE ESTATE RETIREMENT VILLAGE	689m	South
389861	Lookout	DARCYS LOOKOUT	757m	South East
319254	Homestead	CARINYA	805m	East
319312	Park	GILLIESTON HEIGHTS RESERVE	859m	South West
319314	Sports Field	OVAL	860m	South West
319315	Sports Court	TENNIS COURTS	955m	South West
319313	Sports Centre	ROY JORDAN SPORTS CENTRE	961m	South West
319253	Homestead	WHITEWOOD	967m	West
319252	Homestead	ROSENEATH	968m	West
394030	Park	JUDD GREEDY PARK	975m	South

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

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
173191	Water	Operational		02/04/2001	579m	North West

Tanks Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Major Easements

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120108672	Primary	Undefined		151m	North East
159350413	Primary	Gas		318m	South West
120107561	Primary	Undefined		318m	West
120115749	Primary	Undefined		436m	South
159350414	Primary	Gas		809m	North
120109294	Primary	Undefined		896m	South West

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

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

State Forest

What State Forest exist within the dataset buffer?

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

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

National Parks and Wildlife Service Reserves

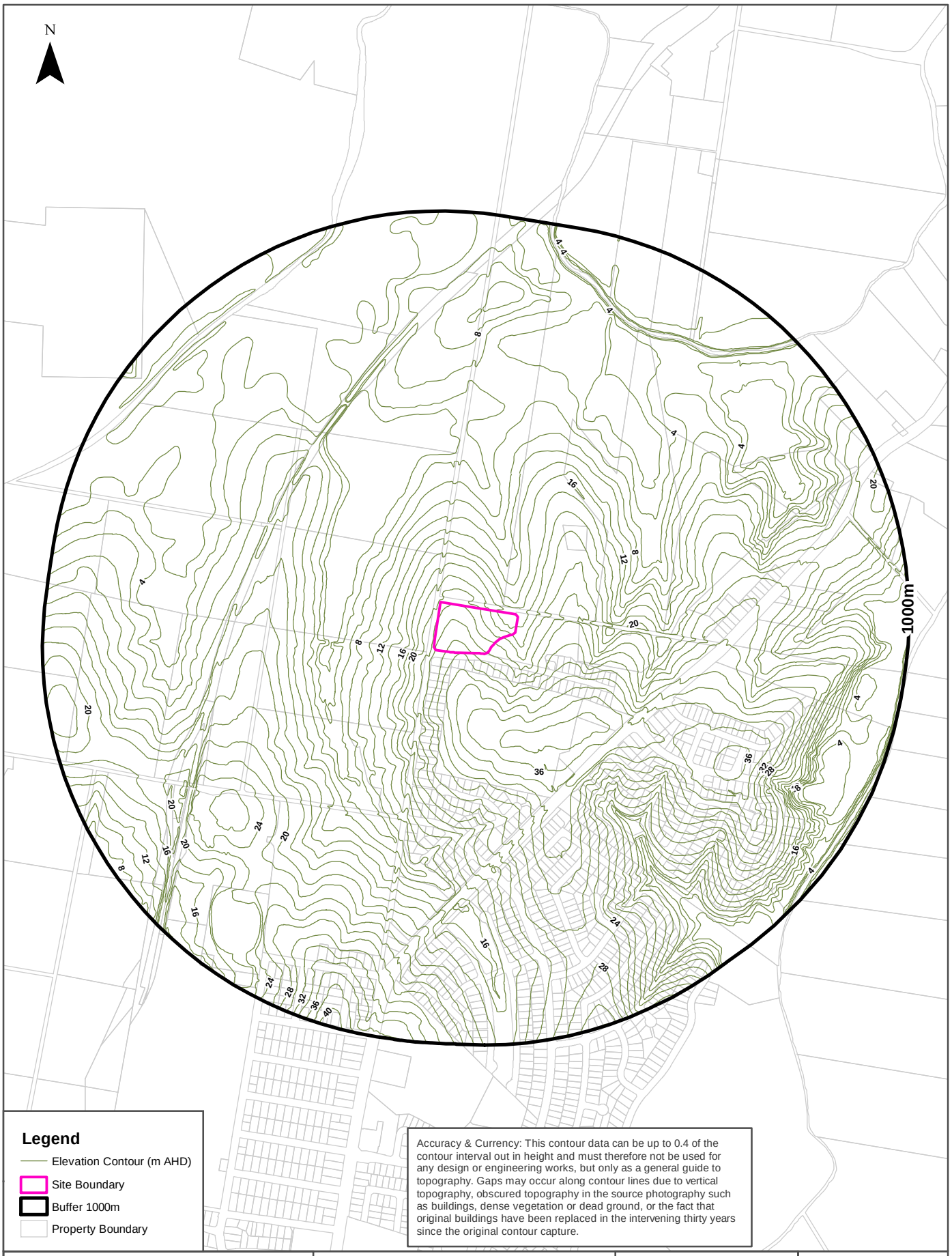
What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Elevation Contours (m AHD)

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Hydrogeology & Groundwater

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Fractured or fissured, extensive aquifers of low to moderate productivity	0m	On-site
Porous, extensive highly productive aquifers	0m	On-site

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

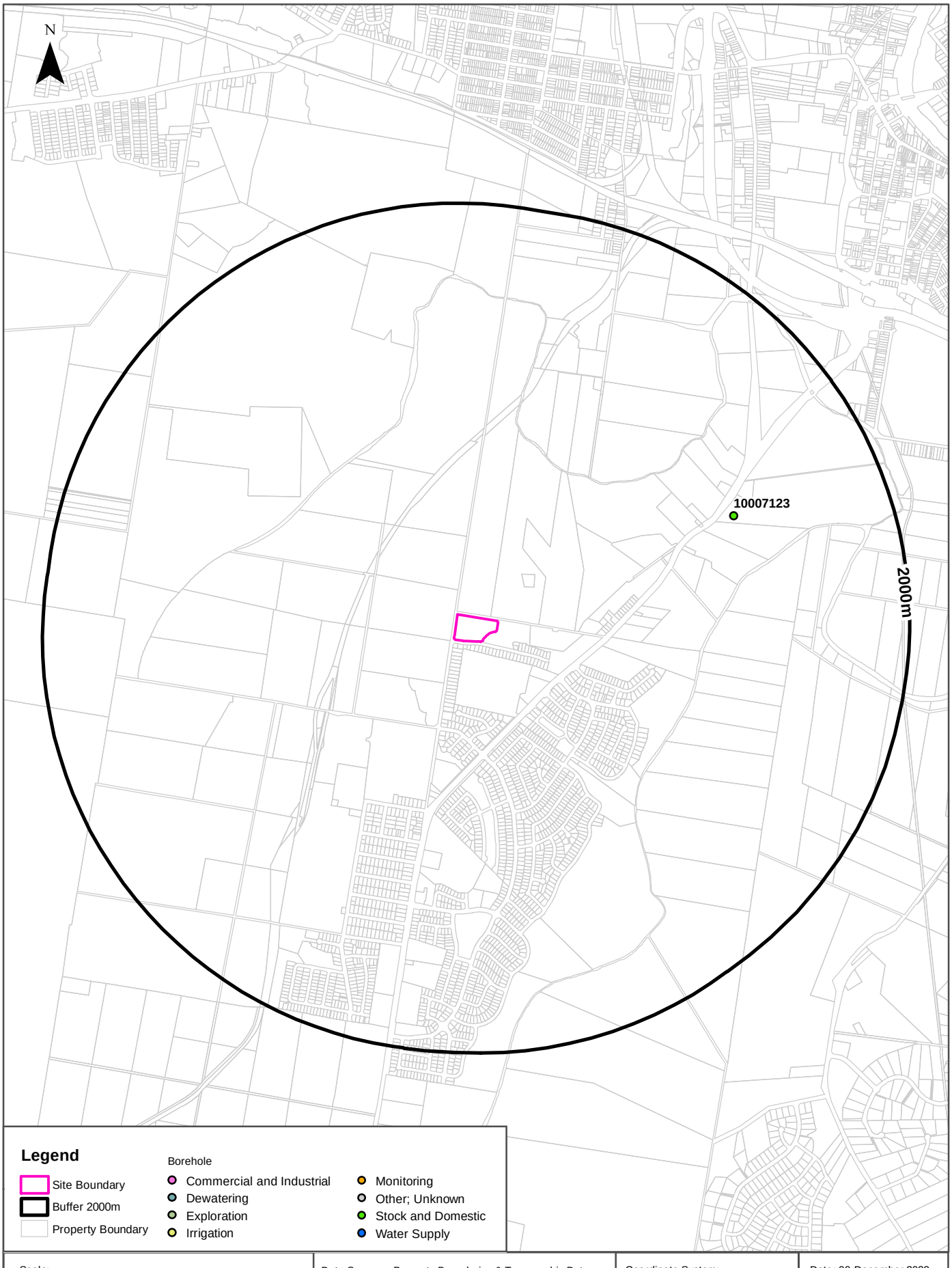
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

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

Groundwater Boreholes

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Hydrogeology & Groundwater

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10007123	GW201877	Stock and Domestic	Functioning	01/07/1990	26.00		AHD				1258m	North East

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

Hydrogeology & Groundwater

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Driller's Logs

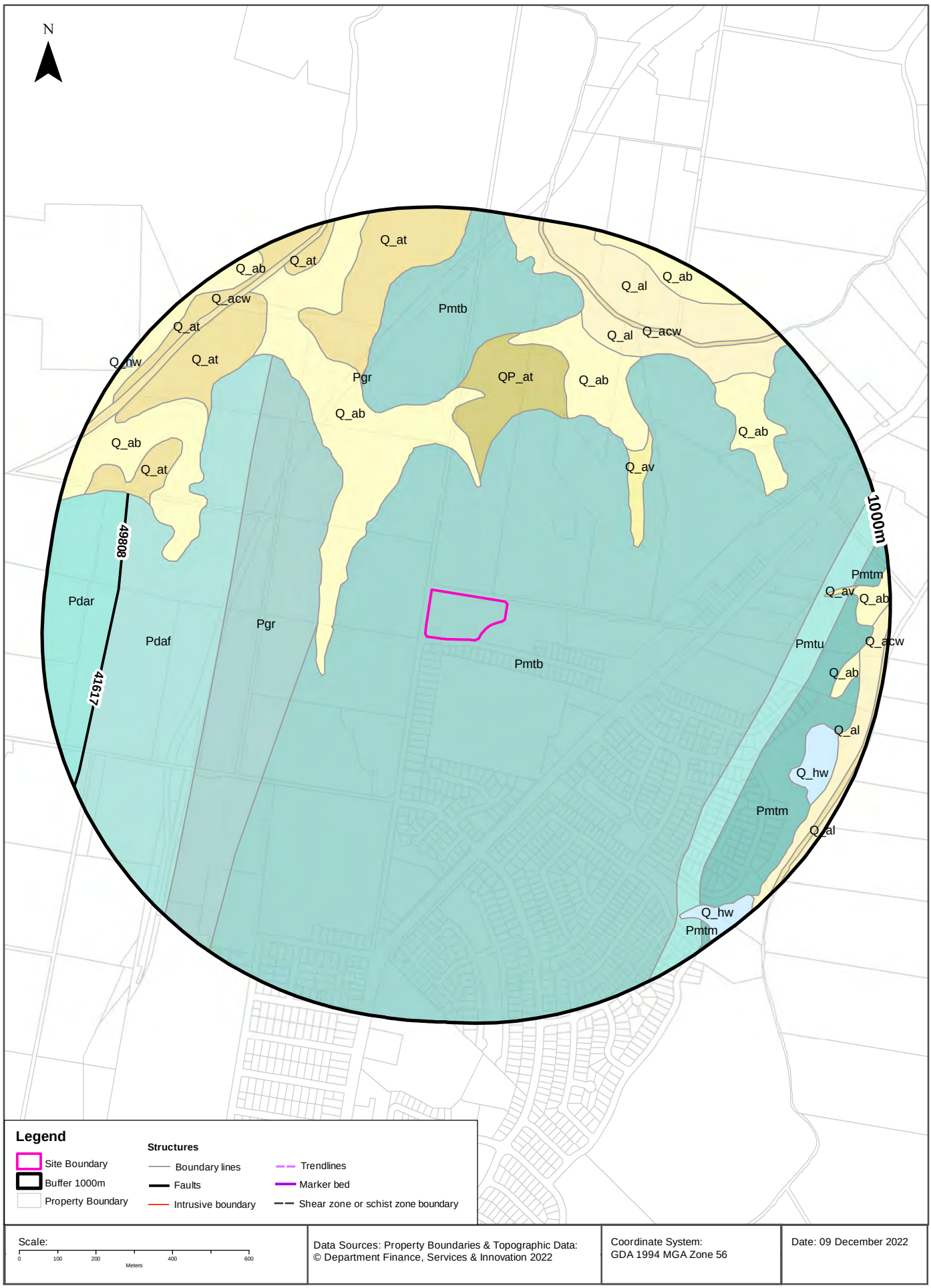
Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
No related drill log data			

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

Geology

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Geology

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Pmtb	Branxton Formation	Conglomerate, sandstone, siltstone.	/Maitland Group//Branxton Formation//	Roadian (base) to Roadian (top)	Conglomerate	0m
Q_ab	Alluvial backswamp deposits	Organic-rich mud, peat, silt, clay.	/Alluvium//Alluvial backswamp deposits//	Quaternary (base) to Now (top)	Organic rich sediment	221m
Pgr	Greta Coal Measures	Sandstone, siltstone, pellet claystone, coal, chert, sporadic conglomerate.	/Greta Coal Measures////	Permian (base) to Permian (top)	Sandstone	282m
QP_at	Alluvial terrace deposits	Silt, clay, (fluvially-deposited) fine- to medium-grained quartz-lithic sand, polymictic gravel.	/Alluvium//Alluvial terrace deposits//	Quaternary (base) to Now (top)	Clastic sediment	303m
Q_av	Alluvial valley deposits	Silt, clay, (fluvially deposited) lithic to quartz-lithic sand, gravel.	/Alluvium//Alluvial valley deposits//	Quaternary (base) to Now (top)	Clastic sediment	364m
Pdaf	Farley Formation	Poorly sorted, light- and dark-grey, micaceous sandy siltstone, silty sandstone, mudstone and shale; sporadic thin limestone near Pokolbin; abundant marine fossils.	/Dalwood Group//Farley Formation//	Permian (base) to Lopingian (top)	Siltstone	521m
Q_at	Alluvial terrace deposits	Silt, clay, (fluvially-deposited) fine- to medium-grained quartz-lithic sand, polymictic gravel.	/Alluvium//Alluvial terrace deposits//	Quaternary (base) to Now (top)	Clastic sediment	582m
Pmtu	Muree Sandstone	Fine- to coarse-grained sandstone, conglomerate, minor claystone.	/Maitland Group//Muree Sandstone//	Roadian (base) to Roadian (top)	Sandstone	694m
Q_al	Alluvial levee/overbank deposits	Fluvially deposited fine- to medium-grained lithic to quartz-rich sand, silt, clay.	/Alluvium//Alluvial levee/overbank deposits//	Quaternary (base) to Now (top)	Clastic sediment	713m
Pmtm	Mulbring Siltstone	Medium- to dark-grey siltstone, minor claystone, sporadic thin cherty beds (resistant), rare thin sandstone and limestone beds, sporadic marine fossils.	/Maitland Group//Mulbring Siltstone//	Guadalupian (base) to Guadalupian (top)	Siltstone	754m
Q_acw	Alluvial channel deposits - subaqueous	Fluvially deposited sand, gravel, silt, clay.	/Alluvium//Alluvial channel deposits/Alluvial channel deposits-subaqueous/	Quaternary (base) to Now (top)	Clastic sediment	792m
Pdar	Rutherford Formation	Siltstone, marl and minor sandstone.	/Dalwood Group//Rutherford Formation//	Permian (base) to Permian (top)	Siltstone	808m
Q_hw	Anthropogenic stored water, pondage, reservoirs, canals	Thinly laminated muds and silts with humic to biogenic debris (as bottom sediment to the overlying stored waters).	/Anthropogenic deposits//Anthropogenic stored water, pondage, reservoirs, canals//	Quaternary (base) to Now (top)	Anthropogenic material	843m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
41617	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	808m
49808	Faulted boundary	Fault, inferred	NSW Seamless Geology Project, Zone 56	808m

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

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

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

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

Atlas of Australian Soils

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Soils

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Gb10	Dermosol	River terraces, levees, flood-plains, coastal swamps, and tidal flats: this unit contains the same land forms and soils as unit Gb9, but in addition has (i) swamps and levees of the lower river flood-plain of (Uf6.6), (Ug5), and other undescribed soils; (ii) estuarine flats of peaty or organic soils over acid clays; and (iii) tidal mud flats. The soils of these areas are not well known but probably have similarities with the soils of units J3, Mc4, NY1, and NN1. The smaller areas mapped as unit Gb10 consist mainly of areas of (i) and/or (iii) above.	0m	On-site
Tb42	Kurosol	Undulating to hilly with a general ridge, slope, and valley sequence throughout; some outcropping sandstone or conglomerate on the ridges, occasionally some escarpments: chief soils are hard acidic yellow mottled soils (Dy3.41), possibly with (Dy3.42). Associated are: narrow ridges of shallow (Dy3.41) and (Dr3.41) soils, both often containing ironstone gravel; (Dr2.41) soils on broader ridges some broad sandy flats of (Dy5.81) soils containing ironstone gravels; dunes of (Uc1.2) soils on local sand deposits; and various undescribed soils along the streams where salinity is a common local feature.	998m	North West

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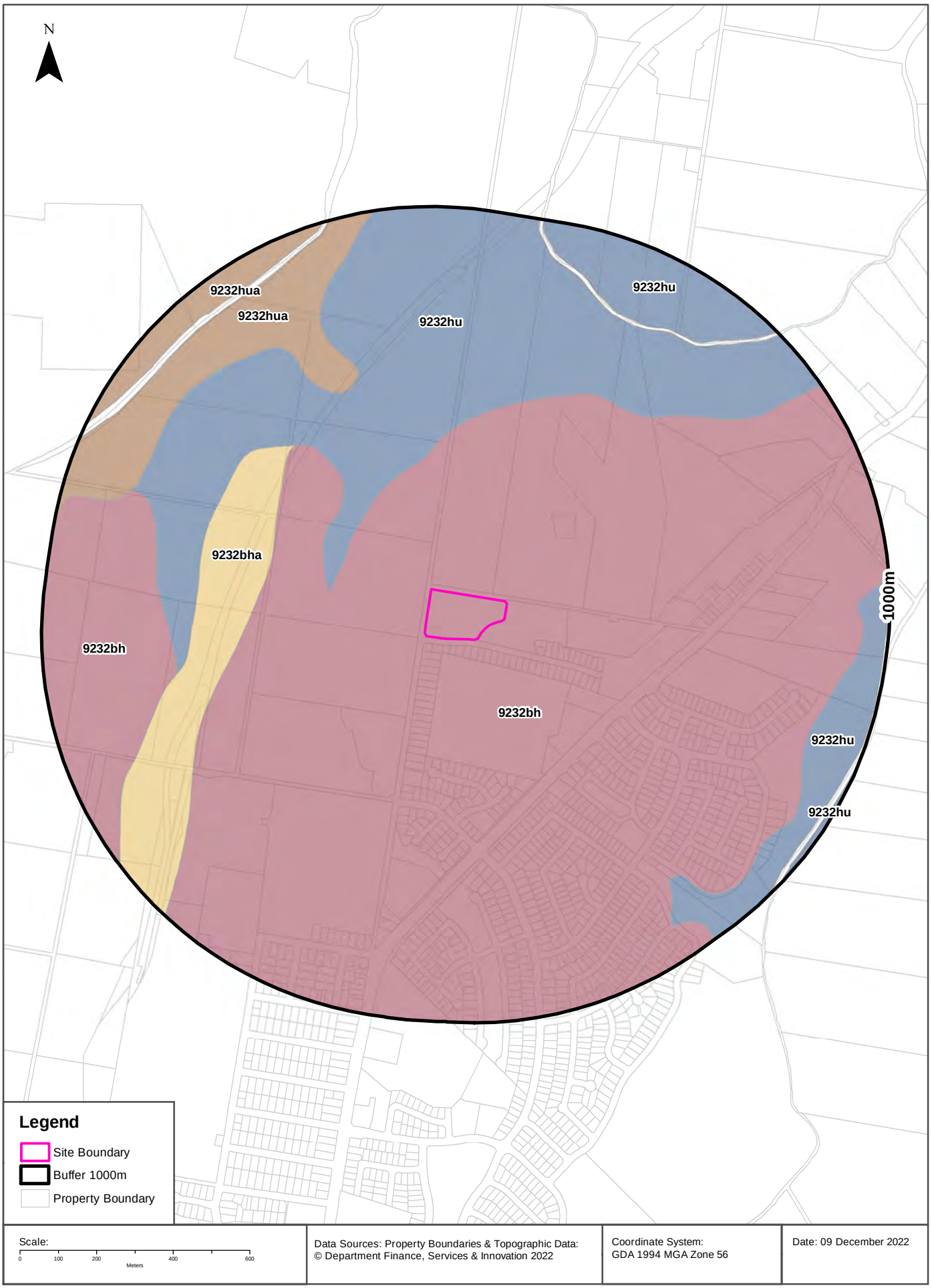
Soil Landscapes of Central and Eastern NSW

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Soils

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
9232bh	Bolwarra Heights	0m	On-site
9232hu	Hunter	240m	North
9232bha	Bolwarra Heights variant a	425m	West
9232hua	Hunter variant a	564m	North West

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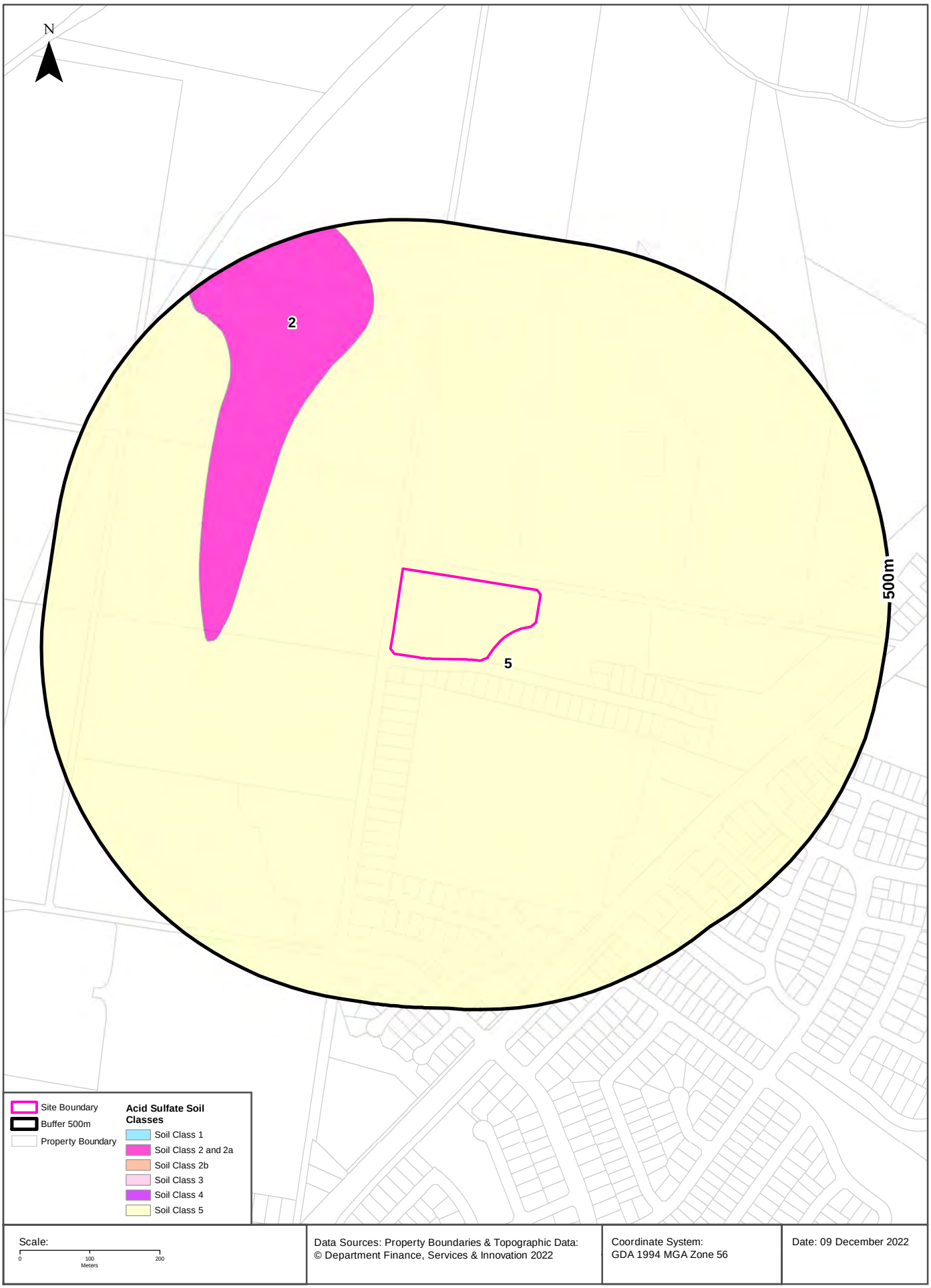
Acid Sulfate Soils

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Acid Sulfate Soils

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Environmental Planning Instrument - Acid Sulfate Soils

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

Soil Class	Description	EPI Name
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk	Maitland Local Environmental Plan 2011

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

Soil Class	Description	EPI Name	Distance	Direction
2	Works below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered present an environmental risk	Maitland Local Environmental Plan 2011	219m	North West

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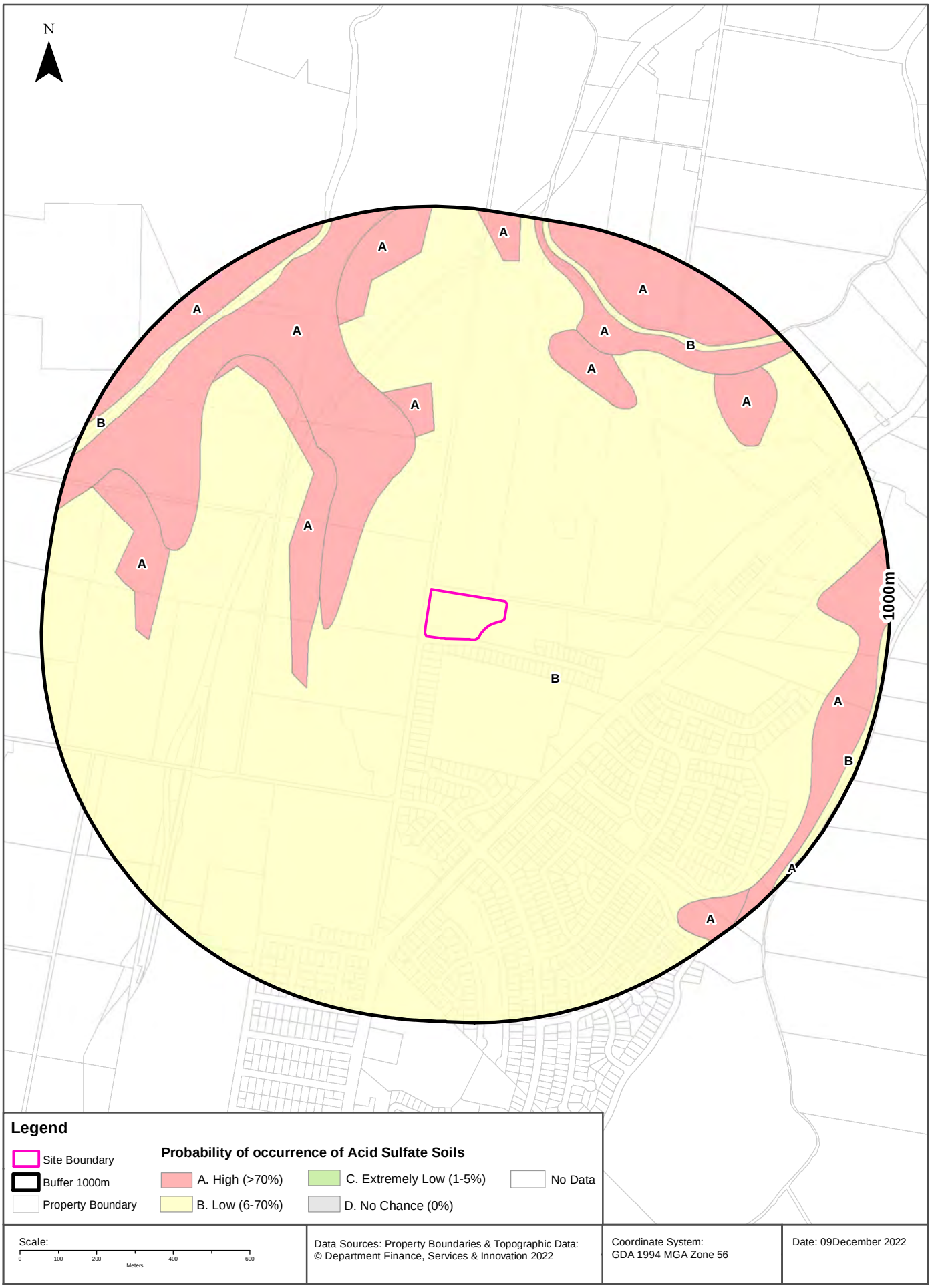
Atlas of Australian Acid Sulfate Soils

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Acid Sulfate Soils

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	731m	North

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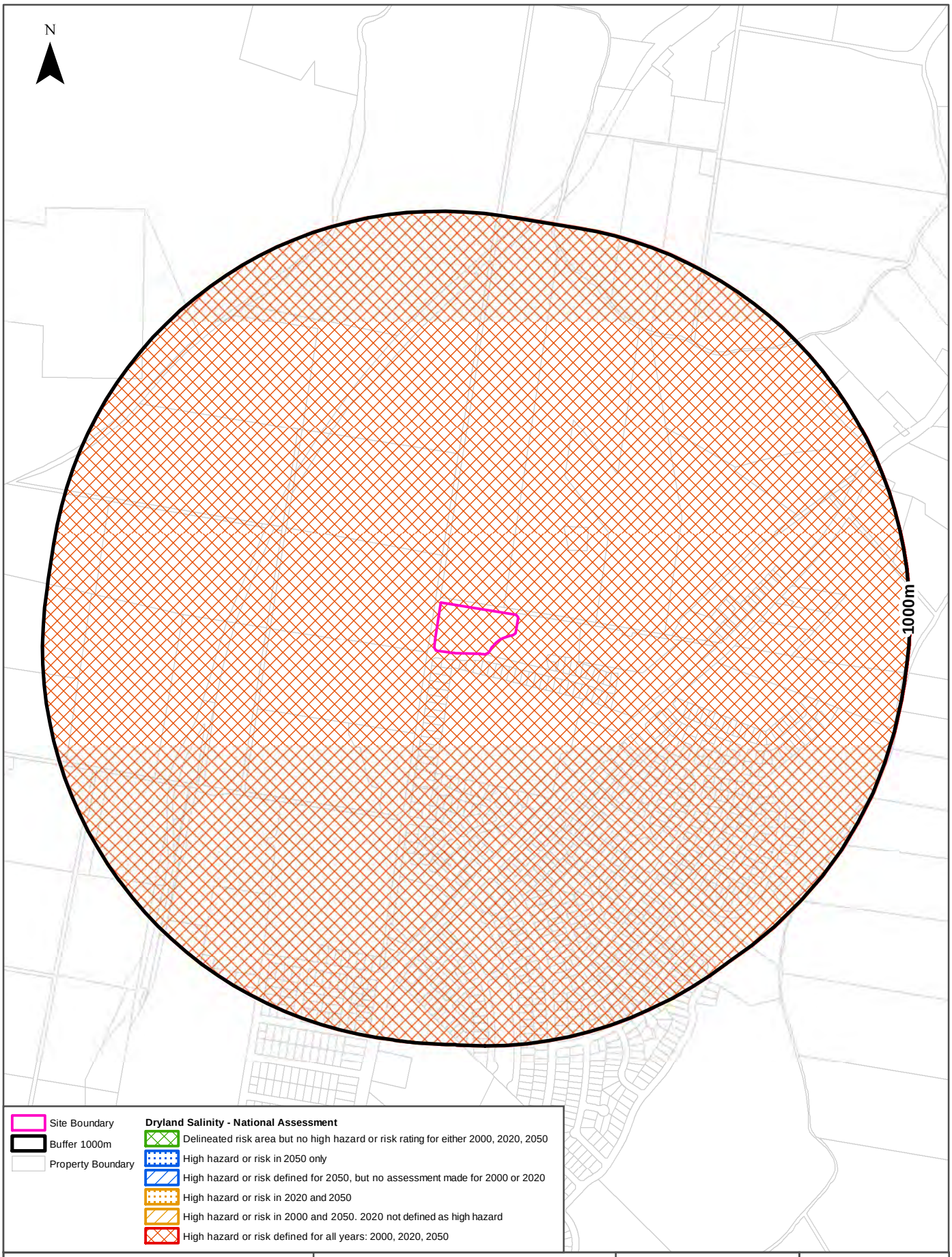
Dryland Salinity

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Dryland Salinity

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

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

Yes

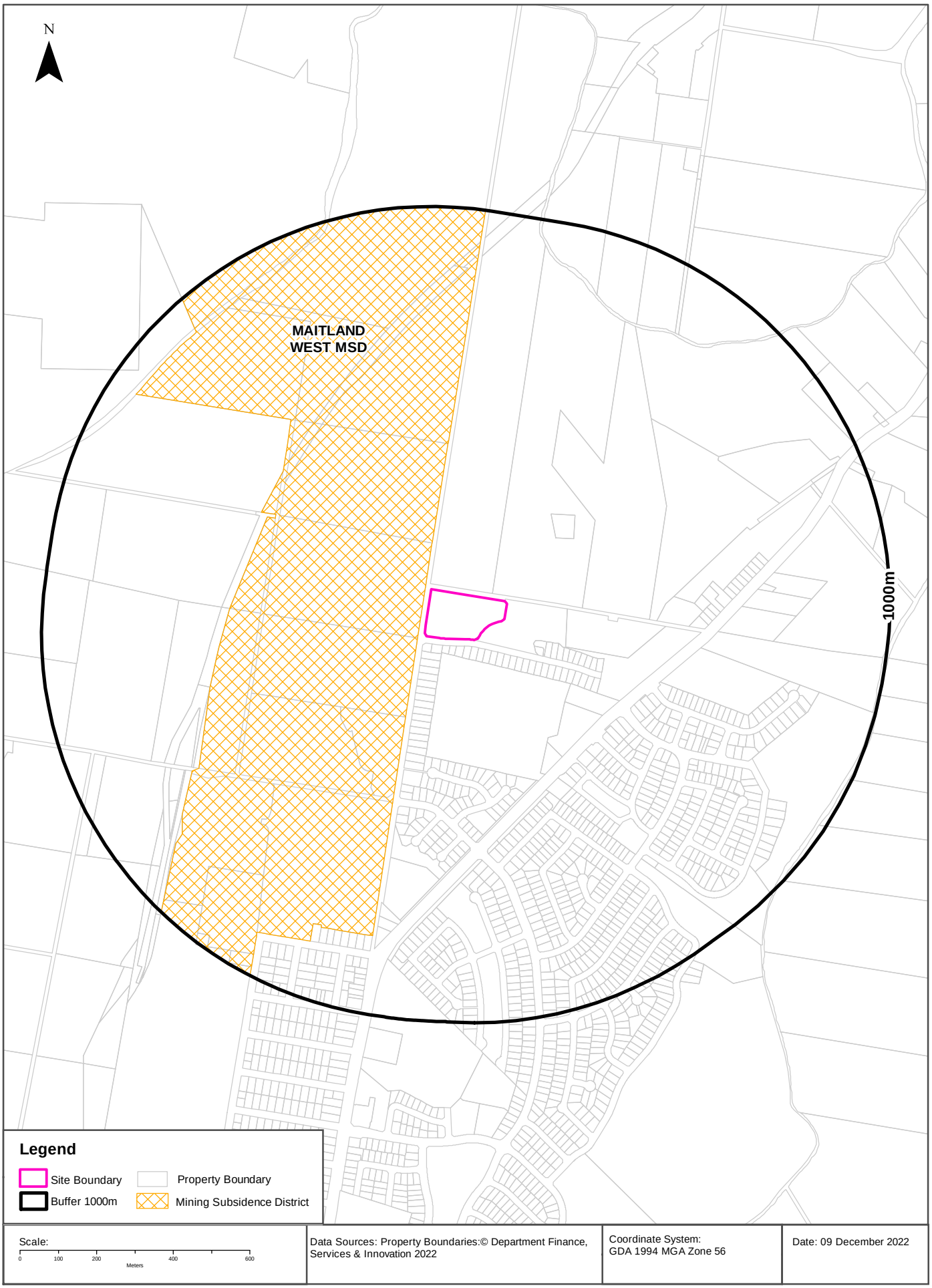
What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	0m	On-site

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining Subsidence Districts

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Mining

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
MAITLAND WEST	16m	West

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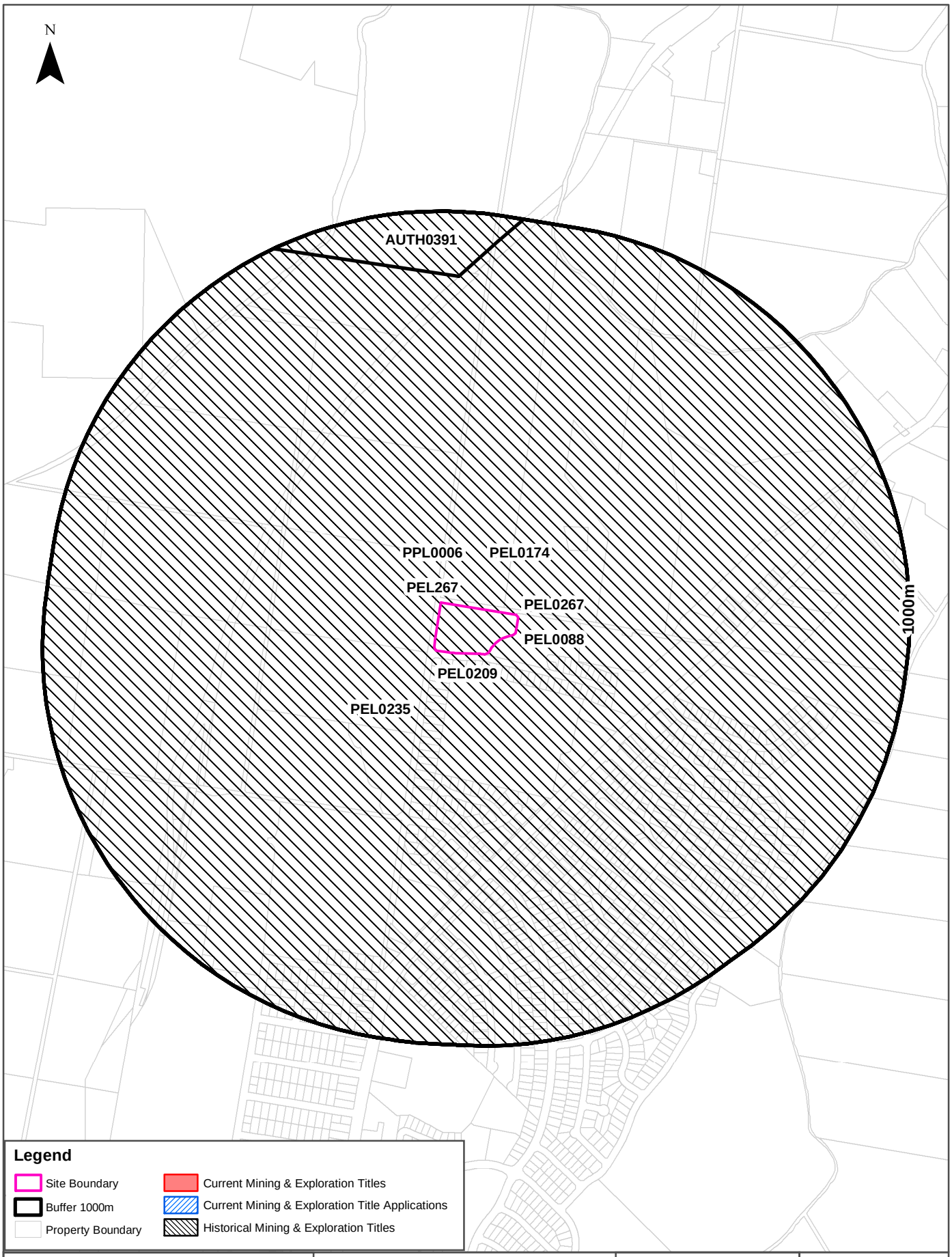
Mining & Exploration Titles

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Mining

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

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

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

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

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

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

Mining

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PPL0006	PLANET EXPLORATION	19060305		PETROLEUM	Petroleum	0m	On-site
PEL0267	SYDNEY OIL CO (NSW) PTY LTD, MANVANE PTY LTD AUSTRALIA NL, BASE RESOURCES LTD, SEAHAWK OIL AUSTRALIA NL, READING & BATES	19850801	20150607	PETROLEUM	Petroleum	0m	On-site
PEL0209	EARTH RESOURCES AUSTRALIA PTY LTD			PETROLEUM	Petroleum	0m	On-site
PEL0174	NSW OIL AND GAS COMPANY NL			PETROLEUM	Petroleum	0m	On-site
PEL0235	EASTMET LTD	19810504		PETROLEUM	Petroleum	0m	On-site
PEL0088	PLANET EXPLORATION COMPANY PTY LTD			PETROLEUM	Petroleum	0m	On-site
PEL267	AGL UPSTREAM INVESTMENTS PTY LIMITED			MINERALS		0m	On-site
AUTH0391	SOUTH MAITLAND COLLIERIES PTY LIMITED	19870429	19910429	COAL	Coal	835m	North

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

State Environmental Planning Policy

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

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

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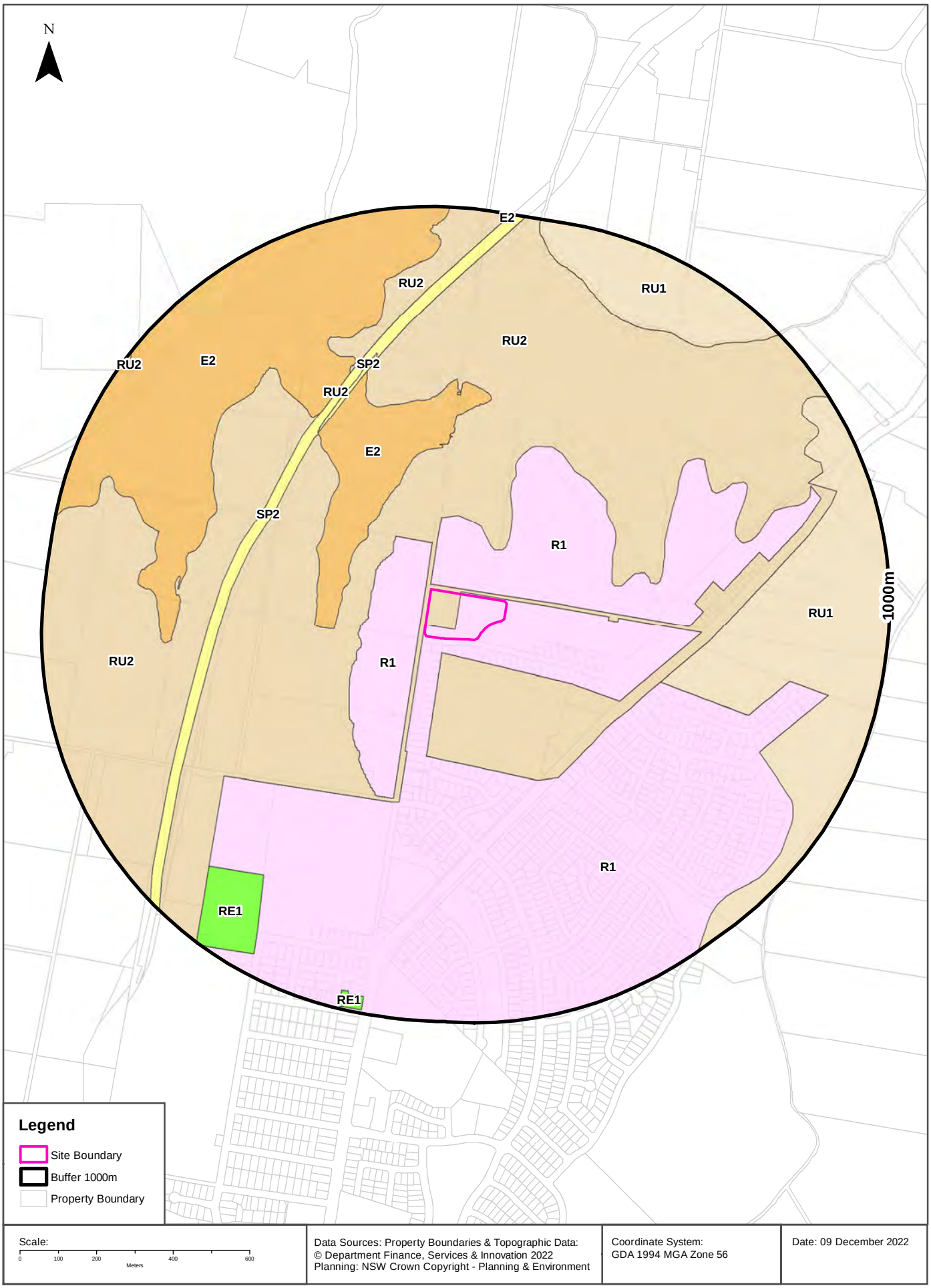
EPI Planning Zones

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Environmental Planning Instrument

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	25/08/2017	25/08/2017	16/07/2021	Amendment No 21	0m	On-site
R1	General Residential		Maitland Local Environmental Plan 2011	25/08/2017	25/08/2017	16/07/2021	Amendment No 21	0m	On-site
R1	General Residential		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		14m	North East
R1	General Residential		Maitland Local Environmental Plan 2011	25/08/2017	25/08/2017	16/07/2021	Amendment No 21	16m	South West
E2	Environmental Conservation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		214m	North West
RU1	Primary Production		Maitland Local Environmental Plan 2011	25/08/2017	25/08/2017	16/07/2021	Amendment No 21	439m	East
SP2	Infrastructure	Railway	Maitland Local Environmental Plan 2011	30/05/2014	30/05/2014	16/07/2021	Amendment No 6	458m	North West
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	25/08/2017	25/08/2017	16/07/2021	Amendment No 21	485m	West
SP2	Infrastructure	Railway	Maitland Local Environmental Plan 2011	30/05/2014	30/05/2014	16/07/2021	Amendment No 6	504m	North West
E2	Environmental Conservation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		545m	North West
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		573m	North West
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		604m	North
RE1	Public Recreation		Maitland Local Environmental Plan 2011	30/05/2014	30/05/2014	16/07/2021	Amendment No 6	756m	South West
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		948m	South
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		982m	North West
SP2	Infrastructure	Railway	Maitland Local Environmental Plan 2011	30/05/2014	30/05/2014	16/07/2021	Amendment No 6	993m	North

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Heritage

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Commonwealth Heritage List

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

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

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

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

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

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

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

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

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

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

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Natural Hazards - Bush Fire Prone Land

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2022. Property Boundaries: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 09 December 2022

Natural Hazards

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Bush Fire Prone Land

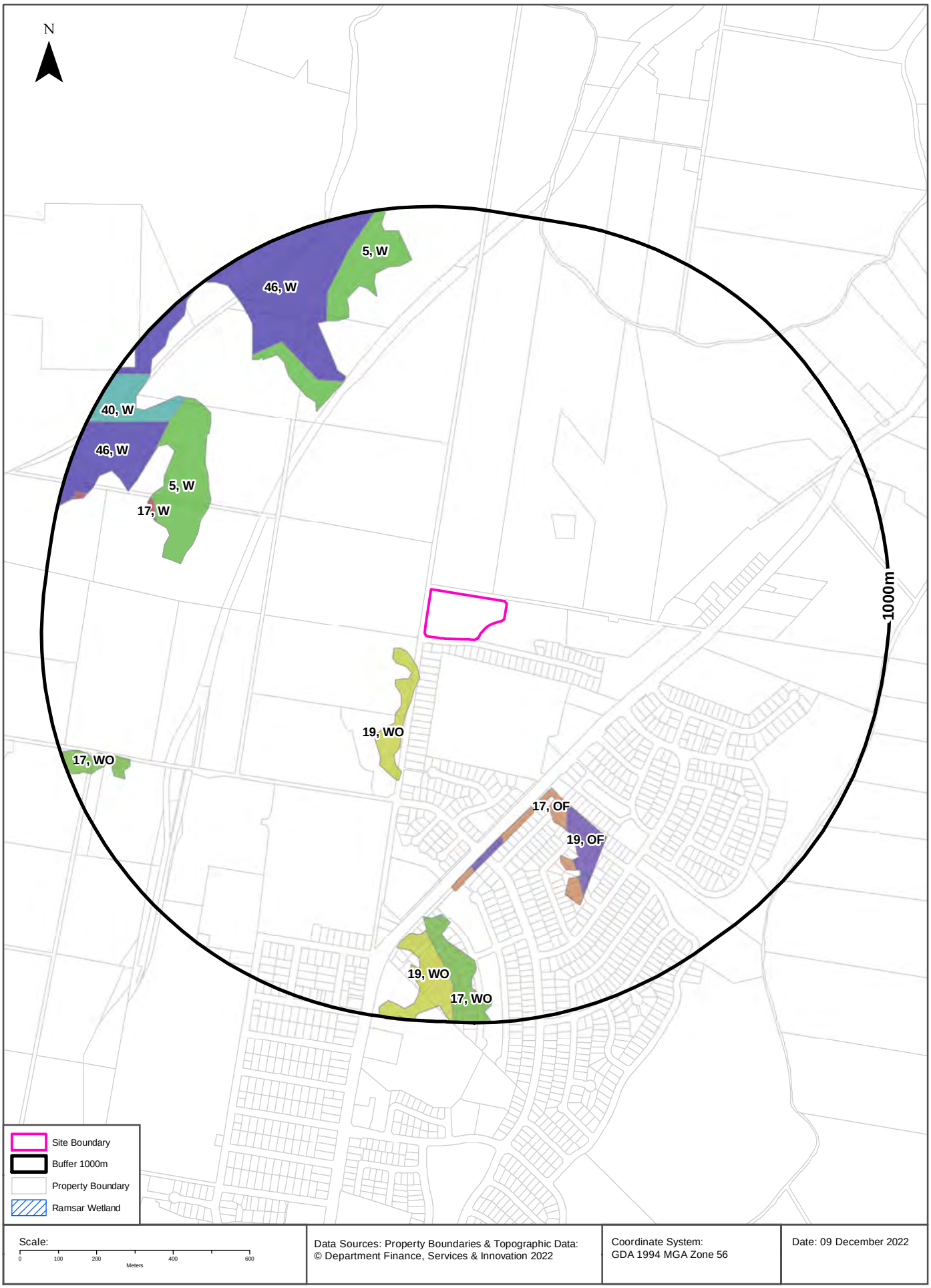
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 3	0m	On-site
Vegetation Buffer	0m	On-site

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

Ecological Constraints - Vegetation & Ramsar Wetlands

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Ecological Constraints

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Lower Hunter and Central Coast Regional Vegetation Survey

What vegetation from the Lower Hunter and Central Coast Regional Survey exists within the dataset buffer?

Map Id	Unit Desc	Canopy Code	Canopy Cover	Species	Distance	Direction
19	Hunter Lowland Redgum Forest	WO	Sparse (Woodland) 20-<50% cover	E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata	66m	South West
17	Lower Hunter Spotted Gum - Ironbark Forest	OF	Mid Dense (Open Forest) 50-<100% cover	C. maculata / E. fibrosa / E. punctata	435m	South East
19	Hunter Lowland Redgum Forest	OF	Mid Dense (Open Forest) 50-<100% cover	E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata	489m	South East
5	Alluvial Tall Moist Forest	W	Wetland	E. saligna / S. glomulifera / Glochidion ferdinandi	555m	North West
46	Freshwater Wetland Complex	W	Wetland	Ludwigia peploides subsp montevidensis / Paspalum distichum / Eleocharis sphacelata / Juncus usitatus	590m	North West
17	Lower Hunter Spotted Gum - Ironbark Forest	WO	Sparse (Woodland) 20-<50% cover	C. maculata / E. fibrosa / E. punctata	720m	South
17	Lower Hunter Spotted Gum - Ironbark Forest	W	Wetland	C. maculata / E. fibrosa / E. punctata	739m	West
40	Swamp Oak Rushland Forest	W	Wetland	C. glauca / Melaleuca ericifolia / Baumea juncea	812m	North West

Lower Hunter and Central Coast Regional Vegetation Survey: NSW Office of Environment and Heritage

Ramsar Wetlands

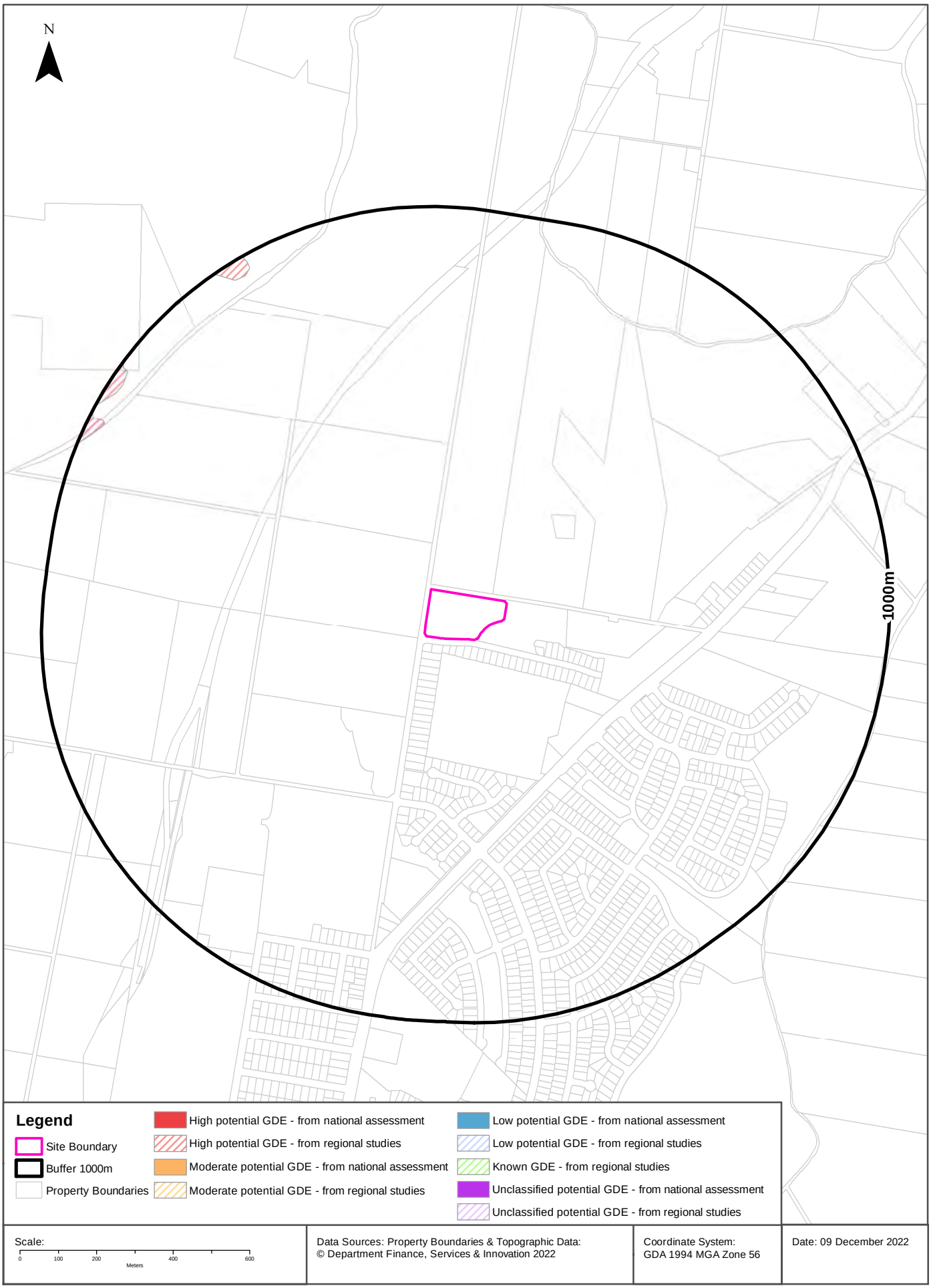
What Ramsar Wetland areas exist within the dataset buffer?

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

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

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Ecological Constraints

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	High potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		954m	North West

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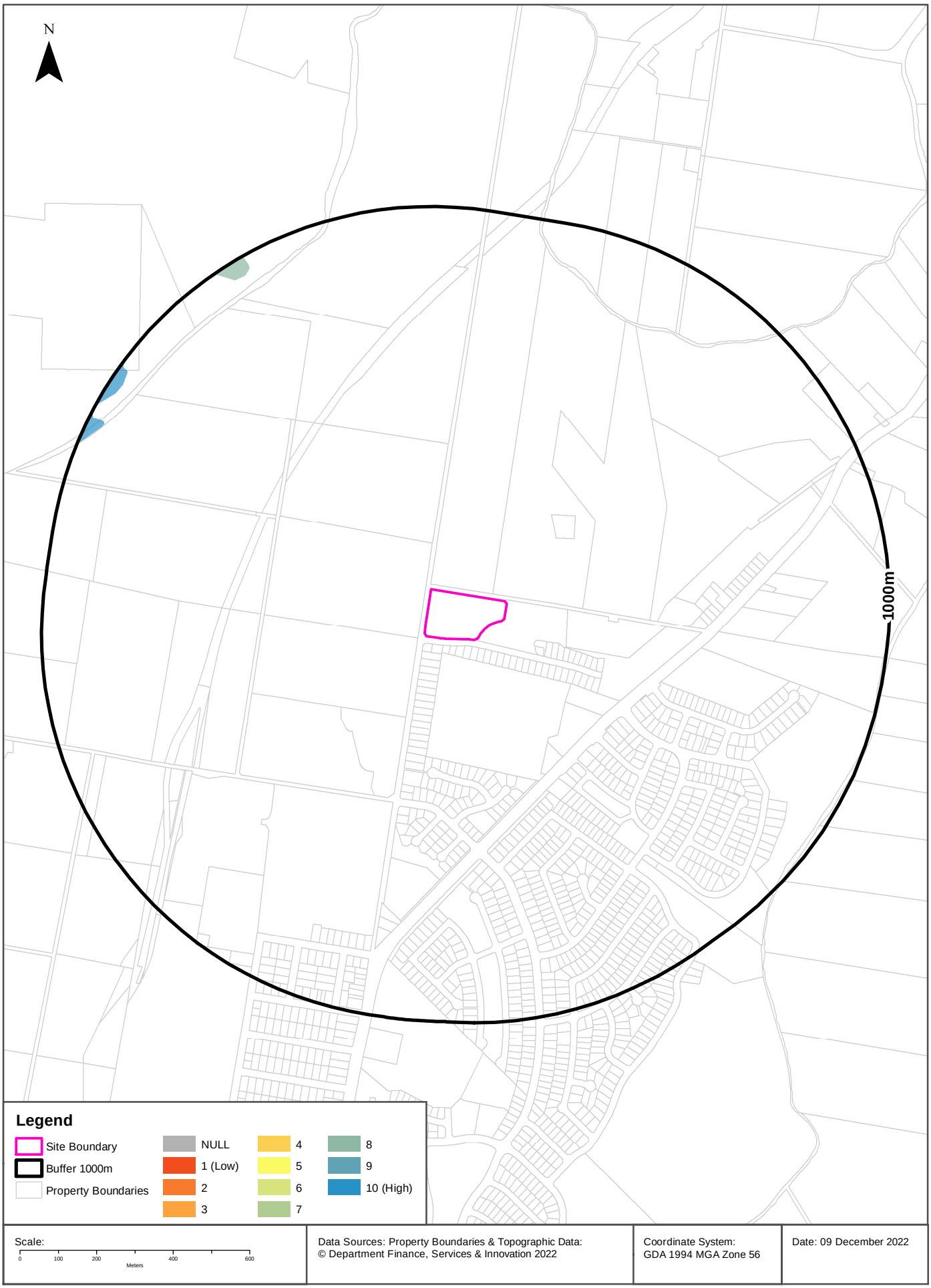
Ecological Constraints - Inflow Dependent Ecosystems Likelihood

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321



Ecological Constraints

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	8	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		954m	North West
Terrestrial	10	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		957m	North West

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Ecological Constraints

Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

NSW BioNet Atlas

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Litoria littlejohni	Littlejohn's Tree Frog	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris melanotos	Pectoral Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Endangered	
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Chlidonias leucopterus	White-winged Black Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Cuculus optatus	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Gelochelidon nilotica	Gull-billed Tern	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Irediparra gallinacea	Comb-crested Jacana	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limosa limosa	Black-tailed Godwit	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pachycephala inornata	Gilbert's Whistler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Thinornis cucullatus cucullatus	Eastern Hooded Dotterel	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Tringa glareola	Wood Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Greater Glider	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aspidites ramsayi	Woma	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia bakeri	Marblewood	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Cymbidium canaliculatum	Tiger Orchid	Endangered Population	Category 2	Not Listed	
Plantae	Flora	Diuris pedunculata	Small Snake Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Eucalyptus camaldulensis	River Red Gum	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Eucalyptus parramattensis subsp. decadens		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Persoonia pauciflora	North Rothbury Persoonia	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Pterostylis chaetophora		Vulnerable	Category 2	Not Listed	
Plantae	Flora	Pterostylis gibbosa	Illawarra Greenhood	Endangered	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Rhodomyrtus psidioides	Native Guava	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Rutidosis heterogama	Heath Wrinklewort	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	

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

Location Confidences

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

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

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   (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
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Report or these Terms;

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5. The End User acknowledges that any Third Party Supplier shall be entitled to plead the benefits conferred on it under clause 4, despite not being a party to these terms.
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9. Subject to paragraph 6, Lotsearch excludes liability to End User for loss or damage of any kind, however caused, due to Lotsearch's negligence, breach of contract, breach of any law, in equity, under indemnities or otherwise, arising out of all acts, omissions and events whenever occurring.
10. Lotsearch acknowledges that if, under applicable State, Territory or Commonwealth law, End User is a consumer certain rights may be conferred on End User which cannot be excluded, restricted or modified. If so, and if that law applies to Lotsearch, then, Lotsearch's liability is limited to the greater of an amount equal to the cost of resupplying the Report and the maximum extent permitted under applicable laws.
11. Subject to paragraph 9, neither Lotsearch nor the End User is liable to the other for:
    (a) any indirect, incidental, consequential, special or exemplary damages arising out of or in relation to the Report or these Terms; or
    (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of business opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,

    irrespective of how that liability arises including in contract or tort, liability under indemnity or for any other common law, equitable or statutory cause of action or otherwise.
12. These Terms are subject to New South Wales law.

Appendix D SECTION 10.7 CERTIFICATE

Certificate No.:
PC/2022/3963
Certificate Date: 21/12/2022
Receipt No.: 1473957
Your Reference: LS038890

SECTION 10.7 PLANNING CERTIFICATE
Environmental Planning and Assessment Act, 1979 as amended

APPLICANT:	Lotsearch Pty Ltd
	support@lotsearch.com.au
PROPERTY DESCRIPTION:	100 Ryans Road GILLIESTON HEIGHTS NSW 2321
PARCEL NUMBER:	47779
LEGAL DESCRIPTION:	Lot 51 DP 1162489

IMPORTANT: Please read this Certificate carefully.

The information provided in this Certificate relates only to the land described above. If you need information about an adjoining property or nearby land, a separate certificate will be required.

All information provided is correct as at the date of issue of this Certificate. However, it is possible for changes to occur at any time after the issue of this Certificate.

For more information on the Planning Certificate please contact our Customer Experience team on 4934 9700.

SECTION 10.7(2)

The following matters relate to the land, as required by section 10.7(2) of the *Environmental Planning and Assessment Act (1979)* ("the Act") and clause 284 and Schedule 2 of the *Environment Planning and Assessment Regulation 2021.*

ITEM 1 - Names of relevant planning instruments and development control plans

The following environmental planning instruments and development control plans apply to the carrying out of development on the land:

State Environmental Planning Policies

The Minister for Planning has notified that the following State Environmental Planning Policies (SEPPs) shall be specified on Certificates under Section 10.7 of the Environmental Planning and Assessment Act, 1979.

The land is affected by the following State Environmental Planning Policies:

- SEPP (Biodiversity and Conservation) 2021
- SEPP (Industry and Employment) 2021
- SEPP (Primary Production) 2021
- SEPP (Planning Systems) 2021
- SEPP (Housing) 2021
- SEPP Building Sustainability Index: BASIX 2004
- SEPP (Exempt and Complying Development Codes) 2008
- SEPP (Resources and Energy) 2021
- SEPP (Transport and Infrastructure) 2021
- SEPP (Resilience and Hazards) 2021
-

Local Environmental Plan (LEP)

Maitland LEP 2011, published 16 December 2011, applies to the land.

Development Control Plan prepared by Council

Maitland Development Control Plan 2011 applies to the land.

The following proposed environmental planning instruments and draft development control plans are or have been the subject of community consultation or on public exhibition under the Environmental Planning and Assessment Act 1979, apply to the carrying out of development on the land and:

Planning Proposal for a Local Environmental Plan

No draft local Environmental Plans that have been on public exhibition under the Act are applicable to the land.

Detailed information on draft environmental planning instruments is available at

the NSW Department of Planning and Environment Current LEP Proposals website; or Maitland City Council's website.

Draft Development Control Plans

No draft Development Control Plan(s) that have been on public exhibition under the Act are applicable to the land.

Draft State Environmental Planning Policies

No draft State Environmental Planning Policy(s) applying to the land is, or has been publicised the subject of community consultation or on public exhibition under the Act.

ITEM 2 – Zoning and land use under relevant planning instruments

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a State Environmental Planning Policy or proposed State Environmental Planning Policies)

Zone and Land Use Table from Local Environmental Plan
RU2 Rural Landscape

a) Purpose/Objective

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base
- To maintain the rural landscape character of the land
- To provide for a range of compatible land uses, including extensive agriculture
- To provide for a range of non-agricultural uses where infrastructure is adequate to support the uses and conflict between different land uses is minimised

b) Permitted with Consent

Agriculture; Airstrips; Animal boarding or training establishments; Bed and breakfast accommodation; Boat launching ramps; Boat sheds; Camping grounds; Caravan parks; Cellar door premises; Cemeteries; Community facilities; Crematoria; Dual occupancies; Dwelling houses; Eco-tourist facilities; Educational establishments; Environmental facilities; Environmental protection works; Farm buildings; Farm stay accommodation; Flood mitigation works; Forestry; Helipads; Home-based child care; Home businesses; Home industries; Information and education facilities; Jetties; Landscaping material supplies; Markets; Open cut mining; Places of public worship; Plant nurseries; Recreation areas; Recreation facilities (outdoor); Roads; Roadside stalls; Rural industries; Rural supplies; Signage; Turf farming; Veterinary hospitals; Water supply systems

c) Permitted without Consent

Extensive agriculture; Home occupations; Intensive plant agriculture

d) Prohibited

Intensive livestock agriculture; Livestock processing industries; Any other development not specified in item 2 or 3.

Detailed information on the land zone mapping is available at the NSW Department of Planning and Environment ePlanning Spatial Viewer website; or Maitland City Council's website.

Note: On 1 December 2022, Business and Industrial zones will be replaced by the new Employment zones under the Standard Instrument (Local Environmental Plans) Order 2006. The Department of Planning and Environment is currently exhibiting details of how each Local Environmental Plan that includes a current Business or Industrial zone will be amended to use the new Employment zones. The Explanation of Intended Effect (EIE) and a searchable web tool that displays the current and proposed zone for land covered in this public exhibition is available on the Planning Portal.

R1 General Residential

a) Purpose/Objective

- To provide for the housing needs of the community
- To provide for a variety of housing types and densities
- To enable other land uses that provide facilities or services to meet the day to day needs of residents

b) Permitted with Consent

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Centre-based child care facilities; Community facilities; Dwelling houses; Group homes; Home-based child care; Home industries; Hostels; Hotel or motel accommodation; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Serviced apartments; Shop top housing; Tank-based aquaculture; Any other development not specified in item 2 or 4

c) Permitted without Consent

Home occupations

d) Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Entertainment facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers' dwellings; Service stations; Sewage treatment plants; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body

repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water recycling facilities; Wharf or boating facilities; Wholesale supplies.

Additional permitted uses

No environmental planning instrument applies additional permitted use provisions to this land.

Note: Detailed information on the local environmental plan is available at NSW Legislation – In force legislation.

Whether development standards applying to the land fix minimum land dimensions for the erection of a dwelling house on the land and, if so, the fixed minimum land dimensions.

For the land zoned RU2 Rural Landscape Clause 4.2A in the Maitland Local Environmental Plan 2011 applies to the land. This clause fixes a minimum lot size for the erection of a dwelling-house that is identified on the Maitland Local Environmental Plan 2011 Lot Size Map as 40 hectares. For the land zoned R1 General Residential the Maitland LEP 2011 does not contain a development standard specifying the land dimensions required to permit the erection of a dwelling house on the land.

Is the land in an area of outstanding biodiversity value under the Biodiversity Conservation Act 2016?

The land IS NOT identified in an area of outstanding biodiversity value under the Biodiversity Conservation Act.

Is the land within a conservation area, however described?

The land IS NOT in a Heritage Conservation Area.

Is there an item of environmental heritage in a local environmental plan?

The land does NOT contain an item of Environmental Heritage.

Note: An item of environmental heritage, namely Aboriginal heritage, listed on the Aboriginal Heritage Information Management System (AHIMS), may be situated on the land. The Department of Planning and Environment, Biodiversity and Conservation Division.

ITEM 3 – Contribution plans

The name of each contributions plan under the Act, Division 7.1 applying to the land, including draft contributions plans.

- Maitland S94A Levy Contributions Plan 2006
- Maitland City Wide Section 94 Contributions Plan 2016
- Maitland S94 Contributions Plan (City Wide) 2006

If the land is in a special contributions area under the Act, Division 7.1, the name of the area.

The land IS NOT in a special contributions area.

Note: In addition to the above developer contribution plans, Development Servicing Plans for water and sewer connection may be applicable, attracting additional contributions for the development, particularly where development will connect to water and/or sewer services.

ITEM 4 – Complying Development

If the land is land on which complying development may be carried out under each of the complying development codes under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, because of that Policy, clause 1.17A(1)(c)–(e), (2), (3) or (4), 1.18(1)(c3) or 1.19.

Complying development under the **Housing Code** may be carried out on the land.

Complying development under the **Low Rise Medium Density Housing Code** may be carried out on the land. Complying development under the **Greenfield Housing Code** may be carried out on the land, but only if the land is identified on the *Greenfield Housing Code Area Map* issued by the NSW Department of Planning and Environment.

Complying development under the **Rural Housing Code** may be carried out on the land.

Complying development under the **Housing Alterations Code** may be carried out on the land.

Complying development under the **General Development Code** may be carried out on the land.

Complying development under the **Commercial and Industrial Alterations Code** may be carried out on the land.

Complying development under the **Commercial and Industrial (New Buildings and Additions) Code** may not be carried out on the land as it is not within an applicable zone.

Complying development under the **Subdivisions Code** may be carried out on the land.

Complying development under the **Demolition Code** may be carried out on the land.

Complying development under the **Fire Safety Code** may be carried out on the land.

Complying development under the **Container Recycling Facilities Code** may not be carried out on the land.

Note: Despite the above provisions, if only part of a lot is subject to an exclusion or exemption under Clause 1.17A or Clause 1.19 of *State Environmental Planning Policy (Exempt and Complying Development Codes) Amendment (Commercial and Industrial Development and Other Matters) 2013*, complying development may be carried out on that part of the lot that is not affected by the exclusion or exemption.
The complying development may not be carried out on the land because of the following provisions of Clauses 1.17A(1)(c) to (e), (2), (3) and (4), 1.18(1)(c3) and 1.19 of the Policy.

The provisions of Clauses 1.17A(1)(c) to (e), (2), (3) and (4), 1.18(1)(c3) and 1.19 are not identified on the land. Complying development may be undertaken in accordance with the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 as amended.

Note: This information needs to be read in conjunction with the whole of the State Environment Planning Policy. If an identification, restriction or characteristic of land referred to above is not located on or does not comprise, the whole of the relevant land, complying development may be carried out on any part of the land not so identified, restricted or characterised.

Note: Information regarding whether the property is affected by flood related development controls or is bushfire prone land is identified in other sections of this certificate. If your property is identified as being impacted by bushfire or flooding, a specific technical assessment of these issues will be required as part of any Complying Development Certificate application under the State Environment Planning Policy, or a development application for any other type of development requiring consent from Council.

Note: Despite any references above advising that Complying Development may be undertaken on the land, certain Complying Development may be precluded from occurring on the land due to requirements contained in the remainder of State Environment Planning Policy (Exempt and Complying Development Codes) 2008. It is necessary to review the State Environment Planning Policy in detail to ensure that specific types of complying development may be undertaken on the land.

If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that

(a) a restriction applies to the land, but it may not apply to all of the land,
(b) and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

If the complying development codes are varied, under that Policy, clause 1.12, in relation to the land.

There are no variations to the exempt development codes within the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 that apply in the Maitland local government area.

For further information on complying development, please refer to the Department of Planning and Environment.

ITEM 5 – Exempt Development

If the land is land on which exempt development may be carried out under each of the exempt development codes under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, because of that Policy, clause 1.16(1)(b1)–(d) or 1.16A.

If exempt development may not be carried out on the land because of 1 of those clauses, the reasons why it may not be carried out under the clause.

If the council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land, a statement that

a) a restriction applies to the land, but it may not apply to all of the land, and
b) the council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land.

If the exempt development codes are varied, under that Policy, clause 1.12, in relation to the land.

ITEM 6 – Affected building notices and building product rectification orders

Whether the council is aware that –

The Council IS NOT aware of any affected building notice which is in force in respect of the land.

The Council is NOT aware of any building product rectification order which is in force in respect of the land and that has not been fully complied with.

The Council IS NOT aware of any notice of intention to make a building product rectification order being given in respect of the land and that is outstanding.

ITEM 7 - Land Reserved for Acquisition

Whether an environmental planning instrument or proposed environmental planning instrument referred to in section 1 makes provision in relation to the acquisition of the land by an authority of the State, as referred to in the Act, section 3.15.

No environmental planning instrument, deemed environmental planning instrument or draft environmental planning instrument applying to the land provides for the acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

ITEM 8 – Road widening and road realignment

Whether the land is affected by road widening or road realignment under –

a) The land is NOT affected by road widening under Division 2 of Part 3 of the Roads Act 1993.

b) The land is NOT affected by road widening under any environmental planning instrument

c) The land is NOT affected by any road-widening or realignment under any resolution of the Council

d) The land is NOT affected by road-widening or realignment under a resolution of the Council

Note: This item relates to Council's road proposals only. Other authorities, including the NSW Roads and Traffic Authority may have road widening proposals.

ITEM 9 – Flood related development controls

The land or part of the land IS NOT within the flood planning area and subject to flood related development controls.

The land or part of the land IS NOT between the flood planning area and the probable maximum flood and subject to flood related development controls.

The Maitland LEP 2011 identifies the flood planning level (FPL) as the level of a 1:100 ARI flood event plus 0.5m freeboard. The probable maximum flood has the same meaning as the Floodplain Development Manual.

Note in this section – ***flood planning area*** has the same meaning as in the Floodplain Development Manual. ***Floodplain Development Manual*** means the Floodplain Development Manual (ISBN 0 7347 5476 00) published by the NSW Government in April 2005. ***probable maximum flood*** has the same meaning as in Floodplain Development Manual

Note: The information provided in item 9 is based on the data and information presently available to the Council and on development controls in force as at the date of this certificate. The identification of land as not being subject to flood related development controls does not mean that the land is not, or may not be, subject to flooding or that the land will not in the future be subject to flood related development controls, as additional data and information regarding the land become available.

ITEM 10 – Council and other public authority policies on hazard risk restrictions

Whether any of the land is affected by an adopted policy that restricts the development of the land because of the likelihood of land slip, bush fire, tidal inundation, subsidence, acid sulfate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or another risk, other than flooding.

All land within the Maitland Local Government Area has the potential to contain acid sulfate soils. Clause 7.1 of the Maitland Local Environmental Plan 2011 generally applies. Development consent is required where works described in the Table to this clause are proposed on land shown on the Maitland LEP 2011 Acid Sulfate Soils Map as being of the class specified for those works.

The Council has adopted by resolution a policy on contaminated land which may restrict the development of the land to which this certificate relates. This policy is implemented when zoning or land use changes are proposed on lands which:

- are considered to be contaminated; or
- which have previously been used for certain purposes; or
- which have previously been used for certain purposes but Council's records do not have sufficient information about previous use of the land to determine whether the land is contaminated; or
- have been remediated for a specific use.

Consideration of Council's adopted policy and the application of provisions under relevant State legislation is warranted.

Note in this section –
adopted policy means a policy adopted –
a) by the council,or
b) by another public authority, if the public authority has notified the council that the policy will be included in a planning certificate issued by council.

ITEM – 11 Bush fire prone land

If any of the land is bush fire prone land, designated by the Commissioner of the NSW Rural Fire Service under the Act, section 10.3, a statement that all or some of the land is bush fire prone land.

The land is mapped as bushfire prone land and as such restrictions may apply to new development on this land.

Note – In accordance with the *Environmental Planning and Assessment Act 1979,* bush fire prone land, in relation to area, means land recorded for the time being as bush fire prone on a bush fire prone land map for the area. This mapping is subject to periodic review.

Note – The identification of land as not being bushfire prone does not mean that the land is not, or may not be affected by bushfire or that the land will not in the future be subject to bushfire related development controls, as additional data and information regarding the land become available.

ITEM – 12 Loose-fill asbestos insulation

If the land includes residential premises, within the meaning of the Home Building Act 1989, Part 8, Division 1A, that are listed on the Register kept under that Division, a statement to that effect.

There are no premises on the subject land listed on the register.

ITEM – 13 Mine subsidence

Whether the land is declared to be a mine subsidence district, within the meaning of the Coal Mine Subsidence Compensation Act 2017.

The land has NOT been proclaimed to be within a Mine Subsidence District under the meaning of section 20 of the Coal Mine Subsidence Compensation Act 2017.

ITEM – 14 Paper subdivision information

There is no development plan that applies to the:

1) Land or that is proposed to be subject to a consent ballot
2) There is no subdivision order that applies to the land.

ITEM – 15 Property vegetation plans

If the land in relation to which a property vegetation plan is approved and in force under the Native Vegetation Act 2003, Part 4, a statement to that effect, but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act.

The Council has not received any notification from Hunter Local Land Services that this land is affected by a property vegetation plan under Part 4 of the Native Vegetation Act 2003 (and that continues in force).

ITEM – 16 Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under the Biodiversity Conservation Act 2016, Part 5, a statement to that effect, but only if the council has been notified of the existence of the agreement by the biodiversity Conservation Trust.

The Council is not aware if the land is a biodiversity stewardship site under a biodiversity stewardship agreement under part 5 of the *Biodiversity Conservation Act 2016.*

Note – Biodiversity stewardship agreements include biobanking agreements under the *Threatened Species Conservation Act 1995,* Part 7A that are taken to be biodiversity stewardship agreements under the *Biodiversity Conservation Act 2016,* Part 5.

ITEM 17 – Biodiversity certified land

If the land is biodiversity certified land under the Biodiversity Conservation Act 2016, Part 8, a statement to that effect.

The land is not biodiversity certified land under Part 8 of the Biodiversity Conservation Act 2016.

Note – Biodiversity certified land includes land certified under the *Threatened Species Conservation Act 1995,* Part 7AA that is taken to be certified under the *Biodiversity Conservation Act 2016,* Part 8.

ITEM 18 – Orders under Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land, but only if the council has been notified or the order.

Council has NOT received notification from the Land and Environment Court of NSW that the land is affected by an Order under Trees – (Disputes Between Neighbours) Act 2006.

ITEM 19 – Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

If the *Coastal Management Act 2016* applies to the council, whether the owner, or a previous owner, of the land has given written consent to the land being subject to annual charges under the *Local Government Act 1993,* section 496B, for coastal protection services that relate to existing coastal protection works.

The owner (or any previous owner) of the land has NOT consented in writing to the land being subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

Note - In this section existing coastal protection works has the same meaning as in the Local Government Act 1993, section 553B.

Note – Existing coastal protection works are works to reduce the impact of coastal hazards on land, such as seawalls, revetments, groynes and beach nourishment, that existed before 1 January 2011

ITEM 20 – Western Sydney Aerotropolis

The State Environmental Planning Policy (Precincts – Western Parkland City) 2021 does not apply to land within the Maitland City Council local government area.

ITEM 21 – Development consent conditions for seniors housing

If State Environmental Planning Policy (Housing) 2021, Chapter 3, Part 5 applies to the land, any conditions of a development consent granted after 11 October 2007 in relation to the land that are of the kind set out in that Policy, section 88(2).

Clause 88(2) of the *State Environmental Planning Policy (Housing) 2021* restricts occupation of development approved for seniors housing to:

a) Seniors or people who have a disability
b) People who live in the same household with seniors or people who have a disability,
c) Staff employed to assist in the administration and provision of services to housing provided under this Part.

ITEM 22 – Site compatibility certificates and development consent conditions for affordable rental housing

Whether there is a current site compatibility certificate under State Environmental Planning Policy (Housing) 2021, or a former site compatibility certificate, of which the council is aware, in relation to proposed development on the land and, if there is a certificate –

a) the period for which the certificate is current, and
b) that a copy may be obtained from the Department.

If State Environmental Planning Policy (Housing) 2021, Chapter 2, Part 2, Division 1 or 5 applies to the land, any conditions of a development consent in relation to the land that are of a kind referred to in that Policy, section 21(1) or 40(1).

Any conditions of a development consent in relation to land that are kind referred to in State Environmental Planning Policy (Affordable Rental Housing) 2009, clause 17(1) or 38(1).

Note - No Seniors Housing development consent conditions apply to this land.

Note - In this section – Former site compatibility certificate means a site compatibility certificate issued under State Environmental Planning Policy (Affordable Rental Housing) 2009.

Council is unaware if a Site Compatibility Certificate (Affordable Rental Housing) has been issued in accordance with State Environmental Planning Policy (Affordable Rental Housing) 2009.

Note. The following matters are prescribed by section 59(2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate.

Contaminated Land

a) The land to which this certificate relates is NOT significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.

b) The land to which this certificate relates is NOT subject to a management order within the meaning of the Contaminated Land Management Act 1997.

c) The land to which this certificate relates is NOT the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.

d) The land to which this certificate relates is NOT the subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.

e) Council has NOT been provided with a site audit statement, within the meaning of the Contaminated Land Management Act 1997, for the land to which this Certificate relates.

PART 2: ADDITIONAL MATTERS PROVIDED PURSUANT TO SECTION 10.7 (5)

The following information is provided in accordance with section 10.7(5) of the Environmental Planning and Assessment Act 1979. Section 10.7(6) of the Act states that a Council shall not incur any liability in respect of advice provided in good faith pursuant to sub-section 10.7(5). If this information is to be relied upon, it should be independently checked.

1. Development Consent

Councils records indicate that the land has not had any development consent granted within the five (5) years preceding the date of this certificate.

2. Draft Development Control Plan

No draft Development Control Plans apply to the land.

3. Suspension of Covenants

Clause 1.9A in the Maitland LEP 2011 applies to all land within the Maitland Local Government Area. This clause suspends any agreement, covenant or other instrument that restricts the development of land that is permissible under the provisions of the Maitland Local Environmental Plan 2011 to the extent necessary to serve that purpose.

4. Filling of Land

Earthworks (excavation and filling of land) require development consent. Clause 7.2 in the Maitland LEP 2011 applies to all land within the Maitland Local Government Area. Earthworks (defined as both excavation and filling of land) require development consent of Council unless the works are exempt development, ancillary to other development for which development consent is required or granted, or considered by Council to be of a minor nature.

5. Development in the Vicinity of Heritage Items

Clause 5.10 in the Maitland LEP 2011 generally applies to all land in the Maitland Local Government Area, where the land is located in the vicinity of a heritage item or heritage conservation area. This Clause requires a consent authority to consider the effect of the proposed development on the heritage significance of the item or area concerned, before granting development consent.

6. Other Matters

There are no other specific matters.

David Evans
General Manager

Appendix E LAND TITLE DOCUMENTATION

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

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

Summary of Owners Report

Address: - Gillieston Public School, 100 Ryans Road, Gillieston, NSW 2321

Description: - Lot 51 D.P. 1162489

As to the part numbered 1 on attached Cadastral Records Enquiry Report: -

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
08.02.1898	Her Majesty The Queen (Acquired for the purpose of the Public Instruction Act of 1880)	Book 617 No. 503
08.02.1898 (1898 to Date)	# Minister of Public Instruction Now # Minister for Education & Training	Book 617 No. 503 Then 1/797922 Now 51/1162489

 # Denotes current registered proprietor

Email: mark.groll@infotrack.com.au
Email: taylor.wilson@infotrack.com.au

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

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

As to the part numbered 2 on attached Cadastral Records Enquiry Report: -

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
03.10.1916 (1916 to 1916)	John Borthwick (Solicitor) Kenneth Stewart Clift (Grazier)	Volume 2703 Folio 103
16.12.1916 (1916 to 1926)	Adelaide Abelia Enright (Married Woman)	Volume 2703 Folio 103 Now Volume 2736 Folio 126
01.03.1926 (1926 to 1953)	Thomas McInerney (Carter)	Volume 2736 Folio 126 Now Volume 3866 Folio 245
26.06.1953 (1953 to 1970)	Herbert Victor Jordon (Dairy Farmer)	Volume 3866 Folio 245 Now Volume 7085 Folio 160
09.04.1970 (1970 to 1997)	Royden Francis Jordon (Diary Farmer)	Volume 7085 Folio 160 Then Volume 12482 Folio 98 Then Volume 13144 Folio 103 Then Volume 13404 Folio 249 Then Volume 13764 Folio 151 Then 21/598848 Now 3/817693
31.01.1997 (1997 to 1998)	Brian Thomas Jordon Douglas Paul Jordon Phillip Edward Jordon (Transmission Application)	3/817693 Now 5/868890
20.02.1998 (1998 to 1998)	Rajinder Singh Dhami Kay Dhami	5/868890
20.02.1998 (1998 to 2009)	Subdivision Investments Pty. Limited	5/868890
18.09.2009 (2009 to 2011)	Joolmibi Pty Limited Now York Company Pty Limited	5/868890
27.04.2011 (2011 to Date)	# Minister for Education & Training	5/868890 Now 51/1162489

 # Denotes current registered proprietor

Continued Over.

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

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

Leases: - NIL

Easements: -

- 23.03.2011 (D.P. 1162489): Easement to drain water variable width affecting the part(s) shown so burdened in the diagram.

Yours Sincerely,
Taylor Wilson
14th December 2022

Appendix F SAFEWORK

LICENCE No. 35/010938 VOL

N.S.W. GOVERNMENT DEPARTMENT OF INDUSTRIAL RELATIONS

DANGEROUS GOODS BRANCH

DEPT. OF PUBLIC WORKS

WCA - Unclassified
Recfind File 35/010938
WorkCover Authority of NSW
Custodian Licensing Unit - OHS
Created 1/01/1975
HEALTH & SAFETY MANAGEMENT - LICENSING - Dangerous Goods Keeping Licence 35/010938 - Gillieston Heights, Gillieston Rd

FILE SCANNED
DATE 28.11.91 BY E.C DISK NAME DGIBB

KEEPING LICENCE

INSPECTION DISTRICT NO.....

.....

LICENCE No. 35/010938 VOL

Licence Number 35/010938

CLOSED FILE
2004

Occupier:
DEPARTMENT OF EDUCATION & TRAINING
GILLIESTON PUBLIC SCHOOL

Site:
GILLIESTON RD,
GILLIESTON HEIGHTS 2321

WorkCover. **Watching out for you.**

WorkCover NSW ABN 77 682 742 966 92-100 Donnison Street Gosford NSW 2250 Locked Bag 2906 Lisarow NSW 2252
Telephone 02 4321 5000 Facsimile 02 4325 4145 WorkCover Assistance Service **13 10 50**
DX 13067 Website **www.workcover.nsw.gov.au**

WC1216LH

Licence No. 35/010938

RECEIVED
SERVICE CENTRE
11 MAR 2004
WORKCOVER
NEW SOUTH WALES

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: Please renew licence number 35/010938 to 14/04/2005 . I confirm that all the licence details shown below are correct (amend if necessary).

..... Louise Blakemore 1.3.04

(Signature) *(Please print name)* *(Date signed)*

for: DEPARTMENT OF EDUCATION & TRAINING

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section
LOCKED BAG 2906
LISAROW NSW 2252

Enquiries:ph (02) 43215500
fax (02) 92875500

Details of licence on 27 February 2004

Licence Number 35/010938 **Expiry Date** 14/04/2004

Licensee DEPARTMENT OF EDUCATION & TRAINING GILLIESTON PUBLIC SCHOOL

Postal Address: GILLIESTON PUBLIC SCHOOL GILLIESTON RD
GILLIESTON HEIGHTS NSW 2321

Licensee Contact ~~CHARLES VELLA~~ LOUISE BLAKEMORE Ph. 049 327542 Fax. 049 325950

Premises Licensed to Keep Dangerous Goods
DEPARTMENT OF EDUCATION & TRAINING GILLIESTON PUBLIC SCHOOL
GILLIESTON RD GILLIESTON HEIGHTS 2321

Nature of Site PRIMARY EDUCATION

Major Supplier of Dangerous Goods BORAL

Emergency Contact for this Site ~~CHARLES VELLA~~ LOUISE BLAKEMORE Ph. 049 327542

Site staffing 6.5 HRS 5 DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot		Qty
LPG1	ABOVE-GROUND TANK		Class 2.1	1100 L
		UN 1075 PETROLEUM GASES, LIQUEFIED		1000 L

NB: Above-ground tank has been emptied & disconnected by a licenced plumber. We are currently waiting for the gas company to remove the tank from our site.

SERVICE CENTRE
2 1 MAR 2000
WORKCOVER NEW SOUTH WALES

Box 262

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Telephone 9370 5000 ALL MAIL TO G.P.O. BOX 5364 SYDNEY 2001

Licence No. 35/010938

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

WorkCover NEW SOUTH WALES

DECLARATION: Please renew licence number 35/010938 to 15/04/2001 . I confirm that all the licence details shown below are correct (amend if necessary).

..... Charles Vella ..... 17/3/00 .....

(Signature) *(Please print name)* *(Date signed)*

for: SCHOOL EDUCATION DEPARTMENT

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section
GPO BOX 5364
SYDNEY 2001

Enquiries: ph (02) 9370 5187
fax (02) 9370 6105

Details of licence on 10 March 2000

Licence Number 35/010938 **Expiry Date** 15/04/2000

Licensee SCHOOL EDUCATION DEPARTMENT
GILLIESTON PUBLIC SCHOOL

Postal Address: GILLIESTON PUBLIC SCHOOL GILLIESTON RD GILLIESTON HEIGHTS NSW 2321

Licensee Contact ~~J BULTITUDE~~ Ph. 049 327542 Fax. 049 325950 CHARLES VELLA

Premises Licensed to Keep Dangerous Goods
SCHOOL EDUCATION DEPARTMENT GILLIESTON PUBLIC SCHOOL
GILLIESTON RD GILLIESTON HEIGHTS 2321

Nature of Site PRIMARY EDUCATION

Major Supplier of Dangerous Goods BORAL

Emergency Contact for this Site ~~J BULTITUDE~~ Ph. 049 327542 CHARLES VELLA

Site staffing 6.5 HRS 5 DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
LPG1	ABOVE-GROUND TANK	Class 2.1	1100 L
		UN 1075 PETROLEUM GASES, LIQUEFIED	1000 L

DATA
27 MAR 2000 BL
ENTERED

Form DG10

TRANSFER: A Licence to Keep Dangerous Goods is issued for a specified site. If control of a site is transferred (by way of sale or lease or otherwise), the person who held the licence immediately before the transfer must notify WorkCover's Scientific Services Branch. This notification must be submitted, in writing, within 7 days after the transfer and must specify the date the transfer was effected and include the name and address of the new occupier/owner.

AMENDMENT: If there is any change to the licence details or dangerous goods storage conditions at the site, the licensee must as soon as practicable notify WorkCover's Scientific Services Branch, in writing, of the change. The licensee must also apply for an appropriate amendment of the licence if, as a result of the change, the licence details are no longer appropriate or no longer correct.

RENEWAL: The licensee contact will be forwarded an Application to Renew the Dangerous Goods Licence six to eight weeks prior to the expiry date printed on the licence. If you do not receive the renewal application, please contact WorkCover's Dangerous Goods Licensing Section ☎ (02) 9370 5187 before the licence expires.

DESCRIPTION OF DANGEROUS GOODS CLASSES

Class 1 Explosives (including detonators).
Class 1.4S Safety cartridges.
Class 2.1 Flammable gases (e.g. LP Gas, acetylene).
Class 2.2 Non-flammable, non-toxic gases (e.g. oxygen, nitrogen).
Class 2.3 Toxic gases (e.g. chlorine, anhydrous ammonia).
Class 3 Flammable liquids (e.g. petrol, kerosene, paint thinners, methylated spirits).
C1 & C2 Combustible liquids (e.g. diesel fuel, heating oil, vegetable oil).
Class 4.1 Flammable solids (e.g. nitrocellulose, sodium metal, calcium carbide).
Class 4.2 Substances liable to spontaneous combustion (e.g. sodium hydrosulfite).
Class 4.3 Substances that in contact with water emit flammable gases (e.g. calcium carbide).
Class 5.1 Oxidizing substances (e.g. dry pool chlorine, ammonium nitrate).
Class 5.2 Organic peroxides (e.g. dibenzoyl peroxide, MEKP).
Class 6.1 Toxic substances (e.g. sodium cyanide, some pesticides).
Class 6.2 Infectious substances (e.g. bacteria: administered by NSW Health, EPA and WorkCover NSW).
Class 7 Radioactive material (e.g. uranium hexafluoride: administered by the EPA).
Class 8 Corrosive substances (e.g. hydrochloric acid, sulfuric acid, liquid pool chlorine).

SOME DANGEROUS GOODS MAY BE KEPT WITHOUT A DANGEROUS GOODS KEEPING LICENCE. For example:

1. ***Acetylene***: 60 m^3 or less per premises (i.e. up to and including 8 x "G" size cylinders).
2. ***Diesel fuel, Heating oil***: any amount if stored in packages (e.g. drums) OR in tanks with a capacity of 50,000 litres or less.
3. ***Petrol and other dangerous goods of Class 3, Packing Group I or II***: 100 litres or less per premises when stored aboveground.
4. ***Kerosene and other dangerous goods of Class 3, Packing Group III***: 1,000 litres or less per premises when stored aboveground.
5. ***Class 6.1 - Toxic substances***: 10L/kg or less of Packing Group I, 100L/kg or less of Packing Group II, and 1000L/kg or less of Packing Group III.
6. ***Class 8 - Corrosive substances***: 10L/kg or less of Packing Group I, 100L/kg or less of Packing Group II, and 1000L/kg or less of Packing Group III

Please contact WorkCover's Dangerous Goods Licensing Section ☎ (02) 9370 5187, Information Centre Hotline 13 10 50, or your local WorkCover office for further information or assistance on licensing or storage of dangerous goods.

WorkCover NSW offices	☎		☎		☎
Blacktown	(02) 9671 8700	Albury	(02) 6021 5911	Central Coast	(02) 4353 2373
Hurstville	(02) 9598 3366	Batemans Bay	(02) 4472 5544	Grafton	(02) 6642 0511
Lindfield	(02) 9936 3000	Blackbutt	(02) 4297 3796	Lismore	(02) 6622 0088
Liverpool	(02) 9827 8600	Dubbo	(02) 6884 2799	Narrabri	(02) 6792 4643
Parramatta	(02) 9841 8550	Goulburn	(02) 4822 1243	Newcastle	(02) 4921 2900
Sydney	(02) 9370 5027	Griffith	(02) 6964 2027	Port Macquarie	(02) 6584 1188
Metro East Region	(02) 9370 5059	Orange	(02) 6361 7070	Tamworth	(02) 6786 2490
Metro West Region	(02) 9841 8550	Wagga Wagga	(02) 6921 8766	Toronto	(02) 4959 6366
Country North Region	(02) 4921 2900	Wollongong	(02) 4222 7333	Tweed Heads	(07) 5536 3262
Country South Region	(02) 4222 7333				

Station No/Platoon MAITLAND **Original**

FIRE BRIGADE VISIT TO DANGEROUS GOODS SITE

License No. 35/ 010938 Date of visit 27/3/98

Site Name & Address
SCHOOL EDUCATION DEPARTMENT
T/AS GILLIESTON PUBLIC SCHOOL GILLIESTON HTS

Site Contact Name J. BULTITUDE Phone No 0249 327542

Company listed in SCID is at site [YES] [~~NO~~]

If no, current occupier is .....

Are there licensable quantities of Dangerous Goods at the site

[YES] or [~~UNSURE~~] Application form given to occupier

[NO] Cancellation letter given to occupier

COMMENTS LPG Gas tank Dome not secured
No Security Fence

Send form to Fire Brigade SCID Returning Officer, Fire Prevention, Amarina Ave Greenacre. 2190

Station copy

License No. 35/ 010938 Date of visit 27/3/98

Site Name & Address
SCHOOL EDUCATION DEPARTMENT
T/AS GILLIESTON HTS PUBLIC SCHOOL

Contact Name J. BULTITUDE Phone No 0249327542

Action taken

.....

Gases Liquids

Sep: **DG CHECK** Date 27/3/98 DG Licence 35/010988

Company: SCHOOL EDUCATION DEPARTMENT

Address: GILLIESTON PUBLIC SCHOOL GILLIESTON HTS

Company staff accompanying you (contact person): J. BULTITUDE phone 0249327542

FB Station. MAITLAND Officer CPT M CALLINAN phone 0249332757

If in doubt how to assess a situation, ask the manager to answer the question; example "explain please, how the full tank contents can be contained". If he can't, the answer is "no" + short comment.

When you reach 6-8 "no" answers, stop if you like; the site will get attention very soon.

On/above ground tanks & gas cylinders

Indicate depot number according to DG licence ☐ ☐ ☑ ☐

Write Yes / No

1 a) Does the Manager have the current DG licence and SCID site plan available ? ☐ ☐ ☑ ☐

b) Does the site plan clearly identify the location and access to all licensed DG depots and all other larger chemical storages AND does it match the listing on the licence ? ☐ ☐ ☑ ☐

If not, short comment: .....

.....

2 a) Is the tanks contents as shown on the licence ? ☐ ☐ ☑ ☐
Look especially for changes petrol/diesel or between different corrosives

b) Do all tanks have markings clearly & correctly identifying contents ? ☐ ☐ ☑ ☐

c) Do all tanks (except oil or diesel) have correct diamond sign ? ☐ ☐ ☑ ☐
Note: diamond for all tanks 250 mm square, for gas cylinders 100 mm

If not, short comment .....

.....

.....

3 a) Is the bund area around tanks or area 3 m wide around cylinders free from DG of any other class or any fire risks such as dead trees, tall dry grass, stacks of pallets ? ☐ ☐ ☐ ☐

b) For flammable liquids (not oil/ diesel) & flammable gases only: Is the bund around tanks or area within 3 m of gas cylinders free from ignition sources ? ☐ ☐ ☐ ☐

If not, short comment .....

.....

4) Is all fire fighting equipment in good order and accessible in emergency, are all extinguishers serviced every 6 months, are test records kept for deluge/ foam systems ? ☐ ☐ ☑ ☐

If not, short comment .....

.....

5 a) Is the bund able to contain the full contents of the largest tank ? ☐☐☐☐

b) At the moment of your inspection, is the bund completely liquid tight ? ☐☐☐☐
Check for open bund drain valves, cracks in masonry, missing bricks etc.

If not, short comment .....

.....

6 a) Can you see from outside bund if tank isolating valves are open or closed ? ☐☐☐☐
(Check for rising spindle valve, quarter turn valve handle or position indicator)

b) Do all transfer pumps have emergency shutdown & is its location clearly identified ? ☐☐☐☐
(shut down button or main breaker must be outside bund or spillage area)

If not, short comment .....

.....

7 a) Is the loading position from tank to tanker outside the tank bund ? ☐☐☐☐

b) Tanker top loading: is self closing valve (dead man's handle) installed ? or
Tanker bottom loading: is fully automatic overfill protection installed ? ☐☐☐☐
(this means that no one is required to stand on top of tanker to check filling)

If not, short comment .....

.....

LPGas tanks and cylinders for flammable gas

9) Are all tank/ cylinder valves protected against tampering ? ☐☐☐☑
("yes" if whole site or storage depot is fenced in or under continuous supervision
or tank/ cylinder have dome covers kept locked when not under supervision)

If not, short comment ..... DOME NOT SECURE
..... No Security Fence

10) Is any LPG decanting cylinder

a) always kept outdoors, even when factory/ service station is closed (ask site staff) ☐☐☐☑

b) at least 2 m away from any opening (door/window/vent/air cond.) into a building ? ☐☐☐☑

c) at least 3 m away from any bowser, above ground DG tank, public street ? ☐☐☐☑

d) at least 5 m away from any fixed ignition sources (including power points,
electric motors, switches, but NOT passing vehicles) near ground level ? ☐☐☐☑

If not, short comment .....

.....

11) Is the number of unconnected (spares & empties) acetylene/ LPgas cylinders inside
any factory or warehouse limited to 5 each LPG and acetylene cylinders ? ☐☐☐☐

If not, short comment .....

.....

Please attach any additional comments you wish to make.

WorkCover New South Wales, 400 Kent Street, Sydney 2000. Telephone (02) 370 5000 ALL MAIL TO LOCKED BAG 10, CLARENCE STREET SYDNEY 2000

Reference

WORKCOVER NEW SOUTH WALES

APPLICATION FOR RENEWAL

OF LICENCE TO KEEP DANGEROUS GOODS

ISSUED UNDER AND SUBJECT TO THE PROVISIONS OF THE DANGEROUS GOODS ACT, 1975 AND REGULATION THEREUNDER

DECLARATION: *Please renew licence number 35/010938 to 1997. I confirm that all the licence details shown below are correct (amend if necessary).*

J Bultitude ..... J.M. Bultitude ..... 18/3/96 .....

(Signature) *(Please print name)* *(Date signed)*

for: SCHOOL EDUCATION DEPARTMENT

*THIS **SIGNED** DECLARATION SHOULD BE **RETURNED TO:***

WorkCover New South Wales
Dangerous Goods Licensing Section (Level 3)
Locked Bag 10
P O CLARENCE STREET 2000

RECEIVED MAIL ROOM 20 MAR 1996 WORKCOVER NEW SOUTH WALES

RECEIVED 20 MAR 1996 STORAGE SERVICES BRANCH

Details of licence on 8 March 1996

Licence Number 35/010938 **Expiry Date** 16/04/96

Licensee SCHOOL EDUCATION DEPARTMENT
GILLIESTON PUBLIC SCHOOL

Postal Address GILLIESTON RD, GILLIESTON HEIGHTS 2321

Licensee Contact ~~J Green~~ Ph. 049 327542 Fax. 049 325950 J. Bultitude

Premises Licensed to Keep Dangerous Goods
GILLIESTON RD
GILLIESTON HEIGHTS 2321

Nature of Site PRIMARY SCHOOLS **Major Supplier of Dangerous Goods** BORAL

Emergency Contact for this Site ~~J Green ph. 049 327542~~ as above

Site staffing 6.5 HRS 5 DAYS

Details of Depots

Depot No.	Depot Type	Goods Stored in Depot	Qty
LPG1	ABOVE-GROUND TANK	Class 2.1	1100 L
		UN 1075 PETROLEUM GASES, LIQUE	1000 L

DATA 17 APR 1996 ENTERED

17/4/96

Licences are issued, for a specified site, if control of a site is transferred (by way of sale or lease or otherwise), the person who held the licence concerned immediately before the transfer must, within 7 days after the transfer, notify the Chief Inspector. This notification must be in writing and must specify the date on which the transfer was effected and the name and address of the transferee.

Dangerous Goods are divided into classes and an explanation is shown below. Certain dangerous goods may be kept without a licence, providing the quantity of the goods does not exceed the amount specified in the exemptions listed below.

EXPLANATION OF DANGEROUS GOODS AND THEIR CLASSES

1.1 Blasting explosives (including detonators).
1.4 Safety cartridges
2.1 Flammable gases (e.g. L.P.Gas, acetylene).
2.2 Non flammable, non toxic gases (e.g. liquid oxygen, liquid nitrogen).
2.3 Poisonous Gases (e.g. chlorine, anhydrous ammonia)
3 Flammable liquids (e.g. any or all of petrol, kerosene, solvents, methylated spirits).
C1 Combustible liquids (e.g. distillate, diesel fuel, heating oil).
4 Flammable solids (e.g. nitro cellulose, sodium metal, calcium carbide).
5.1 Oxidising substances (e.g. pool chlorine, ammonium nitrate).
5.2 Organic peroxides (e.g. dibenzoyl peroxide)
6.1 (a) Poisons (e.g. sodium cyanide, some pesticides);
(b) Harmful substances (e.g. sodium fluorosilicate, some pesticides).
6.2 Infectious substances
7 Radioactive substances (storage of Class 7 is NOT covered by the Dangerous Goods Act, 1975).
8 Corrosives (e.g. hydrochloric acid, sulphuric acid, sodium hydroxide, sodium hypochlorite).

EXEMPTIONS FROM LICENCE

1. *Acetylene*: Storage of 60 cu.m or less of acetylene per premises (i.e. up to and including 8 x "G" class cylinders, the most common size of acetylene cylinder).
2. *Class C1-Distillate, Diesel Fuel, Heating Oil*: Storage of 50,000 litres or less per tank.
3. *Petrol and other class 3 packaging group I & II dangerous goods* : Storage of 100 litres or less per premises.
4. *Kerosene and other class 3 packaging group III dangerous goods* : Storage of 1,000 litres or less per premises when stored aboveground.
5. *Class 6 - Poisonous Substances* : Packaging group I not more than 10L/kg, packaging group II not more than 100L/kg, packaging group III not more than 1000L/kg,
6. *Class 8 - Corrosive Substances* : Packaging group I not more than 50L/kg, packaging group II not more than 500L/kg, packaging group III not more than 1000L/kg,

Please contact the WorkCover Authority ☎ (02) 370 5187 for further exemptions.

OTHER WORKCOVER AUTHORITY OFFICES - Advice on Dangerous Goods* can also be obtained from the following offices.

	☎		☎
GOSFORD	(043) 24 3384		
NEWCASTLE	(049) 21 2900	HURSTVILLE	(02) 598 3366
ORANGE	(063) 61 7070	LINDFIELD	(02) 936 3000
PORT MACQUARIE	(065) 84 1188	LIVERPOOL	(02) 827 8600
WAGGA WAGGA	(069) 21 8766	PARRAMATTA	(02) 841 8550
WOLLONGONG	(042) 22 7333		

*** Dangerous Goods licensing enquiries to Scientific Services Branch ☎ (02) 370 5187**

THE NEW SOUTH WALES GOVERNMENT
Putting people first by managing better

PART A

SCIENTIFIC SERVICES BRANCH
DANGEROUS GOODS

WORKCOVER AUTHORITY

LICENCE TO KEEP DANGEROUS GOODS

(Dangerous Goods Act 1975)

Application for new licence, amendment or transfer

Expiry: 16.4.96

1. Name of applicant — ACN
   Gillieston Public School

2. Site to be licensed
   No | Street
   Gillieston Rd
   Suburb/Town | Postcode
   Gillieston Heights | 2321

3. Previous licence number (if known) 35/010938

4. Nature of site: School

5. Emergency contact on site:
   Phone | Name
   049327542 | J. Green (Rel. Principal)

6. Site staffing: Hours per day 6½ | Days per week 5

7. Major supplier of dangerous goods: Boral Gas (NSW) Pty Ltd.

8. If new site or significant modification
   Plan stamped by: | Accredited consultant's name: | Date stamped

9. Number of dangerous goods depots at site: 1

10. Trading name or occupier's name
    Gillieston Public School

11. Postal address of applicant | Suburb/Town | Postcode
    Gillieston Rd | Gillieston Heights | 2321

12. Contact for licence enquiries:
    Phone | Fax | Name
    327542 | 325950 | J. Green

I certify that the details contained in this application (or the accompanying computer disk) are true and correct

13. Signature of applicant: JGreen — Date: 12-4-94

DATA ENTERED -4 OCT 1994

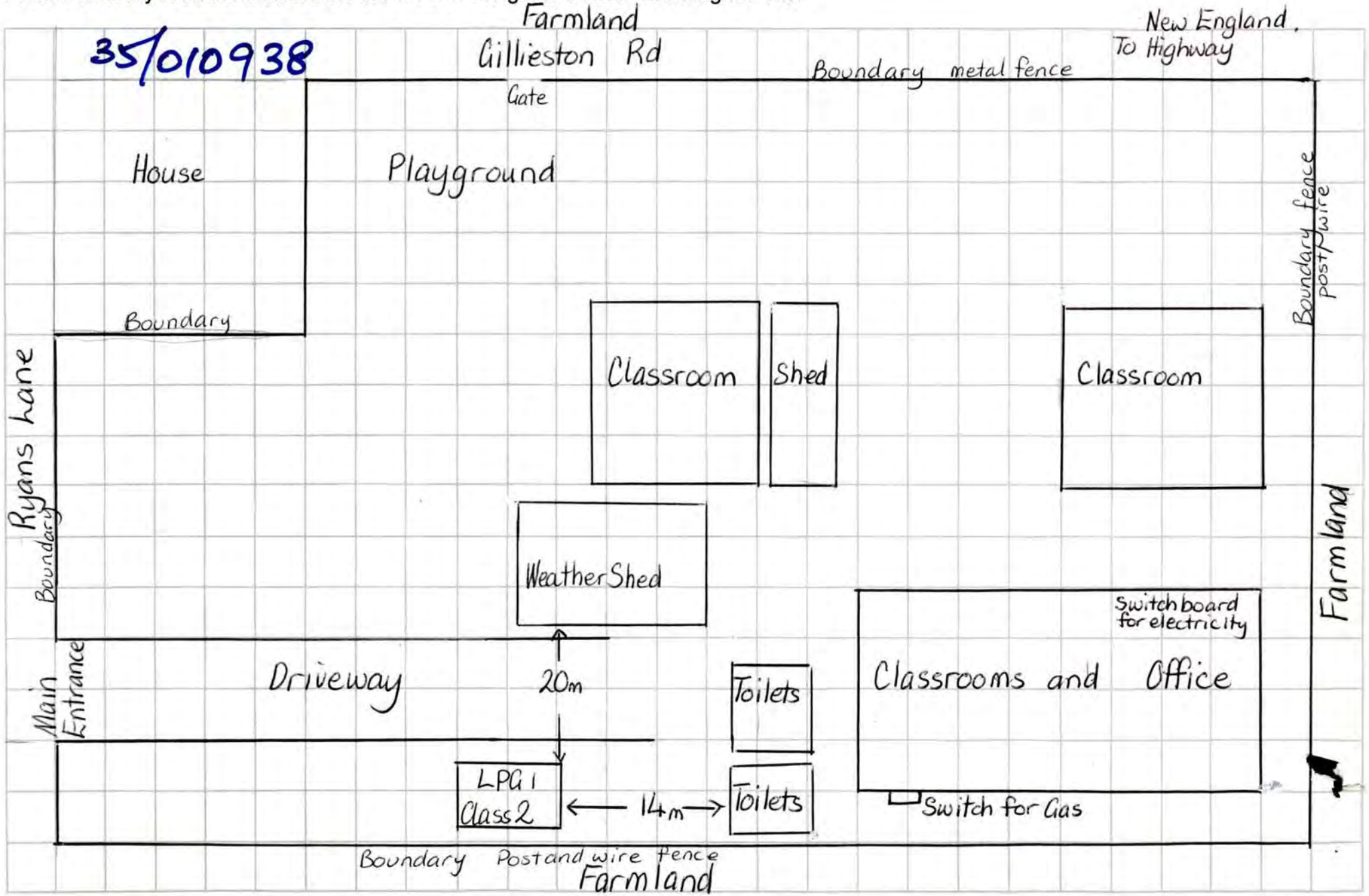
Sent 6/10/94

Please complete attached site sketch, depot listing and check sheet (if required) and return to WorkCover Authority in envelope provided.

Form DG1

Site Sketch

Please carefully read the instructions in Part B of the guide before sketching the site.



PART B

PART C

Complete 1 section per depot

CHEMICAL STORAGE
35/0/0938

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot number	Type of depot	Class	Licensed maximum storage capacity
LPG1	Aboveground tank	2.1	1000 L

UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³
1075	Petroleum Gas ~~LPG Gas~~				LPG gas	1000	L
	Boral Gas (NSW) Pty Ltd						

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	Pkg. EPG	Product or common name	Typical quantity	Unit eg. L, kg, m³

Complete 1 section per depot

If you have more depots than the space provided, photocopy sufficient sheets first.

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m^3

Depot number	Type of depot	Class	Licensed maximum storage capacity

UN number	Shipping name	Pkg. Class	Pkg. Group	EPG	Product or common name	Typical quantity	Unit eg. L, kg, m^3

Reference 35/010938

WORKCOVER AUTHORITY

SCIENTIFIC SERVICES BRANCH
Dangerous Goods Licensing
ph. (02) 370 5187 fax (02) 370 6105

The Principal
Public School
Ryans Lane
GILLIESTON 2321

25 March 1994

Dear Licensee

RE: NON RENEWAL OF LICENCE FOR THE KEEPING OF DANGEROUS GOODS

Our records indicate you previously held licence number 35/010938 for storage of dangerous goods at Public School, Ryans Lane, Gillieston Heights. This licence has expired.

If dangerous goods are still being kept at this site the licence will need to be renewed. **To renew the licence** to 1994/1995, please fully complete and return the enclosed application form. If extra depots need to be added to your licence, please include a plan stamped by an accredited consultant for these depots (list enclosed).

If the licence is not to be renewed, please provide the Chief Inspector of Dangerous Goods, WorkCover Authority with a signed statement giving the reason why the licence is no longer required *eg site sold, lease ended or storage removed.*

- Where the site has been sold or the lease ended, please inform the WorkCover Authority, of the date you sold/vacated the premises and whether you removed the dangerous goods before leaving. Where possible, please supply the new owner's name and address.

- If the depot has been removed from the site or is no longer used for storing dangerous goods, please advise the date the goods/depots were removed and by whom *see specific information overleaf for underground tanks.*

Thank you for your assistance.

Yours faithfully
Enoma de Silva

for Senior Licensing Clerk, Dangerous Goods
encs

Reference 35/010938

WORKCOVER AUTHORITY

SCIENTIFIC SERVICES BRANCH
-8 AUG 1992
DANGEROUS GOODS

29 JUL 1992

THE PRINCIPAL
PUBLIC SCH RYANS LANE
GILLIESTON 2321

WORKCOVER AUTHORITY
-6 AUG 1992

Site Public School, Ryans Lane, GILLIESTON HEIGHTS

Dear Sir/Madam,

RE: LICENCES FOR THE KEEPING OF DANGEROUS GOODS AT SCHOOLS IN HUNTER REGION

Licensing of government schools for keeping dangerous goods was previously the responsibility of the Public Works Department. This group have contacted us requesting that these licences be transferred to the School Education Department.

In response to this request, we rang the properties section of your Regional office on 19 June 1992. This section advised that licences for the Hunter region would by dealt with by the principals for the individual schools.

Attached is an application form to transfer the licence to your Department. Could you please:

a) check that the details we have on record *eg address, quantity stored* are still correct,

b) complete the form and change any incorrect details,

c) sign and date the form.

The completed forms should then be sent, before the 21 August 1992, to:

Chief Inspector of Dangerous Goods
WorkCover Authority
Locked Bag 10 P O
CLARENCE STREET NSW 2000

When the completed form is received the correct details will be entered on the computer and a licence issued.

Where the gas tank is no longer on the site, please advise the Chief Inspector of Dangerous Goods giving details of when the tank was removed and by whom.

Please contact Penny ☎ (02) 370 5192 or ☎ Lucy (02) 370 5191 if you have any enquiries *(our fax number is (02) 370 6105)*. Thank you for your assistance.

Yours faithfully

P. Wit

Penelope Withers
Licensing Clerk
for Chief Inspector of Dangerous Goods

Form DGI

WORKCOVER AUTHORITY
DANGEROUS GOODS ACT, 1975

Licence No. 35/010938

APPLICATION FOR LICENCE (or AMENDMENT or TRANSFER of LICENCE)*
FOR THE KEEPING OF DANGEROUS GOODS

(* Delete whichever is not required)

Name of Applicant in full (see Item 1 - Explanatory notes - page 4)	
Trading name or occupier's name (if any)	
Postal Address	Postcode
Address of the premises to be licensed. (Including Street No.)	PUBLIC SCH RYANS LANE GILLIESTON Postcode 2321
Nature of premises (See Item 2 - Explanatory notes - page 4)	PRIMARY SCHOOLS
Telephone number of applicant	STD Code Number Contact Person:

Particulars of type of all depots and maximum quantities of dangerous goods to be kept at any one time.

Depot number	Type of depot (See item 3 - Explanatory notes - page 4)	Storage capacity	Dangerous goods: Product being stored	C & C Office use only
1	ABOVEGROUND TANK	1 100L	FLAMMABLE GASES	
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Has site plan been approved by the Dangerous Goods Branch? Yes ~~No~~ If yes, no plans required. ~~If no, please attach site plan, or provide sketch plan overleaf which has been stamped by an accredited consultant.~~

Have premises previously been licensed? Yes ~~No~~ If, yes, state name of previous occupier and licence No. (if known) Public Works Department licence no. as abo

Name of oil company supplying flammable liquid and/or flammable gases (if applicable).

Signature of applicant..... Date .....

~~For external explosives magazine(s), please fill in page 3.~~

FOR OFFICE USE ONLY

CERTIFICATE OF INSPECTION

I, being an Inspector under the Dangerous Goods Act, 1975, do hereby certify that the premises described above do comply with the requirements of the Dangerous Goods Act, 1975, and the Dangerous Goods Regulation with regard to their situation and construction for the keeping of dangerous goods of the nature and in the quantity specified.

Signature of Inspector..... Date.....

FORM DG1

KEEPING LICENCE EXPLANATORY NOTES

1. Name of applicant in full: Full name(s) including given name(s) or holding company name (if any) must be supplied.
2. Nature of premises: State whether premises are a dwelling, service station, fuel storage depot, general store, farm, mine site, etc.
3. Type of depot: Describe depot as "aboveground tank", "underground tank", "magazine", "roofless package store", "roofed package store", "cylinder store" (or where not more than two LPG decanting cylinders of each of a capacity not exceeding 50kg are kept) "decanting cylinders". For safety cartridges describe as "in original packages".
4. If space is insufficient for depot particulars, attach a separate list, showing the type of each depot (as per 3 above), and indicating contents and capacities of each in litres, kilograms etc.

Licences are issued, for a specific site, annually and may NOT be altered and/or transferred to a new applicant without the approval of the Chief Inspector of Dangerous Goods.

Dangerous Goods are divided into classes and an explanation is shown hereunder. Certain dangerous goods may be kept without a licence, providing the quantity of the goods does not exceed the amount specified in the exemptions listed below.

EXPLANATION OF DANGEROUS GOODS AND THEIR CLASSES

1.1	Blasting explosives (including detonators).
1.4	Fireworks and/or safety cartridges.
2.1	Flammable gases (e.g. L.P.G. or acetylene).
2.2)	Poison cryogenic gases (e.g. ammonia, chlorine, liquid oxygen).
2.3)	
3.1)	Flammable Liquids (e.g. any or all of, petrol, kerosene, methylated spirits, solvents).
3.2)	
3.3	Combustible liquids (e.g. distillate, diesel fuel, heating oil).
4	Flammable solids (e.g. nitro cellulose).
5	Oxidising substances (e.g. pool chlorine ammonia nitrate).
6.1	(a) Poisons (e.g. sodium cyanide, pesticides); (b) Harmful substances (e.g. sodium flourosilicate, pesticides, lead acetate).
6.2	Infectious substances (e.g. bacterial cultures).
7	Radioactive substances (storage of Class 7 is NOT covered by the Dangerous Goods Act, 1975).
8	Corrosives (e.g. hydrochloric acid, sulphuric acid, sodium hydroxide and sodium hypochlorite).

EXEMPTIONS FROM LICENCE

1. *Acetylene:* Storage of 60 cu.m or less of acetylene per premises (i.e. up to and including 8 x "G" class cylinders, the most common size of acetylene cylinder).

2. *Distillate, Diesel Fuel, Heating Oil:* Storage of 50,000 litres or less per tank.

3. *Petrol:* Storage of 100 litres or less per premises.

4. *Kerosene:* Storage of 1,000 litres or less per premises, when stored aboveground.

5. *All dangerous goods of classes 6 and 8:* any quantity.

Please contact the WorkCover Authority, Chemical Safety Unit, for further exemptions.

OTHER WORKCOVER AUTHORITY OFFICES - Advice on Dangerous Goods* can be also be obtained from the following offices.

GOSFORD	(043) 24 3384	BANKSTOWN	(02) 707 2500
NEWCASTLE	(049) 26 5400	CITY	(02) 370 5034
ORANGE	(063) 61 7070	HURSTVILLE	(02) 580 0366
PORT MACQUARIE	(065) 84 1188	PARRAMATTA	(02) 895 8600
WAGGA WAGGA	(069) 23 0692	ST LEONARDS	(02) 906 2055
WOLLONGONG	(0420 26 9033		

*** ALL LICENSING ENQUIRIES to Chemical Safety Unit: Tel: (02) 370 5191 or (02) 370 5192**

The completed and signed form is to be forwarded to the Chief Inspector of Dangerous Goods, Locked Bag 10, P.O. CLARENCE STREET NSW 2000. Licences will be issued within four (4) weeks of receipt of completed form within the Authority.

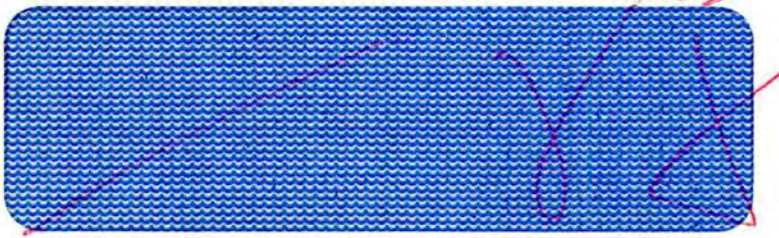
FAILURE TO ANSWER ALL QUESTIONS WILL RESULT IN A DELAY IN THE ISSUE OF YOUR LICENCE.

I.O. 1542

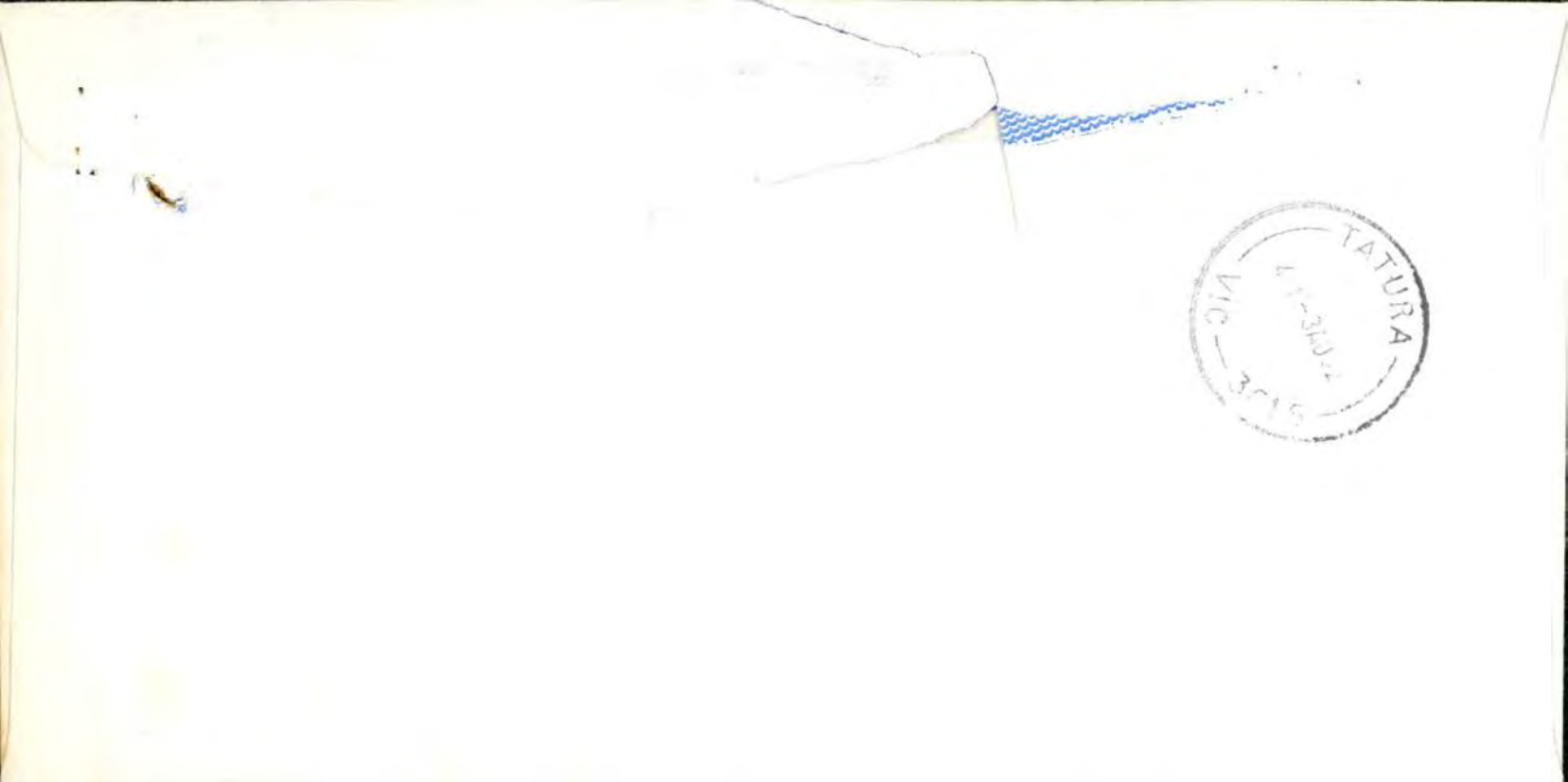
WorkCover Authority
Locked Bag 10 Clarence Street Sydney 2000

SCIENTIFIC SERVICES BRANCH
- 8 AUG 1992
DANGEROUS GOODS

POSTAGE PAID
AUSTRALIA



Glenston Heights



INSPECTION RECORD

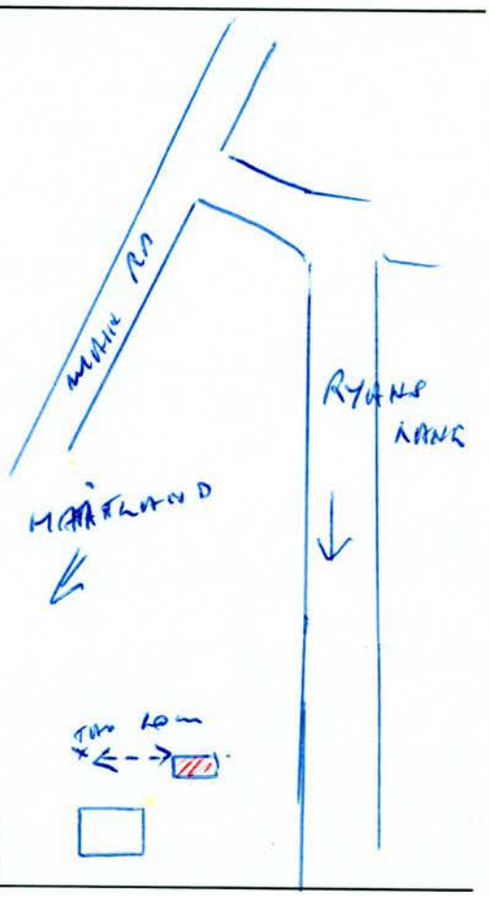
Licensee: Dept of Public Works

Licence No. _____

Address: RYANS LANE GILLIESTON

Storage licensed: 1136 WL

Sketch of Premises (Dimensions of depot and distance of same from adjoining "protected works" to be shown).



Inspected	Initials	Requisitions made or state of depot
11.3.26	HG	Sat

M 5388 Government Printer

FORM B.

DEPARTMENT OF LABOUR AND INDUSTRY

INFLAMMABLE LIQUID ACT, 1915

LICENCE No. 10938

APPLICATION FOR: REGISTRATION OF PREMISES / STORE LICENCE / AMENDMENT TO REGISTRATION OR LICENCE } FOR THE KEEPING OF INFLAMMABLE LIQUID AND/OR DANGEROUS GOODS. 8

Name of Occupier: Dept of Public Work
(Surname) (First Names)

Trading Name (if any): GILLIESTON PUBLIC SCHOOL

Postal Address: Postcode

Address of the premises in which the depot or depots are situated: RYANS LANE GILLIESTON Postcode

Occupation: Engineering Branch Commonwealth Bldg Phillip St Sydney

Nature of Premises: School buildings

Particulars of construction of depots and maximum quantities of inflammable liquid and/or dangerous goods to be kept at any one time.

PLEASE SKETCH SITE ON BACK OR ATTACH PLAN

Depot No.	Construction of depots *			Inflammable Liquid		Dangerous Goods						
	Walls	Roof	Floor	Mineral spirit litres	Mineral oil litres	Class 1 litres	Class 2 litres	Class 3 kg	Class 4 m^3	Class 5A# litres	Class 5B# litres	Class 9 litres
1	Aboveground tanks									1136		
2												
3												
4												
5												
6												
7												
8												
9												
10												
TOTAL												

PUBLIC REVENUE A/c
19.3.76 $ NO FEE

* If kept in tanks describe depots as underground or aboveground tanks.

Insert water capacity of tanks or cylinders.

(Date) Receipt No. 5202

Name of Company supplying inflammable liquid _____

Have premises previously been licensed? _____

If known, state name of previous occupier _____

Signature of applicant [signature] Date _____

CERTIFICATE OF INSPECTION

I, GALVIN K GILLIES being an Inspector under the Inflammable Liquid Act, 1915, do hereby certify that the premises or store described above does comply with the requirements of that Act and regulations with regard to its situation and construction for the keeping of inflammable liquid and/or dangerous goods in quantity and nature specified.

Signature of Inspector [signature]

Date 11 3. 76

P.T.O.

Make rough sketch of ground layout of premises showing position of depot or depots and adjacent buildings also distances separating depots and buildings. If space insufficient, attach separate plan.

EXPLANATORY NOTES

NAME IN FULL OF OCCUPIER/S – Full name(s) of occupier(s) must be given. Trading name (if any) should also be shown.

NATURE OF PREMISES – State whether premises comprise of dwelling, service station, depot, etc.

CONSTRUCTION OF DEPOT – If storage is in an aboveground depot indicate the material of which the depot is constructed, e.g., brick, steel, concrete, and then the amount of inflammable liquid or dangerous goods and the type being stored, e.g., mineral spirit, kerosene, acetone, etc.

If storage is within underground or aboveground tanks, indicate the quantities and type of liquid or goods being stored in each tank. Also the capacity of each individual tank. Attach separate list, if space insufficient.

The completed form should be forwarded to:

The Chief Inspector of Inflammable Liquids,
P.O. Box R.216,
Royal Exchange 2000.

M 3559 D. West, Government Printer

Government Records Repository
F010066936
35/010938
B1013468

From: Licensing
To: Lotsearch Support
Subject: SafeWork NSW: 00786264 –Site Search application – Result found [ref:_00D281hl6J._500Mn1LvxC:ref]
Date: Tuesday, 31 January 2023 1:35:29 PM

Security Classification: Sensitive Personal
Please do not amend the subject line of this email

Dear Emily

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 18/12/2022 for the following site: 100 Ryans Rd Gillieston 2321.

Please find attached copies of the documents that SafeWork NSW holds on record number 35/010938 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: 00786264

- Email: licensing@safework.nsw.gov.au
- Phone: 13 10 50

Kind regards

May Neill
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.

35 010938 - Gillieston Heights Gillieston Rd.pdf
Site Search - Gileston Rd, Gilleston - TaxInvoice.pdf

ref:_00D281hl6J._500Mn1LvxC:ref

Appendix G ANALYTICAL RESULTS

							TPH					CRC Care TPH Fractions						
							C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C6-C10	C10-C16	C16-C34	C34-C40	C10 - C40 (Sum of total)	F1: C6-C10 less BTEX	F2: >C10-C16 less Naphthalene
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							20	20	45	45	110	25	25	90	120	210	25	25
NEPM 2013 HIL, Residential A																		
CRCCARE 2011 Soil HSL for Direct Contact, HSL-A Residential																		
0-1m												4400	3300	4500	6300			
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																		
0-1m																	45	110
1-2m																	70	240
2-4m																	110	440
>4m																	200	NL
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																		
0-2m																		
NEPM 2013 ESL UR/POS, Coarse Soil																		
0-2m								120					120	300	2800		180	
Site_ID	**Field_ID**	**Location_Code**	**Sample_Depth_Range**	**Sampled_Date**	**Sample_Depth_Avg**													
Gillieston PS	BH01_0.2	BH01	0.2	20/12/2022	0.2	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH01_0.5	BH01	0.5	19/12/2022	0.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH03_0.3	BH03	0.3	19/12/2022	0.3	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH03_0.8-1.0	BH03	0.8-1	19/12/2022	0.9	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH03_1.3-1.5	BH03	1.3-1.5	19/12/2022	1.4	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH04_0.2	BH04	0.2	19/12/2022	0.2	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH05_1.0	BH05	1	19/12/2022	1	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH05_1.5	BH05	1.5	19/12/2022	1.5	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH06_0.2	BH06	0.2	19/12/2022	0.2	<20	<20	<45	82	<110	<25	<25	110	<120	<210	<25	<25	
Gillieston PS	BH06_0.5	BH06	0.5	19/12/2022	0.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH07_0.5	BH07	0.5	19/12/2022	0.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH07_1.5	BH07	1.5	19/12/2022	1.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH08_0.2	BH08	0.2	20/12/2022	0.2	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH08_0.5	BH08	0.5	20/12/2022	0.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH09_0.1	BH09	0.1	21/12/2022	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH11_0.1	BH11	0.1	21/12/2022	0.1	<20	<20	94	110	210	<25	<25	180	<120	<210	<25	<25	
Gillieston PS	BH12_0.1	BH12	0.1	21/12/2022	0.1	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH14_0.2	BH14	0.2	20/12/2022	0.2	<20	<20	130	130	260	<25	26	230	<120	250	<25	26	
Gillieston PS	BH14_1.3	BH14	1.3	20/12/2022	1.3	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH14_1.5	BH14	1.5	20/12/2022	1.5	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH15_0.2	BH15	0.2	20/12/2022	0.2	<20	44	270	150	470	<25	63	380	<120	440	<25	63	
Gillieston PS	QA400	BH15	0.2	20/12/2022	0.2	<20	28	240	130	400	<25	41	330	<120	370	<25	41	
Gillieston PS	QC400	BH15	0.2	20/12/2022	0.2	<20	46	350	230	626	<20	75	490	130	695	<20	75	
Gillieston PS	BH15_0.5	BH15	0.5	20/12/2022	0.5	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH15_1.4	BH15	1.4	20/12/2022	1.4	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH16_0.2	BH16	0.2	21/12/2022	0.2	<20	<20	<45	59	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH17_0.2	BH17	0.2	21/12/2022	0.2	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH17_0.9	BH17	0.9	21/12/2022	0.9	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH18_0.2	BH18	0.2	21/12/2022	0.2	<20	<20	86	65	150	<25	<25	130	<120	<210	<25	<25	
Gillieston PS	BH19_0.2	BH19	0.2	21/12/2022	0.2	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH19_0.5	BH19	0.5	21/12/2022	0.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH20_0.2	BH20	0.2	21/12/2022	0.2	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH20_1.5	BH20	1.5	21/12/2022	1.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH21_0.8	BH21	0.8	21/12/2022	0.8	<20	<20	<45	53	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH22_0.1	BH22	0.1	21/12/2022	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	BH23_0.1	BH23	0.1	21/12/2022	0.1	<20	<20	60	71	130	<25	<25	120	<120	<210	<25	<25	
Gillieston PS	BH24_0.2	BH24	0.2	21/12/2022	0.2	<20	<20	<45	54	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH25_0.2	BH25	0.2	20/12/2022	0.2	<20	<20	55	60	110	<25	<25	100	<120	<210	<25	<25	
Gillieston PS	BH26_0.2	BH26	0.2	19/12/2022	0.2	<20	<20	<45	53	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH27_0.1-0.2	BH27	0.1-0.2	19/12/2022	0.15	<20	<20	<45	62	<110	<25	<25	93	<120	<210	<25	<25	
Gillieston PS	BH27_0.5	BH27	0.5	19/12/2022	0.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	QA200	BH27	0.5	19/12/2022	0.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	QC200	BH27	0.5	19/12/2022	0.5	<20	<20	<50	<50	<50	<20	<50	<100	<100	<100	<20	<50	
Gillieston PS	BH27_1.5	BH27	1.5	19/12/2022	1.5	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH28_0.2	BH28	0.2	19/12/2022	0.2	<20	<20	<45	52	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	BH28_1.0	BH28	1	19/12/2022	1	<20	<20	<45	<45	<110	<25	<25	<90	<120	<210	<25	<25	
Gillieston PS	HA101-0.1	HA101	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA102-0.1	HA102	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA102_0.3	HA102	0.3	25/01/2023	0.3	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA103-0.1	HA103	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA103_0.3	HA103	0.3	25/01/2023	0.3	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA104-0.1	HA104	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA104_0.3	HA104	0.3	25/01/2023	0.3	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA105-0.1	HA105	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA106-0.1	HA106	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	QA100	HA106	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	QC100	HA106	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA107-0.1	HA107	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA108-0.1	HA108	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA108_0.3	HA108	0.3	25/01/2023	0.3	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA109-0.1	HA109	0.1	25/01/2023	0.1	<20	39	160	74	270	<25	50	210	<120	260	<25	-	
Gillieston PS	HA109_0.3	HA109	0.3	25/01/2023	0.3	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA110-0.1	HA110	0.1	25/01/2023	0.1	<20	<20	64	47	110	<25	<25	97	<120	<210	<25	-	
Gillieston PS	HA111-0.1	HA111	0.1	25/01/2023	0.1	<20	29	150	93	270	<25	39	210	<120	250	<25	-	
Gillieston PS	HA111_0.3	HA111	0.3	25/01/2023	0.3	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA112-0.1	HA112	0.1	25/01/2023	0.1	<20	25	110	71	210	<25	34	160	<120	<210	<25	-	
Gillieston PS	QA200	HA112	0.1	25/01/2023	0.1	<20	27	150	73	250	<25	38	200	<120	240	<25	-	
Gillieston PS	QC200	HA112	0.1	25/01/2023	0.1	<20	<20	99	100	199	<20	<50	170	<100	170	<20	<50	
Gillieston PS	HA112_0.3	HA112	0.3	25/01/2023	0.3	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA113-0.1	HA113	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA114-0.1	HA114	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA115-0.1	HA115	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA116-0.1	HA116	0.1	25/01/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA116_0.3	HA116	0.3	25/01/2023	0.3	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA201_0.1	HA201	0.1	3/02/2023	0.1	<20	<20	61	99	160	<25	<25	140	<120	<210	<25	<25	
Gillieston PS	DUP1	HA202	0.1	3/02/2023	0.1	<20	<20	82	100	180	<25	<25	150	<120	<210	<25	<25	
Gillieston PS	HA202_0.1	HA202	0.1	3/02/2023	0.1	<20	<20	59	82	140	<25	<25	120	<120	<210	<25	<25	
Gillieston PS	HA203_0.1	HA203	0.1	3/02/2023	0.1	<20	<20	71	87	160	<25	<25	140	<120	<210	<25	<25	
Gillieston PS	HA204_0.1	HA204	0.1	3/02/2023	0.1	<20	<20	76	100	180	<25	<25	150	<120	<210	<25	<25	
Gillieston PS	HA301_0.1	HA301	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA302_0.1	HA302	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA303_0.1	HA303	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA304_0.1	HA304	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA305_0.1	HA305	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA306_0.1	HA306	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA307_0.1	HA307	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA308_0.1	HA308	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA309_0.1	HA309	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA310_0.1	HA310	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA311_0.1	HA311	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	QA111	HA311	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA312_0.1	HA312	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA313_0.1	HA313	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA314_0.1	HA314	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA315_0.1	HA315	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA316_0.1	HA316	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA317_0.1	HA317	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA318_0.1	HA318	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA319_0.1	HA319	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA320_0.1	HA320	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	QA112	HA320	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA321_0.1	HA321	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA322_0.1	HA322	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA323_0.1	HA323	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA324_0.1	HA324	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA325_0.1	HA325	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	QA113	HA325	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA326_0.1	HA326	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA327_0.1	HA327	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA328_0.1	HA328	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA329_0.1	HA329	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA330_0.1	HA330	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA331_0.1	HA331	0.1	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA331_0.2	HA332	0.2	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Gillieston PS	HA331_0.2_PACM	HA333	0.2	10/02/2023	0.1	-	-	-	-	-	-	-	-	-	-	-	-	
Statistical Summary																		
Number of Results						45	45	45	45	45	45	45	45	45	45	45	40	
Number of Detects						0	7	19	26	19	0	8	21	1	8	0	4	
Minimum Concentration						<20	<20	<45	<45	<50	<20	<25	<90	<100	<100	<20	<25	
Minimum Detect						ND	25	55	47	110	ND	26	93	130	170	ND	26	
Maximum Concentration						<20	46	350	230	626	<25	75	490	130	695	<25	75	
Maximum Detect						ND	46	350	230	626	ND	75	490	130	695	ND	75	
Average Concentration						10	14	66	60	131	12	19	111	61	145	12	17	
Median Concentration						10	10	22.5	53	55	12.5	12.5	45	60	105	12.5	12.5	
Standard Deviation						0	9.4	73	44	125	0.63	14	98	11	112	0.63	13	
Number of Guideline Exceedances						0	0	0	0	0	6	0	3	0	0	0	0	
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	6	0	3	0	0	0	0	

			BTEX								Metals													
			Naphthalene (VOC)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	Arsenic	Cadmium	Calcium	Chromium (III+VI)	Copper	Iron	Lead	Magnesium	Mercury	Nickel	Potassium	Sodium	Zinc	Asbestos Reported Result
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Comment
EQL			0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.6	1	0.3	2	0.5	0.5	50	1	2	0.05	0.5	2	2	2	
NEPM 2013 HIL, Residential A											100	20			6000		300		40	400			7400	
CRCCARE 2011 Soil HSL for Direct Contact, HSL-A Residential																								
0-1m				100	14000	4500			12000															
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																								
0-1m				0.5	160	55			40															
1-2m				0.5	220	NL			60															
2-4m				0.5	310	NL			95															
>4m				0.5	540	NL			170															
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																								
0-2m											100			320	50		1100			8			220	
NEPM 2013 ESL UR/POS, Coarse Soil																								
0-2m				50	85	70			105															
Site_ID	Field_ID	Location_Code																						
Gillieston PS	BH01_0.2	BH01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH01_0.5	BH01	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	7	<0.3	130	10	<0.5	24,000	8	74	<0.05	1.1	140	15	3.2	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH03_0.3	BH03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	3	<0.3	-	6	0.5	-	6	-	<0.05	1.5	-	-	3.2	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH03_0.8-1.0	BH03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_1.3-1.5	BH03	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	4	<0.3	-	9.2	0.9	-	6	-	<0.05	0.8	-	-	5.5	-
Gillieston PS	BH04_0.2	BH04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH05_1.0	BH05	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	10	<0.3	-	21	<0.5	-	10	-	<0.05	0.9	-	-	7.9	-
Gillieston PS	BH05_1.5	BH05	-	-	-	-	-	-	-	-	-	-	270	-	-	29,000	-	480	-	-	240	55	-	-
Gillieston PS	BH06_0.2	BH06	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	6	<0.3	-	7.3	4.5	-	16	-	<0.05	2.5	-	-	26	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH06_0.5	BH06	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	10	<0.3	-	15	1.6	-	10	-	<0.05	2.5	-	-	11	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH07_0.5	BH07	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	11	<0.3	-	16	<0.5	-	7	-	<0.05	1.6	-	-	7.9	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH07_1.5	BH07	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	5	<0.3	-	17	1	-	6	-	<0.05	0.6	-	-	8.2	-
Gillieston PS	BH08_0.2	BH08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH08_0.5	BH08	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	8	<0.3	-	21	0.9	-	10	-	<0.05	1.6	-	-	8.6	-
Gillieston PS	BH09_0.1	BH09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH11_0.1	BH11	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	9	<0.3	-	17	5.4	-	26	-	<0.05	4.8	-	-	71	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH12_0.1	BH12	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	5	<0.3	-	4.3	1.3	-	16	-	<0.05	1	-	-	15	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH14_0.2	BH14	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	9	<0.3	-	14	12	-	380	-	0.06	7.7	-	-	230	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH14_1.3	BH14	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	8	<0.3	-	7.2	0.9	-	17	-	0.06	<0.5	-	-	9.2	-
Gillieston PS	BH14_1.5	BH14	-	-	-	-	-	-	-	-	-	-	47	-	-	32,000	-	300	-	-	140	120	-	-
Gillieston PS	BH15_0.2	BH15	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	5	0.3	-	11	19	-	380	-	0.06	11	-	-	260	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	QA400	BH15	0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	7	0.4	-	14	16	-	490	-	0.05	11	-	-	290	
Gillieston PS	QC400	BH15	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	6.1	<0.4	-	13	19	-	320	-	<0.1	10	-	-	250	
Gillieston PS	BH15_0.5	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH15_1.4	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH16_0.2	BH16	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	5	<0.3	-	11	6.3	-	18	-	<0.05	5.3	-	-	67	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH17_0.2	BH17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH17_0.9	BH17	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	6	<0.3	33	22	<0.5	6200	4	310	<0.05	<0.5	130	140	2.3	-
Gillieston PS	BH18_0.2	BH18	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	6	<0.3	-	12	3.8	-	42	-	<0.05	2.4	-	-	39	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH19_0.2	BH19	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	6	<0.3	-	10	6	-	15	-	0.06	5.9	-	-	53	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH19_0.5	BH19	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	12	<0.3	-	19	2.2	-	10	-	<0.05	7	-	-	39	-
Gillieston PS	BH20_0.2	BH20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH20_1.5	BH20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	8	<0.3	-	13	<0.5	-	6	-	<0.05	<0.5	-	-	2.8	-
Gillieston PS	BH21_0.8	BH21	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	9	<0.3	-	25	<0.5	-	5	-	<0.05	0.9	-	-	7.9	-
Gillieston PS	BH22_0.1	BH22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH23_0.1	BH23	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	5	<0.3	-	10	1.7	-	10	-	<0.05	2.1	-	-	10	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH24_0.2	BH24	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	4	<0.3	-	6.9	3.1	-	20	-	<0.05	1.8	-	-	19	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH25_0.2	BH25	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	6	<0.3	-	13	2.6	-	9	-	<0.05	2.4	-	-	15	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH26_0.2	BH26	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	5	<0.3	-	5.8	2.3	-	9	-	<0.05	1.8	-	-	14	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH27_0.1-0.2	BH27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	2	<0.3	-	2.8	2.5	-	7	-	<0.05	1.2	-	-	18	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH27_0.5	BH27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	1	<0.3	-	4.1	2.2	-	10	-	<0.05	1.4	-	-	5.2	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	QA200	BH27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	1	<0.3	-	4.2	2	-	11	-	<0.05	1.5	-	-	6	
Gillieston PS	QC200	BH27	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<2	<0.4	-	<5	<5	-	11	-	<0.1	<5	-	-	<5	
Gillieston PS	BH27_1.5	BH27	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	4	<0.3	-	8.1	<0.5	-	6	-	<0.05	2	-	-	2	
Gillieston PS	BH28_0.2	BH28	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	3	<0.3	-	3.8	2.3	-	9	-	<0.05	1.4	-	-	14	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	BH28_1.0	BH28	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	10	<0.3	-	4.6	<0.5	-	6	-	<0.05	<0.5	-	-	2.3	
Gillieston PS	HA101-0.1	HA101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	44	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA102-0.1	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	970	-	-	-	-	-	870	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA102_0.3	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	910	-	-	-	-	-	880	
Gillieston PS	HA103-0.1	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2500	-	-	-	-	-	1900	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA103_0.3	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1200	-	-	-	-	-	1000	
Gillieston PS	HA104-0.1	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	390	-	-	-	-	-	910	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA104_0.3	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	460	-	-	-	-	-	960	
Gillieston PS	HA105-0.1	HA105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	140	-	-	-	-	-	180	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA106-0.1	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190	-	-	-	-	-	170	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	QA100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170	-	-	-	-	-	190	
Gillieston PS	QC100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	280	-	-	-	-	-	210	
Gillieston PS	HA107-0.1	HA107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	160	-	-	-	-	-	180	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	HA108-0.1	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	310	-	-	-	-	-	220	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA108_0.3	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	480	-	-	-	-	-	370	
Gillieston PS	HA109-0.1	HA109	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	310	-	-	-	-	-	200	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA109_0.3	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	350	-	-	-	-	-	-	
Gillieston PS	HA110-0.1	HA110	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	140	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA111-0.1	HA111	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	530	-	-	-	-	-	310	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	HA111_0.3	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	360	-	-	-	-	-	310	
Gillieston PS	HA112-0.1	HA112	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	300	-	-	-	-	-	210	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	QA200	HA112	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	290	-	-	-	-	-	190	
Gillieston PS	QC200	HA112	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	420	-	-	-	-	-	240	
Gillieston PS	HA112_0.3	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	350	-	-	-	-	-	130	
Gillieston PS	HA113-0.1	HA113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44	-	-	-	-	-	190	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA114-0.1	HA114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	82	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	HA115-0.1	HA115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	58	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w). *Organic fibre detected.
Gillieston PS	HA116-0.1	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	-	-	-	-	-	430	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	HA116_0.3	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	
Gillieston PS	HA201_0.1	HA201	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	-	-	-	-	-	-	98	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	DUP1	HA202	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	-	-	-	-	-	-	19	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	HA202_0.1	HA202	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	-	-	-	-	-	-	22	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	HA203_0.1	HA203	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	-	-	-	-	-	-	15	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	HA204_0.1	HA204	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	-	-	-	-	-	-	31	-	-	-	-	-	-	No Asbestos Found at RL of 0.1g/kg (<0 01%w/w).
Gillieston PS	HA301_0.1	HA301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	90	
Gillieston PS	HA302_0.1	HA302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	22	
Gillieston PS	HA303_0.1	HA303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	15	
Gillieston PS	HA304_0.1	HA304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	12	
Gillieston PS	HA305_0.1	HA305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	-	-	-	-	-	32	
Gillieston PS	HA306_0.1	HA306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	-	-	-	-	-	77	
Gillieston PS	HA307_0.1	HA307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	-	-	-	-	-	72	
Gillieston PS	HA308_0.1	HA308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	-	-	-	-	-	63	
Gillieston PS	HA309_0.1	HA309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	340	-	-	-	-	-	280	
Gillieston PS	HA310_0.1	HA310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190	-	-	-	-	-	230	
Gillieston PS	HA311_0.1	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	460	-	-	-	-	-	200	
Gillieston PS	QA111	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	460	-	-	-	-	-	200	
Gillieston PS	HA312_0.1	HA312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	-	-	-	-	-	100	
Gillieston PS	HA313_0.1	HA313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-	-	-	95	
Gillieston PS	HA314_0.1	HA314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96	-	-	-	-	-	160	
Gillieston PS	HA315_0.1	HA315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81	-	-	-	-	-	160	
Gillieston PS	HA316_0.1	HA316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-	-	-	-	-	140	
Gillieston PS	HA317_0.1	HA317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270	-	-	-	-	-	290	
Gillieston PS	HA318_0.1	HA318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	-	-	-	-	-	69	
Gillieston PS	HA319_0.1	HA319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	-	-	-	-	-	230	
Gillieston PS	HA320_0.1	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	240	-	-	-	-	-	170	
Gillieston PS	QA112	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	260	-	-	-	-	-	180	
Gillieston PS	HA321_0.1	HA321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	280	-	-	-	-	-	550	
Gillieston PS	HA322_0.1	HA322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75	-	-	-	-	-	92	
Gillieston PS	HA323_0.1	HA323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94	-	-	-	-	-	130	
Gillieston PS	HA324_0.1	HA324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	-	-	-	-	-	84	
Gillieston PS	HA325_0.1	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	120	-	-	-	-	-	160	
Gillieston PS	QA113	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	-	-	-	-	-	160	
Gillieston PS	HA326_0.1	HA326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	-	-	-	-	-	77	
Gillieston PS	HA327_0.1	HA327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	42	
Gillieston PS	HA328_0.1	HA328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	16	
Gillieston PS	HA329_0.1	HA329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	-	-	140	
Gillieston PS	HA330_0.1	HA330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	-	-	-	-	-	220	
Gillieston PS	HA331_0.1	HA331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1600	-	-	-	-	-	830	
Gillieston PS	HA331_0.2	HA332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Chrysotile Asbestos Found at RL of 0.1g/kg (>0.01%w/w). Organic Fibres Detected
Gillieston PS	HA331_0.2_PACM	HA333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Chrysotile Asbestos Detected
Statistical Summary																								
Number of Results			40	44	39	39	39	39	39	37	34	34	4	34	34	4	100	4	34	34	4	4	95	50
Number of Detects			1	0	0	0	0	0	0	0	33	2	4	33	25	4	100	4	5	29	4	4	94	2
Minimum Concentration			<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	1	<0.3	33	2.8	<0.5	6200	4	74	<0.05	<0.5	130	15	2	-
Minimum Detect			0.1	ND	ND	ND	ND	ND	ND	ND	1	0.3	33	2.8	0.5	6200	4	74	0.05	0.6	130	15	2	-
Maximum Concentration			<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	12	0.4	270	25	19	32000	2500	480	<0.1	11	240	140	1900	0.01%w/w
Maximum Detect			0.1	ND	ND	ND	ND	ND	ND	ND	12	0.4	270	25	19	32000	2500	480	0.06	11	240	140	1900	-
Average Concentration			0.066	0.05	0.05	0.05	0.1	0.05	0.15	0.3	6.1	0.16	120	11	3.7	22800	193	291	0.031	2.9	163	83	186	-
Median Concentration			0.05	0.05	0.05	0.05	0.1	0.05	0.15	0.3	6	0.15	88.5	10.5	2.1	26500	61.5	305	0.025	1.7	140	87.5	95	-
Standard Deviation			0.054	0	0	0	0	0	0	0	2.9	0.05	109	6	5.1	11548	348	167	0.013	3.1	52	58	284	-
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	56	2
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	56	2

			PAH																					
			Benzo(a)pyrene TEQ (half LOR)_	Benzo(a)pyrene TEQ (upper bound) *	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	BaP TEQ (zero)	Benzo(a)pyrene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8	0.1	0.1
NEPM 2013 HIL, Residential A			3																			300		
CRCCARE 2011 Soil HSL for Direct Contact, HSL-A Residential																								
0-1m																					1400			
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																								
0-1m																					3			
1-2m																					NL			
2-4m																					NL			
>4m																					NL			
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																								
0-2m																					170			
NEPM 2013 ESL UR/POS, Coarse Soil																								
0-2m												0.7												
Site_ID	**Field_ID**	**Location_Code**																						
Gillieston PS	BH01_0.2	BH01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH01_0.5	BH01	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH03_0.3	BH03	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH03_0.8-1.0	BH03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_1.3-1.5	BH03	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH04_0.2	BH04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.0	BH05	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH05_1.5	BH05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH06_0.2	BH06	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH06_0.5	BH06	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH07_0.5	BH07	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH07_1.5	BH07	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH08_0.2	BH08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.5	BH08	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH09_0.1	BH09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH11_0.1	BH11	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH12_0.1	BH12	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH14_0.2	BH14	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	-	0.1	0.2	<0.1	0.1	0.2	<0.1	0.2	<0.1	0.1	<0.1	1.5	0.1	0.2
Gillieston PS	BH14_1.3	BH14	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH14_1.5	BH14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_0.2	BH15	-	-	0.5	0.4	<0.1	<0.1	0.1	0.5	-	0.6	0.7	0.2	0.5	0.5	0.1	0.7	<0.1	0.5	0.2	6.9	0.8	0.7
Gillieston PS	QA400	BH15	-	-	0.5	0.2	<0.1	<0.1	0.1	0.4	-	0.4	0.5	0.2	0.2	0.4	<0.1	0.7	<0.1	0.2	0.1	5.3	0.8	0.6
Gillieston PS	QC400	BH15	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	<0.5	<0.5	<0.5	1.2	<0.5	<0.5
Gillieston PS	BH15_0.5	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_1.4	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH16_0.2	BH16	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.8	<0.1	0.1
Gillieston PS	BH17_0.2	BH17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH17_0.9	BH17	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH18_0.2	BH18	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH19_0.2	BH19	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH19_0.5	BH19	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH20_0.2	BH20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_1.5	BH20	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH21_0.8	BH21	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH22_0.1	BH22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH23_0.1	BH23	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH24_0.2	BH24	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH25_0.2	BH25	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH26_0.2	BH26	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH27_0.1-0.2	BH27	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH27_0.5	BH27	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.8	<0.1	0.1
Gillieston PS	QA200	BH27	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	QC200	BH27	0.6	1.2	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Gillieston PS	BH27_1.5	BH27	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH28_0.2	BH28	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	BH28_1.0	BH28	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	HA101-0.1	HA101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102-0.1	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102_0.3	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103-0.1	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103_0.3	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104-0.1	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104_0.3	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA105-0.1	HA105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA106-0.1	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA107-0.1	HA107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108-0.1	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108_0.3	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109-0.1	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109_0.3	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA110-0.1	HA110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111-0.1	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111_0.3	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112-0.1	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA200	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC200	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112_0.3	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA113-0.1	HA113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA114-0.1	HA114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA115-0.1	HA115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116-0.1	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116_0.3	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA201_0.1	HA201	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	DUP1	HA202	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	HA202_0.1	HA202	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	HA203_0.1	HA203	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.8	<0.1	0.2
Gillieston PS	HA204_0.1	HA204	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Gillieston PS	HA301_0.1	HA301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA302_0.1	HA302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA303_0.1	HA303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA304_0.1	HA304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA305_0.1	HA305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA306_0.1	HA306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA307_0.1	HA307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA308_0.1	HA308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA309_0.1	HA309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA310_0.1	HA310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA311_0.1	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA111	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA312_0.1	HA312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA313_0.1	HA313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA314_0.1	HA314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA315_0.1	HA315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA316_0.1	HA316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA317_0.1	HA317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA318_0.1	HA318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA319_0.1	HA319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA320_0.1	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA112	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA321_0.1	HA321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA322_0.1	HA322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA323_0.1	HA323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA324_0.1	HA324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA325_0.1	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA113	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA326_0.1	HA326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA327_0.1	HA327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA328_0.1	HA328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA329_0.1	HA329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA330_0.1	HA330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.1	HA331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2	HA332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2_PACM	HA333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																								
Number of Results			2	2	37	37	39	39	39	39	2	39	39	39	39	39	39	39	39	39	39	39	39	39
Number of Detects			2	2	2	2	0	0	2	3	0	3	4	2	3	4	1	9	0	3	2	4	3	6
Minimum Concentration			0.6	1.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Minimum Detect			0.6	1.2	0.5	0.2	ND	ND	0.1	0.2	ND	0.1	0.1	0.2	0.1	0.2	0.1	0.1	ND	0.1	0.1	1.2	0.1	0.1
Maximum Concentration			0.6	1.2	0.5	0.4	<0.5	<0.5	<0.5	0.5	<0.5	0.6	0.7	<0.5	0.5	0.6	<0.5	0.7	<0.5	0.5	<0.5	6.9	0.8	0.7
Maximum Detect			0.6	1.2	0.5	0.4	ND	ND	0.1	0.5	ND	0.6	0.7	0.2	0.5	0.6	0.1	0.7	ND	0.5	0.2	6.9	0.8	0.7
Average Concentration					0.074	0.064	0.06	0.06	0.063	0.085		0.085	0.094	0.068	0.077	0.094	0.062	0.12	0.06	0.077	0.065	0.74	0.1	0.1
Median Concentration			0.6	1.2	0.05	0.05	0.05	0.05	0.05	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.4	0.05	0.05
Standard Deviation					0.1	0.062	0.045	0.045	0.045	0.1		0.11	0.13	0.054	0.086	0.13	0.045	0.17	0.045	0.086	0.05	1.3	0.17	0.14
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

			Organochlorine Pesticides																																
			Vic EPA IWRG 621 Other OCP (Total)*	Vic EPA IWRG 621 OCP (Total)*	2,4-DDT	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	gamma-Chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	o,p-DDD	o,p'-DDE	Toxaphene	trans-Nonachlor
			MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	1	0.1	0.1	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.05	0.2	0.2	0.2	0.1	0.2	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, Residential A									6		50						240					10				6		10	300			20	
CRCCARE 2011 Soil HSL for Direct Contact, HSL-A Residential																																			
0-1m																																			
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																																			
0-1m																																			
1-2m																																			
2-4m																																			
>4m																																			
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																																			
0-2m																180																			
NEPM 2013 ESL UR/POS, Coarse Soil																																			
0-2m																																			
Site_ID	**Field_ID**	**Location_Code**																																	
Gillieston PS	BH01_0.2	BH01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH01_0.5	BH01	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH03_0.3	BH03	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH03_0.8-1.0	BH03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_1.3-1.5	BH03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH04_0.2	BH04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.0	BH05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.5	BH05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH06_0.2	BH06	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH06_0.5	BH06	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH07_0.5	BH07	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH07_1.5	BH07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.2	BH08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.5	BH08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH09_0.1	BH09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH11_0.1	BH11	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH12_0.1	BH12	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH14_0.2	BH14	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH14_1.3	BH14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_1.5	BH14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_0.2	BH15	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.6	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	QA400	BH15	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.7	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	QC400	BH15	<1	<1	-	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<10	-
Gillieston PS	BH15_0.5	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_1.4	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH16_0.2	BH16	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH17_0.2	BH17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH17_0.9	BH17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH18_0.2	BH18	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH19_0.2	BH19	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH19_0.5	BH19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_0.2	BH20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_1.5	BH20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH21_0.8	BH21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH22_0.1	BH22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH23_0.1	BH23	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH24_0.2	BH24	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH25_0.2	BH25	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH26_0.2	BH26	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH27_0.1-0.2	BH27	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH27_0.5	BH27	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	QA200	BH27	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	QC200	BH27	<0.1	<0.1	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.5	-
Gillieston PS	BH27_1.5	BH27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH28_0.2	BH28	-	<1	<0.1	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Gillieston PS	BH28_1.0	BH28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA101-0.1	HA101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102-0.1	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102_0.3	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103-0.1	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103_0.3	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104-0.1	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104_0.3	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA105-0.1	HA105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA106-0.1	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA107-0.1	HA107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108-0.1	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108_0.3	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109-0.1	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109_0.3	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA110-0.1	HA110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111-0.1	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111_0.3	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112-0.1	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA200	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC200	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112_0.3	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA113-0.1	HA113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA114-0.1	HA114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA115-0.1	HA115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116-0.1	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116_0.3	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA201_0.1	HA201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	DUP1	HA202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA202_0.1	HA202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA203_0.1	HA203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA204_0.1	HA204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA301_0.1	HA301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA302_0.1	HA302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA303_0.1	HA303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA304_0.1	HA304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA305_0.1	HA305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA306_0.1	HA306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA307_0.1	HA307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA308_0.1	HA308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA309_0.1	HA309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA310_0.1	HA310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA311_0.1	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA111	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA312_0.1	HA312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA313_0.1	HA313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA314_0.1	HA314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA315_0.1	HA315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA316_0.1	HA316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA317_0.1	HA317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA318_0.1	HA318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA319_0.1	HA319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA320_0.1	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA112	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA321_0.1	HA321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA322_0.1	HA322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA323_0.1	HA323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA324_0.1	HA324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA325_0.1	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA113	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA326_0.1	HA326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA327_0.1	HA327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA328_0.1	HA328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA329_0.1	HA329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA330_0.1	HA330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.1	HA331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2	HA332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2_PACM	HA333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																			
Number of Results			2	23	21	23	23	23	2	23	2	21	21	23	23	23	2	23	23	23	23	23	23	23	23	23	23	23	23	21	21	2	21
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.5	<0.1
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<1	<1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<10	<0.1
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration				0.48	0.05	0.058	0.058	0.058		0.058		0.05	0.05	0.058	0.058	0.058		0.15	0.1	0.1	0.058	0.1	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.05	0.05		0.05
Median Concentration			0.275	0.5	0.05	0.05	0.05	0.05	0.1375	0.05	0.275	0.05	0.05	0.05	0.05	0.05	0.1375	0.1	0.1	0.1	0.05	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	2.625	0.05
Standard Deviation				0.094	0	0.042	0.042	0.042		0.042		0	0	0.042	0.042	0.042		0.16	0.036	0.036	0.042	0.036	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0	0		0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

			Organophosphorous Pesticides																																	
			Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methidathion	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Phorate	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.2	0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	0.2	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.2	0.2	2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NEPM 2013 HIL, Residential A								160																												
CRCCARE 2011 Soil HSL for Direct Contact, HSL-A Residential																																				
0-1m																																				
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																																				
0-1m																																				
1-2m																																				
2-4m																																				
>4m																																				
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																																				
0-2m																																				
NEPM 2013 ESL UR/POS, Coarse Soil																																				
0-2m																																				
Site_ID	**Field_ID**	**Location_Code**																																		
Gillieston PS	BH01_0.2	BH01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH01_0.5	BH01	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_0.3	BH03	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_0.8-1.0	BH03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_1.3-1.5	BH03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH04_0.2	BH04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.0	BH05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.5	BH05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH06_0.2	BH06	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH06_0.5	BH06	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH07_0.5	BH07	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH07_1.5	BH07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.2	BH08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.5	BH08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH09_0.1	BH09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH11_0.1	BH11	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH12_0.1	BH12	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_0.2	BH14	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_1.3	BH14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_1.5	BH14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_0.2	BH15	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA400	BH15	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC400	BH15	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Gillieston PS	BH15_0.5	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_1.4	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH16_0.2	BH16	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH17_0.2	BH17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH17_0.9	BH17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH18_0.2	BH18	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH19_0.2	BH19	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH19_0.5	BH19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_0.2	BH20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_1.5	BH20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH21_0.8	BH21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH22_0.1	BH22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH23_0.1	BH23	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH24_0.2	BH24	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH25_0.2	BH25	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH26_0.2	BH26	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH27_0.1-0.2	BH27	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH27_0.5	BH27	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA200	BH27	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC200	BH27	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gillieston PS	BH27_1.5	BH27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH28_0.2	BH28	-	<0.2	-	<0.2	-	<0.2	-	-	-	-	<0.5	<0.5	<0.5	-	<0.2	-	<0.2	-	-	<0.2	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH28_1.0	BH28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA101-0.1	HA101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102-0.1	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102_0.3	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103-0.1	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103_0.3	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104-0.1	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104_0.3	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA105-0.1	HA105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA106-0.1	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA107-0.1	HA107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108-0.1	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108_0.3	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109-0.1	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109_0.3	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA110-0.1	HA110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111-0.1	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111_0.3	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112-0.1	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA200	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC200	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112_0.3	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA113-0.1	HA113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA114-0.1	HA114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA115-0.1	HA115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116-0.1	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116_0.3	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA201_0.1	HA201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	DUP1	HA202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA202_0.1	HA202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA203_0.1	HA203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA204_0.1	HA204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA301_0.1	HA301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA302_0.1	HA302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA303_0.1	HA303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA304_0.1	HA304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA305_0.1	HA305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA306_0.1	HA306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA307_0.1	HA307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA308_0.1	HA308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA309_0.1	HA309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA310_0.1	HA310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA311_0.1	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA111	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA312_0.1	HA312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA313_0.1	HA313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA314_0.1	HA314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA315_0.1	HA315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA316_0.1	HA316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA317_0.1	HA317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA318_0.1	HA318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA319_0.1	HA319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA320_0.1	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA112	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA321_0.1	HA321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA322_0.1	HA322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA323_0.1	HA323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA324_0.1	HA324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA325_0.1	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA113	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA326_0.1	HA326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA327_0.1	HA327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA328_0.1	HA328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA329_0.1	HA329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA330_0.1	HA330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.1	HA331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2	HA332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2_PACM	HA333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																				
Number of Results			2	23	2	21	2	23	2	2	2	2	23	23	23	2	23	2	23	2	2	23	2	21	2	2	2	2	2	2	2	2	2	2	2	2
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration				0.11		0.1		0.11					0.24	0.24	0.24		0.11		0.11			0.11		0.25													
Median Concentration			0.175	0.1	0.175	0.1	0.175	0.1	0.175	1.75	0.175	0.175	0.25	0.25	0.25	0.175	0.1	0.175	0.1	0.175	0.175	0.1	0.175	0.25	0.175	0.175	1.75	0.175	1.75	0.175	0.175	0.175	0.175	0.175	0.175	0.175
Standard Deviation				0.031		0		0.031					0.031	0.031	0.031		0.031		0.031			0.031		0													
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

			Pesticides				Polychlorinated Biphenyls										SVOCs	Perfluorocarbons												
			Isodrin	Mirex	Parathion	Pirimiphos-methyl	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Aroclor 1262	PCBs (Sum of total)	EPN	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoate (PFOA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FtS)	Sum of PFHxS and PFOS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1	0.2	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0016	0.0008	0.0016	0.0016	0.0016
NEPM 2013 HIL, Residential A				10												1													
CRCCARE 2011 Soil HSL for Direct Contact, HSL-A Residential																													
0-1m																													
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand																													
0-1m																													
1-2m																													
2-4m																													
>4m																													
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged																													
0-2m																													
NEPM 2013 ESL UR/POS, Coarse Soil																													
0-2m																													
Site_ID	**Field_ID**	**Location_Code**																											
Gillieston PS	BH01_0.2	BH01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH01_0.5	BH01	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_0.3	BH03	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0008	<0.0016	<0.0016	<0.0016
Gillieston PS	BH03_0.8-1.0	BH03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_1.3-1.5	BH03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH04_0.2	BH04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.0	BH05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.5	BH05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH06_0.2	BH06	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH06_0.5	BH06	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH07_0.5	BH07	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH07_1.5	BH07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.2	BH08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.5	BH08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH09_0.1	BH09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH11_0.1	BH11	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH12_0.1	BH12	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_0.2	BH14	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0008	<0.0016	<0.0016	<0.0016
Gillieston PS	BH14_1.3	BH14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_1.5	BH14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_0.2	BH15	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA400	BH15	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC400	BH15	-	-	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_0.5	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_1.4	BH15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH16_0.2	BH16	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0008	<0.0016	<0.0016	<0.0016
Gillieston PS	BH17_0.2	BH17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH17_0.9	BH17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH18_0.2	BH18	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH19_0.2	BH19	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH19_0.5	BH19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_0.2	BH20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_1.5	BH20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH21_0.8	BH21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH22_0.1	BH22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH23_0.1	BH23	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH24_0.2	BH24	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH25_0.2	BH25	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0008	<0.0016	<0.0016	<0.0016
Gillieston PS	BH26_0.2	BH26	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH27_0.1-0.2	BH27	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0008	<0.0016	<0.0016	<0.0016
Gillieston PS	BH27_0.5	BH27	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA200	BH27	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC200	BH27	-	-	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH27_1.5	BH27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH28_0.2	BH28	<0.1	<0.1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH28_1.0	BH28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA101-0.1	HA101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102-0.1	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102_0.3	HA102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103-0.1	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103_0.3	HA103	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104-0.1	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104_0.3	HA104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA105-0.1	HA105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA106-0.1	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC100	HA106	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA107-0.1	HA107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108-0.1	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108_0.3	HA108	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109-0.1	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109_0.3	HA109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA110-0.1	HA110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111-0.1	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111_0.3	HA111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112-0.1	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA200	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC200	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112_0.3	HA112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA113-0.1	HA113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA114-0.1	HA114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA115-0.1	HA115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116-0.1	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116_0.3	HA116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA201_0.1	HA201	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	DUP1	HA202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA202_0.1	HA202	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA203_0.1	HA203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA204_0.1	HA204	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA301_0.1	HA301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA302_0.1	HA302	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA303_0.1	HA303	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA304_0.1	HA304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA305_0.1	HA305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA306_0.1	HA306	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA307_0.1	HA307	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA308_0.1	HA308	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA309_0.1	HA309	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA310_0.1	HA310	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA311_0.1	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA111	HA311	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA312_0.1	HA312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA313_0.1	HA313	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA314_0.1	HA314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA315_0.1	HA315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA316_0.1	HA316	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA317_0.1	HA317	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA318_0.1	HA318	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA319_0.1	HA319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA320_0.1	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA112	HA320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA321_0.1	HA321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA322_0.1	HA322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA323_0.1	HA323	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA324_0.1	HA324	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA325_0.1	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA113	HA325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA326_0.1	HA326	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA327_0.1	HA327	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA328_0.1	HA328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA329_0.1	HA329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA330_0.1	HA330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.1	HA331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2	HA332	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2_PACM	HA333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																													
Number of Results			21	21	23	2	23	23	23	23	23	23	23	21	21	23	2	5	5	5	5	5	5	5	5	5	5	5	5
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0008	<0.0016	<0.0016	<0.0016
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.1	<0.1	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<0.2	<0.2	<1	<0.5	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0008	<0.0016	<0.0016	<0.0016
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.05	0.05	0.11		0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.1	0.1	0.48		0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0004	0.0008	0.0008	0.0008
Median Concentration			0.05	0.05	0.1	0.175	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.175	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0004	0.0008	0.0008	0.0008
Standard Deviation			0	0	0.031		0.085	0.085	0.085	0.085	0.085	0.085	0.085	0	0	0.094		0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

			Acid Sulphate Soils		Inorganics										Organic
			pH (F)	pH (Fox)	Exchangeable Calcium	Exchangeable Magnesium	Exchangeable Potassium	Exchangeable Sodium	Exchangeable Sodium Percent	CEC	Moisture Content (dried @ 103°C)	pH (CaCl2)	pH (Lab)	TOC
			pH Unit	pH Unit	meq/100g	meq/100g	meq/100g	meq/100g	%	meq/100g	%	pH Units	pH_Units	%
EQL			0	0	0.01	0.02	0.01	0.01	0.1	0.02	1	0.1	0.1	0.05
NEPM 2013 HIL, Residential A														
CRCCARE 2011 Soil HSL for Direct Contact, HSL-A Residential														
0-1m														
NEPM 2013 Soil HSL Residential A&B, for Vapour Intrusion, Sand														
0-1m														
1-2m														
2-4m														
>4m														
NEPM 2013 EIL UR/POS, low pH, CEC, clay content - aged														
0-2m														
NEPM 2013 ESL UR/POS, Coarse Soil														
0-2m														
Site_ID	**Field_ID**	**Location_Code**												
Gillieston PS	BH01_0.2	BH01	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH01_0.5	BH01	-	-	0.65	0.6	0.36	0.07	3.9	1.7	-	4.1	5.4	0.93
Gillieston PS	BH03_0.3	BH03	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_0.8-1.0	BH03	5	4.7	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH03_1.3-1.5	BH03	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH04_0.2	BH04	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.0	BH05	4.7	4.3	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH05_1.5	BH05	4.8	4.1	1.4	3.9	0.61	0.24	3.9	6.1	-	4	4.8	0.72
Gillieston PS	BH06_0.2	BH06	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH06_0.5	BH06	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH07_0.5	BH07	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH07_1.5	BH07	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.2	BH08	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH08_0.5	BH08	5.3	4	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH09_0.1	BH09	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH11_0.1	BH11	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH12_0.1	BH12	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_0.2	BH14	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_1.3	BH14	5.1	4.8	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH14_1.5	BH14	-	-	0.24	2.5	0.35	0.54	15	3.6	-	3.9	5	0.12
Gillieston PS	BH15_0.2	BH15	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA400	BH15	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC400	BH15	-	-	-	-	-	-	-	-	8.4	-	-	-
Gillieston PS	BH15_0.5	BH15	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH15_1.4	BH15	5	4.2	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH16_0.2	BH16	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH17_0.2	BH17	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH17_0.9	BH17	-	-	0.16	2.5	0.33	0.6	16.6	3.6	-	4	5.2	0.08
Gillieston PS	BH18_0.2	BH18	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH19_0.2	BH19	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH19_0.5	BH19	7.7	6.7	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_0.2	BH20	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH20_1.5	BH20	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH21_0.8	BH21	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH22_0.1	BH22	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH23_0.1	BH23	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH24_0.2	BH24	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH25_0.2	BH25	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH26_0.2	BH26	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH27_0.1-0.2	BH27	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH27_0.5	BH27	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA200	BH27	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC200	BH27	-	-	-	-	-	-	-	-	19	-	-	-
Gillieston PS	BH27_1.5	BH27	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH28_0.2	BH28	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	BH28_1.0	BH28	4.7	4.3	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA101-0.1	HA101	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102-0.1	HA102	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA102_0.3	HA102	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103-0.1	HA103	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA103_0.3	HA103	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104-0.1	HA104	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA104_0.3	HA104	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA105-0.1	HA105	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA106-0.1	HA106	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA100	HA106	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC100	HA106	-	-	-	-	-	-	-	-	16	-	-	-
Gillieston PS	HA107-0.1	HA107	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108-0.1	HA108	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA108_0.3	HA108	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109-0.1	HA109	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA109_0.3	HA109	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA110-0.1	HA110	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111-0.1	HA111	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA111_0.3	HA111	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA112-0.1	HA112	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA200	HA112	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QC200	HA112	-	-	-	-	-	-	-	-	20	-	-	-
Gillieston PS	HA112_0.3	HA112	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA113-0.1	HA113	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA114-0.1	HA114	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA115-0.1	HA115	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116-0.1	HA116	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA116_0.3	HA116	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA201_0.1	HA201	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	DUP1	HA202	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA202_0.1	HA202	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA203_0.1	HA203	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA204_0.1	HA204	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA301_0.1	HA301	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA302_0.1	HA302	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA303_0.1	HA303	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA304_0.1	HA304	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA305_0.1	HA305	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA306_0.1	HA306	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA307_0.1	HA307	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA308_0.1	HA308	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA309_0.1	HA309	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA310_0.1	HA310	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA311_0.1	HA311	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA111	HA311	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA312_0.1	HA312	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA313_0.1	HA313	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA314_0.1	HA314	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA315_0.1	HA315	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA316_0.1	HA316	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA317_0.1	HA317	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA318_0.1	HA318	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA319_0.1	HA319	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA320_0.1	HA320	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA112	HA320	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA321_0.1	HA321	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA322_0.1	HA322	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA323_0.1	HA323	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA324_0.1	HA324	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA325_0.1	HA325	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	QA113	HA325	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA326_0.1	HA326	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA327_0.1	HA327	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA328_0.1	HA328	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA329_0.1	HA329	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA330_0.1	HA330	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.1	HA331	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2	HA332	-	-	-	-	-	-	-	-	-	-	-	-
Gillieston PS	HA331_0.2_PACM	HA333	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary														
Number of Results			8	8	4	4	4	4	4	4	4	4	4	4
Number of Detects			8	8	4	4	4	4	4	4	4	4	4	4
Minimum Concentration			4.7	4	0.16	0.6	0.33	0.07	3.9	1.7	8.4	3.9	4.8	0.08
Minimum Detect			4.7	4	0.16	0.6	0.33	0.07	3.9	1.7	8.4	3.9	4.8	0.08
Maximum Concentration			7.7	6.7	1.4	3.9	0.61	0.6	16.6	6.1	20	4.1	5.4	0.93
Maximum Detect			7.7	6.7	1.4	3.9	0.61	0.6	16.6	6.1	20	4.1	5.4	0.93
Average Concentration			5.3	4.6	0.61	2.4	0.41	0.36	9.9	3.8	16	4	5.1	0.46
Median Concentration			5	4.3	0.445	2.5	0.355	0.39	9.45	3.6	17.5	4	5.1	0.42
Standard Deviation			1	0.88	0.57	1.4	0.13	0.25	6.9	1.8	5.2	0.082	0.26	0.43
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0

Appendix H BOREHOLE LOGS

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH01
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362463.531, N: 6375234.044 (56 MGA2020) | SURFACE ELEVATION : 18.520 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

DEPTH (m)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER kPa	DCP TEST (AS 1289.6.3.2-1997) Blows/100 mm	STRUCTURE & Other Observations
0.0	STABLE	Not Encountered	0.50m B		FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				2 3 4 3 4 5	TOPSOIL
0.70m			1.00m	CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	D	St		7 4 4 4 7 5	ALLUVIUM
1.30m				SM	SILTY SAND: orange brown, pale grey, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironstone gravel	D	D		7 15 25	RESIDUAL SOIL
1.50m					EXCAVATION BH01 TERMINATED AT 1.50 m Target depth					

PENETRATION: VE E F H

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH01 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH02
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362455.680, N: 6375219.305 (56 MGA2020) | SURFACE ELEVATION : 19.987 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER (kPa)	DCP TEST (AS 1289.6.3.2-1997) Blows/100 mm	STRUCTURE & Other Observations
VE	STABLE	Not Encountered		0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				1	TOPSOIL
				0.5							2	
											4	
											3	
											3	
											4	
				0.70m								
							CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	D			3	ALLUVIUM
				1.0		CI-CH			St		4	
											10	
											3	
											3	
											2	
											3	
				1.50m							3	
				1.5			EXCAVATION BH02 TERMINATED AT 1.50 m Target depth				4	
											5	
											8	
											8	
											7	
				2.0							25	
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH02 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH03
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362444.504, N: 6375163.375 (56 MGA2020) | SURFACE ELEVATION : 23.701 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components)	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER kPa (100 200 300 400)	DCP TEST (AS 1289.6.3.2-1997) Blows/100 mm (5 10 15 20 25)	STRUCTURE & Other Observations
	STABLE	Not Encountered	0.50m B	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				3 10 12 12 13 13	TOPSOIL
			1.00m	0.5			0.70m CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	D	VSt		15 15 17 16 17	ALLUVIAL
				1.0		CI-CH	1.20m SILTY SAND: pale grey, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironstone gravel		D		25	RESIDUAL SOIL
				1.5		SM	1.50m EXCAVATION BH03 TERMINATED AT 1.50 m Target depth					
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH03 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH04
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362432.683, N: 6375153.028 (56 MGA2020) | SURFACE ELEVATION : 24.879 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

VE / PENETRATION / E / F / H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER kPa (100 200 300 400)	DCP TEST (AS 1289.6.3.2-1997) Blows/100 mm (5 10 15 20 25)	STRUCTURE & Other Observations
	STABLE	Not Encountered		0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	D			4 8 7	TOPSOIL
				0.5							11 12 12	
							0.70m CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel		St to VSt		12 13	ALLUVIUM
				1.0		CI-CH					14 14 14	
							1.20m SILTY CLAY: pale grey, mottled yellow, low to medium plasticity, with fine grained sand	M	D		14 15	RESIDUAL SOIL
				1.5		CL-CI	1.50m EXCAVATION BH04 TERMINATED AT 1.50 m Target depth				25	
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH04 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH05
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362432.632, N: 6375152.988 (56 MGA2020) | SURFACE ELEVATION : 24.901 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

DEPTH (m)	PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER kPa (100 200 300 400)	DCP TEST (AS 1289.6.3.2-1997) Blows/100 mm (5 10 15 20 25)	STRUCTURE & Other Observations
0.0		STABLE	Not Encountered				FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				5	TOPSOIL
0.50m				0.50m B			0.50m				10	
0.5						CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	D	VSt		11 12 12	ALLUVIUM
1.00m											13 15 15 15 12	
1.0							1.20m				14	
						SM	SILTY SAND: pale grey, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironstone gravel		D		16 25	RESIDUAL SOIL
1.5							1.50m					
							EXCAVATION BH05 TERMINATED AT 1.50 m Target depth					
2.0												
2.5												
3.0												
3.5												
4.0												
4.5												
5.0												

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH05 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH06
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362436.988, N: 6375233.710 (56 MGA2020) | SURFACE ELEVATION : 20.898 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING					MATERIAL						
PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO-METER (kPa)	STRUCTURE & Other Observations
	STABLE	Not Encountered	1.50m SPT 10/130mm HB N=R 1.63m	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets			100 200 300 400	TOPSOIL
				0.40m							
				0.50m			FILL: SANDY GRAVEL: grey, medium to coarse gravel, fine grained sand, trace low plasticity silt				FILL
				0.5			GRAVELLY SAND: orange brown, pale grey, fine grained sand, angular to sub-angular, medium to fine grained, ironstone gravel, trace low plasticity silt	D			WEATHERED ROCK
				1.0							
				1.5							
				1.80m			EXCAVATION BH06 TERMINATED AT 1.80 m Auger refusal on medium strength rock				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH06 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH07
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362431.770, N: 6375215.274 (56 MGA2020) | SURFACE ELEVATION : 21.916 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

VE / PENETRATION E F H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO-METER kPa 100 200 300 400	STRUCTURE & Other Observations
	STABLE	Not Encountered		0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
				0.40m							
				0.5			FILL: GRAVELLY SAND: grey, medium to coarse grained sand, sub-rounded to rounded, medium to fine grained gravel, trace low plasticity silt				FILL
				0.80m							
			1.00m D	1.0			GRAVELLY SAND: orange brown, medium to fine grained sand, angular to sub-rounded, medium to coarse grained gravel, trace low plasticity silt	D			WEATHERED ROCK
			1.50m SPT 5, 10/90mm HB N=R 1.74m	1.5							
				1.74m			EXCAVATION BH07 TERMINATED AT 1.74 m Auger refusal on medium strength rock				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH07 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH08
FILE / JOB NO : 304100928
SHEET : 1 OF 2

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362417.343, N: 6375244.410 (56 MGA2020) SURFACE ELEVATION : 22.156 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : ML

DATE STARTED : 20/12/22 DATE COMPLETED : 20/12/22 DATE LOGGED : 20/12/22 LOGGED BY : PB CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T HWT Casing		E	Not Encountered	0.50m D	0.0 22.2			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	D		TOPSOIL
					0.5 21.7		CI-CH	0.50m CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine to coarse grained sand, trace sub-angular to sub-rounded, medium to fine grained gravel		St	ALLUVIUM
				1.00m	1.0 21.2			0.90m SILTY SAND: brown, fine to coarse grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironstone gravel			RESIDUAL SOIL
		F		1.50m SPT 5, 13/50mm HB N=R 1.70m	1.5 20.7		SM			D	
					2.0 20.2			2.10m SANDSTONE: recovered as silty sand, grey, orange brown, inferred extremely weathered sandstone, very low strength			WEATHERED ROCK
		H		3.00m SPT 14/10mm HB N=R 3.01m	2.5 19.7 3.0 19.2			3.10m Continued as Cored Drill Hole			
					3.5 18.7						
					4.0 18.2						
					4.5 17.7						
					5.0 17.2						

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:17 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH08
FILE / JOB NO : 304100928
SHEET : 2 OF 3

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362417.343, N: 6375244.410 (56 MGA2020) SURFACE ELEVATION : 22.156 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : ML

DATE STARTED : 20/12/22 DATE COMPLETED : 20/12/22 DATE LOGGED : 20/12/22 LOGGED BY : PB CHECKED BY : TH

CASING DIAMETER : HWT BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : good

DRILLING						MATERIAL			FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL (-0.1) L (-0.4) M (-1.3) H (-3.8) VH (-12.5) EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 22.2						
					0.5 21.7						
					1.0 21.2						
					1.5 20.7						
					2.0 20.2						
					2.5 19.7						
					3.0 19.2		3.10m START CORING AT 3.10m				
HQ	10% LOSS	0% LOSS	25	Is(50) d=0.17 a=0.46 MPa UCS =2.5 MPa 3.57m	3.5 18.7		SANDSTONE: grey, orange brown and brown red, fine grained, bedded at 0-10 degree, ironstained	MW SW to MW MW SW to MW HW			3.12-3.14: JT 35° Clay IR S closed 3.18-3.21: JT 35° Clay IR S closed 3.29: BP 0° Clay PR S 3.38-3.42: JT 45° Fe SN IR RF 3.40-3.42: JT 20° Fe SN IR RF 3.30-3.60: JT 40° Fe SN IR RF closed 3.47-3.53: JT 45° Fe SN IR RF closed 3.56: DB 3.52-3.64: JT 45° Fe SN IR RF closed 3.55-3.64: JT 40° Fe SN IR RF 3.62-3.66: JT 20 - 40° Fe SN IR RF 3.63-3.67: JT 35° Fe SN IR RF closed 3.68: BP 5° Clay CU S closed 3.78-3.81: JT 30° Fe SN IR RF 3.80-3.84: JT 45° Fe SN IR RF 3.85-3.92: JT 55° Fe SN CU RF 3.90: BP 5° Fe SN CU RF 3.93: BP 10° Fe SN CU RF 4.00: DB 4.14-4.17: SM Clay 4.17: BP 0° Fe SN CU RF 4.10-4.30: JT 20° Fe SN IR RF 4.17-4.26: JT 60° Fe SN IR RF 4.25-4.29: FZ 4.43: BP 10° Fe SN IR S 4.48: BP 10° Fe SN IR RF 4.55: BP 10° Fe SN UN RF 4.63-4.67: JT 70° Fe SN IR RF 4.63-4.69: JT 60° Fe SN IR RF 4.70: BP 0° Sand IR RF 4.74: BP 0° Sand PR RF 4.75: DB
					4.0 18.2		4.28m				
							MUDSTONE: pale grey, indistinctly bedded, trace of sand and mudstone gravel clast	HW			
					4.5 17.7		4.44m SANDSTONE: grey, brown and orange brown, fine grained, 2-20 mm gravel in the strata, ironstained	MW HW			
	10% LOSS	4.75 0% LOSS	48	Is(50) d=0.33 a=0.36 MPa				SW to MW			
		5.00			5.0 17.2		5.00m BOREHOLE BH08 TERMINATED AT 5.00 m Target depth				

See Explanatory Notes for details of abbreviations & basis of descriptions.

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA CORED DRILL HOLE 5 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:29 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH08
FILE / JOB NO : 304100928
SHEET : 3 OF 3

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362417.343, N: 6375244.410 (56 MGA2020) SURFACE ELEVATION : 22.156 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : ML

DATE STARTED : 20/12/22 DATE COMPLETED : 20/12/22 DATE LOGGED : 20/12/22 LOGGED BY : PB CHECKED BY : TH

CASING DIAMETER : HWT BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : good

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.4 M -1.3 H -3.8 VH -12.5 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					5.0 17.2						4.88-4.89: JT 45° Fe SN IR RF 4.90-4.92: FZ
					5.5 16.7						
					6.0 16.2						
					6.5 15.7						
					7.0 15.2						
					7.5 14.7						
					8.0 14.2						
					8.5 13.7						
					9.0 13.2						
					9.5 12.7						
					10.0 12.2						

See Explanatory Notes for details of abbreviations & basis of descriptions.

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RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA CORED DRILL HOLE 6 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:29 10.03.00.09 Cardno M6E

Stantec	TITLE: Borehole Core Photographs – BH08 **Gillieston Public School**			
	PROJECT NO: **304100928**	TEST DATE: **20/12/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 1** **3.1-5.0m (1.9 m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **PB**	CHECKED BY: **TH**

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH09
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362404.420, N: 6375211.026 (56 MGA2020) | SURFACE ELEVATION : 24.519 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETROMETER kPa	STRUCTURE & Other Observations
	STABLE	Not Encountered	0.50m D	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
				0.5		CI-CH	0.50m CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine to coarse grained sand, trace sub-angular to sub-rounded, medium to fine grained gravel 0.65m		F		ALLUVIUM
			1.00m	1.0			SILTY SAND: orange brown, grey, fine to coarse grained sand, low plasticity silt, with angular to sub-angular, medium to fine grained, ironstone gravel	D			WEATHERED ROCK
			1.50m SPT 12/10mm HB N=R 1.51m	1.5			1.51m EXCAVATION BH09 TERMINATED AT 1.51 m Auger refusal on medium strength rock				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH09 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH10
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362403.006, N: 6375247.651 (56 MGA2020) | SURFACE ELEVATION : 23.292 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETROMETER (100, 200, 300, 400 kPa)	STRUCTURE & Other Observations
	STABLE	Not Encountered		0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
				0.30m							
				0.5		SM	SILTY SAND: orange brown, grey, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained gravel	D	D		RESIDUAL SOIL
				0.90m							
				1.00m			SILTY SAND: pale grey, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained gravel, inferred weathered sandstone				WEATHERED ROCK
				1.0			EXCAVATION BH10 TERMINATED AT 1.00 m Auger refusal on medium strength rock				
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
- N Natural Exposure
- E Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

SUPPORT
- T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
- U50 - Undisturbed Sample 50 mm diameter
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- HP - Hand Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
- PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
- D - Dry
- M - Moist
- W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH10 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH11
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362379.585, N: 6375210.150 (56 MGA2020) | SURFACE ELEVATION : 25.695 (AHD)

EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling

DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH

EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING					MATERIAL						
PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETROMETER (100, 200, 300, 400)	STRUCTURE & Other Observations
	STABLE	Not Encountered		0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	D	L		TOPSOIL
				0.30m			SILTY SAND: grey to pale grey, fine grained sand, low plasticity silt, trace angular, medium to fine grained, ironstone gravel				WEATHERED ROCK
				0.50m			EXCAVATION BH11 TERMINATED AT 0.50 m Auger refusal on medium strength rock				
				0.5							
				1.0							
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
- N Natural Exposure
- E Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

SUPPORT
- T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
- U50 - Undisturbed Sample 50 mm diameter
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- HP - Hand Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
- PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
- D - Dry
- M - Moist
- W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH11 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH12
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362382.560, N: 6375243.284 (56 MGA2020) | SURFACE ELEVATION : 24.905 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING				MATERIAL						
PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO-METER (100, 200, 300, 400)	STRUCTURE & Other Observations
	STABLE	Not Encountered	0.20m D	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets		L		TOPSOIL
			0.50m	0.5							
							0.80m	D			
				1.0		CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel		St		ALLUVIUM
							1.40m				
			1.50m SPT 18/100mm HB N=R 1.60m	1.5			SILTY SAND: orange brown, pale grey, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained gravel, inferred weathered sandstone				WEATHERED ROCK
							1.60m EXCAVATION BH12 TERMINATED AT 1.60 m Auger refusal on medium strength rock				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH12 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH13
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362364.357, N: 6375226.656 (56 MGA2020) | SURFACE ELEVATION : 25.279 (AHD)

EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling

DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH

EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING					MATERIAL						
PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETROMETER kPa (100, 200, 300, 400)	STRUCTURE & Other Observations
	STABLE	Not Encountered	D 0.50m 0.70m SPT 10/10mm HB N=R 0.71m	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
							0.30m				
						CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	D	St		ALLUVIUM
				0.5			0.45m				
						CL	SILTY SAND: orange brown, brown-red, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironstone gravel		D		RESIDUAL SOIL
							0.60m				
							0.71m				WEATHERED ROCK
				1.0			SILTY SAND: pale grey, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironstone gravel, inferred weathered sandstone				
							EXCAVATION BH13 TERMINATED AT 0.71 m Auger refusal on medium strength rock				
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
- N Natural Exposure
- E Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

SUPPORT
- T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
- U50 - Undisturbed Sample 50 mm diameter
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- HP - Hand Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
- PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
- D - Dry
- M - Moist
- W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH13 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH14
FILE / JOB NO : 304100928
SHEET : 1 OF 2

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362352.234, N: 6375240.475 (56 MGA2020) SURFACE ELEVATION : 24.777 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : ML

DATE STARTED : 20/12/22 DATE COMPLETED : 20/12/22 DATE LOGGED : 20/12/22 LOGGED BY : PB CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T HWT Casing		E	Not Encountered		0.0 24.8			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets			TOPSOIL
					0.50m						
		F			0.5 24.3		CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	D	F	ALLUVIUM
					1.0 23.8						
		H			1.10m			SILTY SAND: pale grey, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel			WEATHERED ROCK
				1.50m SPT 10/100mm HB N=R 1.60m	1.5 23.3			colour becomming orange brown			
					1.60m			Continued as Cored Drill Hole			
					2.0 22.8						
					2.5 22.3						
					3.0 21.8						
					3.5 21.3						
					4.0 20.8						
					4.5 20.3						
					5.0 19.8						

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH14 1 OF 2

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:17 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH14
FILE / JOB NO : 304100928
SHEET : 2 OF 2

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362352.234, N: 6375240.475 (56 MGA2020) SURFACE ELEVATION : 24.777 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : ML

DATE STARTED : 20/12/22 DATE COMPLETED : 20/12/22 DATE LOGGED : 20/12/22 LOGGED BY : PB CHECKED BY : TH

CASING DIAMETER : HWT BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : good

DRILLING					MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	NATURAL FRACTURE (mm)	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 / 24.8					
					0.5 / 24.3					
					1.0 / 23.8					
					1.5 / 23.3					
					1.60m		START CORING AT 1.60m			
HQ	10% LOSS	0% LOSS 2.05	22	Is(50) d=0.03 a=0.03 MPa	2.0 / 22.8		SANDSTONE: brown, orange brown and pale grey, medium to fine grained, bedded at 0-10 degrees	EW HW		1.60-1.61: DB 1.61: DB 1.75: BP 0 - 5° Fe SN IR RF 1.83: BP 25° Fe SN CU RF 1.85: BP 25° Fe SN CU RF 1.89: BP 25° Fe SN CU RF 1.91-1.95: JT 70° Fe SN IR RF 1.95-1.97: EWS 1.97-2.10: JT 80° Fe SN IR RF
					2.10m					
	10% LOSS	7% LOSS 3.00	38	Is(50) d=0.14 a=0.96 MPa	2.5 / 22.3		2.19m CONGLOMERATE: orange brown, coarse grained, clast supported, clast range from gravel to pebbles, pebble dominated, sub-rounded to sub-angular clast, silicious and clay are the cementing material SANDSTONE: brown, pale grey and orange brown, medium to fine grained, bedded at 0-10 degrees	EW HW HW HW		2.10-2.25: Fz 2.29-2.30: EWS 2.34: BP 0° Fe SN PR RF 2.36-2.41: JT 45° Fe SN IR RF 2.37-2.41: JT 40° Fe SN IR RF 2.41-2.44: JT 45° Fe SN IR RF 2.44-2.48: JT 45° Fe SN IR RF 2.51: BP 10° Fe SN IR RF 2.59-2.62: JT 35° Fe SN IR RF 2.63: DB 2.66-2.72: JT 35° Sand IR RF 2.71-2.92: EWS
					2.70m					
					2.93m		CONGLOMERATE: orange brown, pale grey, medium to coarse grained, matrix supported, clast range from gravel to pebbles, gravel dominated, sub angular to sub-rounded clast, silicious material, sand and clay are the cementing material and matrix	HW		
					3.00m					
	10% LOSS	0% LOSS 3.68	51	Is(50) d=0.91 a=0.96 MPa	3.0 / 21.8		CORE LOSS 0.07m (2.93-3.00) SANDSTONE: brown, pale grey, medium to fine grained, bedded at 0-10 degrees, trace of pebbles, sub-angular to sub-rounded, medium to fine grained	MW EW MW to HW SW HW SW		3.02-3.05: JT 25° Sand PR RF 3.06: BP 0° Sand PR S 3.15: BP 0° Fe SN PR S 3.18: BP 20° Fe SN PR S 3.20-3.22: EWS 3.23: DB 3.29-3.31: EWS 3.36-3.41: JT 65° Fe SN IR S 3.43-3.47: EWS 3.48: BP 10° Fe SN PR S 3.50-3.53: EWS
					3.5 / 21.3					
					3.68m		BOREHOLE BH14 TERMINATED AT 3.68 m Target depth			
					4.0 / 20.8					
					4.5 / 20.3					
					5.0 / 19.8					

ESTIMATED STRENGTH Is(50) — ● - Axial ○ - Diametral — VL -0.1 L -0.4 M -1.3 H -3.8 VH -12.5 EH

NATURAL FRACTURE (mm) — 20 40 100 300 1000

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH14 2 OF 2

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA CORED DRILL HOLE 5 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:29 10.03.00.09 Cardno M6E

Stantec	TITLE: Borehole Core Photographs – BH14 **Gillieston Public School**			
	PROJECT NO: **304100928**	TEST DATE: **20/12/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 1** **1.6-3.68m (2.08 m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **PB**	CHECKED BY: **TH**

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH15
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362343.297, N: 6375226.124 (56 MGA2020) | SURFACE ELEVATION : 24.989 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 20/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING					MATERIAL						
PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO-METER kPa	STRUCTURE & Other Observations
	STABLE	Not Encountered	1.25m SPT 10/50mm HB N=R 1.30m	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	D		100 200 300 400	TOPSOIL
				0.40m							
				0.5		SM	SILTY SAND: brown, grey, fine grained sand, low plasticity silt, trace sub-rounded to rounded, medium to fine grained, ironstone gravel, trace medium to high plasticity clay		MD		FILL
				0.60m			CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	M	VSt		ALLUVIUM
						CI-CH					
				1.00m			SANDSTONE: recovered as silty sand, grey, orange brown, inferred extremely weathered sandstone, very low strength	D			WEATHERED ROCK
				1.30m			EXCAVATION BH15 TERMINATED AT 1.30 m Auger refusal on medium strength rock				
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH15 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH16
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362331.221, N: 6375179.241 (56 MGA2020) | SURFACE ELEVATION : 26.038 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

PENETRATION (VE / E / F / H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETROMETER kPa (100 / 200 / 300 / 400)	STRUCTURE & Other Observations
	STABLE	Not Encountered		0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	D	D		TOPSOIL
				0.5							
				1.0			1.00m GRAVELLY SAND: brown, brown-red, fine grained sand, angular to sub-angular, medium to fine grained, ironstone gravel, trace low plasticity silt, inferred weathered sandstone				WEATHERED ROCK
			1.50m SPT 10/10mm HB N=R 1.51m	1.5			1.51m EXCAVATION BH16 TERMINATED AT 1.51 m Auger refusal on medium strength rock				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH16 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH17
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362316.507, N: 6375167.385 (56 MGA2020) | SURFACE ELEVATION : 25.205 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETROMETER kPa (100 200 300 400)	STRUCTURE & Other Observations
	STABLE	Not Encountered		0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
				0.30m							
				0.5		SM	SILTY SAND: brown-red, brown-yellow, fine grained sand, low plasticity silt, with medium to high plasticity clay, trace angular, medium to fine grained gravel	D	D		RESIDUAL SOIL
				0.60m							
							SILTY SAND: pale grey, medium to fine grained sand, low plasticity silt, trace angular, fine grained gravel, inferred weathered sandstone				WEATHERED ROCK
			0.90m SPT 10/10mm HB N=R 0.91m	0.91m							
				1.0			EXCAVATION BH17 TERMINATED AT 0.91 m Auger refusal on medium strength rock				
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

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D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

VS	- Very Soft
S	- Soft
F	- Firm
St	- Stiff
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H	- Hard
VL	- Very Loose
L	- Loose
MD	- Medium Dense
D	- Dense
VD	- Very Dense

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH17 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH18
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362324.695, N: 6375150.118 (56 MGA2020) | SURFACE ELEVATION : 26.495 (AHD)

EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling

DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH

EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING					MATERIAL						
PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO-METER kPa	STRUCTURE & Other Observations
	STABLE	Not Encountered	0.50m D 1.00m 1.20m SPT 10/10mm HB N=R 1.21m	0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		SM	FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets 0.60m SILTY SAND: orange-brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained, ironstone gravel, trace medium to high plasticity clay 0.95m SILTY SAND: pale grey, medium to fine grained sand, low plasticity silt, trace angular, fine grained, ironstone gravel, inferred weathered sandstone 1.21m EXCAVATION BH18 TERMINATED AT 1.21 m Auger refusal on medium strength rock	D	L D VD	100 200 300 400	TOPSOIL RESIDUAL SOIL WEATHERED ROCK

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
- N Natural Exposure
- E Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

SUPPORT
- T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
- U50 - Undisturbed Sample 50 mm diameter
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- HP - Hand Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
- PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
- D - Dry
- M - Moist
- W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH18 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH19
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362352.390, N: 6375188.685 (56 MGA2020) | SURFACE ELEVATION : 26.667 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

DEPTH (m)	PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER (kPa)	STRUCTURE & Other Observations
0.0		STABLE	Not Encountered				FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	D			TOPSOIL
0.40m											
0.5						CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel		St		ALLUVIUM
1.00m				1.00m D							
1.0						SM	SILTY SAND: orange brown, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, trace medium to high plasticity clay		D		RESIDUAL SOIL
1.30m											
1.5				1.50m SPT 5, 15/50mm HB N=R 1.70m			SILTY SAND: pale grey, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, inferred sandstone				WEATHERED ROCK
1.70m											
							EXCAVATION BH19 TERMINATED AT 1.70 m Auger refusal on medium strength rock				
2.0											
2.5											
3.0											
3.5											
4.0											
4.5											
5.0											

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH19 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH20
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362348.789, N: 6375146.458 (56 MGA2020) | SURFACE ELEVATION : 28.080 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

PENETRATION (VE E F H)	SUPPORT	GROUNDWATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER (kPa)	STRUCTURE & Other Observations
	STABLE	Not Encountered	0.50m D	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	D	St	100 200 300 400	TOPSOIL
				0.5			0.50m CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel				ALLUVIUM
			1.00m	1.0		CI-CH	1.10m SILTY SAND: orange brown, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, trace medium to high plasticity clay		D		RESIDUAL SOIL
			1.50m SPT 10/10mm HB N=R 1.51m	1.5		SM	1.30m SILTY SAND: pale grey, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, inferred sandstone				WEATHERED ROCK
							1.51m EXCAVATION BH20 TERMINATED AT 1.51 m Auger refusal on medium strength rock				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH20 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH21
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362369.477, N: 6375164.614 (56 MGA2020) | SURFACE ELEVATION : 27.880 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO-METER (100 200 300 400)	STRUCTURE & Other Observations
	STABLE	Not Encountered	D 0.50m	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
				0.40m				D			
				0.5			SILTY SAND: orange brown, grey, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, inferred weathered sandstone				WEATHERED ROCK
				0.80m			EXCAVATION BH21 TERMINATED AT 0.80 m Auger refusal on medium strength rock				
				1.0							
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
- N Natural Exposure
- E Existing Excavation
- BH Backhoe Bucket
- B Bulldozer Blade
- R Ripper

SUPPORT
- T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
- U50 - Undisturbed Sample 50 mm diameter
- D - Disturbed Sample
- B - Bulk Disturbed Sample
- MC - Moisture Content
- HP - Hand Penetrometer (UCS kPa)
- VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
- PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
- D - Dry
- M - Moist
- W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH21 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH22
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362382.597, N: 6375162.292 (56 MGA2020) | SURFACE ELEVATION : 27.659 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

DEPTH (m)	PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER kPa (100 200 300 400)	STRUCTURE & Other Observations
0.0		STABLE	Not Encountered				FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
0.5							0.60m				
						CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	D	St		ALLUVIUM
1.0							1.10m				
						SM	SILTY SAND: orange brown, fine grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, trace medium to high plasticity clay		D		RESIDUAL SOIL
							1.40m				
1.5				1.50m SPT 5, 10/10mm HB N=R 1.66m			SILTY SAND: pale grey, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, inferred weathered sandstone				WEATHERED ROCK
							1.66m				
							EXCAVATION BH22 TERMINATED AT 1.66 m Auger refusal on medium strength rock				
2.0											
2.5											
3.0											
3.5											
4.0											
4.5											
5.0											

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH22 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH23
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362373.044, N: 6375146.309 (56 MGA2020) | SURFACE ELEVATION : 28.565 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING					MATERIAL						
PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO-METER kPa (100, 200, 300, 400)	STRUCTURE & Other Observations
	STABLE	Not Encountered	1.50m SPT 13/130mm HB N=R 1.63m	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
				0.5		CI-CH	0.50m CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel 0.65m		St		ALLUVIUM
				1.0			SILTY SAND: pale grey, orange brown, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, inferred weathered sandstone	D			WEATHERED ROCK
				1.5			1.63m EXCAVATION BH23 TERMINATED AT 1.63 m Auger refusal on medium strength rock				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH23 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH24
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362397.539, N: 6375156.658 (56 MGA2020) | SURFACE ELEVATION : 27.043 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 21/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING				MATERIAL						
PENETRATION (VE, E, F, H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	HAND PENETRO-METER kPa	STRUCTURE & Other Observations
	STABLE	Not Encountered	0.50m D	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				TOPSOIL
				0.30m			SILTY SAND: pale grey, orange brown, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, inferred weathered sandstone	D			WEATHERED ROCK
			1.00m SPT 10/10mm HB N=R 1.01m	1.01m			EXCAVATION BH24 TERMINATED AT 1.01 m Auger refusal on medium strength rock				
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
				4.5							
				5.0							

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH24 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH25
FILE / JOB NO : 304100928
SHEET : 1 OF 2

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362395.898, N: 6375142.870 (56 MGA2020) SURFACE ELEVATION : 27.949 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : ML

DATE STARTED : 20/12/22 DATE COMPLETED : 20/12/22 DATE LOGGED : 20/12/22 LOGGED BY : PB CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T HWT Casing		E	Not Encountered		0.0 27.9			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	D	D	TOPSOIL
					0.40m						
		F			0.5 27.4		SM	SILTY SAND: orange-brown, fine grained sand, low plasticity silt, trace sub-angular to sub-rounded, medium to fine grained gravel			FILL
				0.90m D							
					1.0 26.9		CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel		VSt	ALLUVIUM
		H		1.30m SPT 15/80mm				SILTY SAND: pale grey, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel, inferred weathered sandstone			WEATHERED ROCK
				HB N=R 1.38m				Continued as Cored Drill Hole			
					1.5 26.4						
					2.0 25.9						
					2.5 25.4						
					3.0 24.9						
					3.5 24.4						
					4.0 23.9						
					4.5 23.4						
					5.0 22.9						

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

Stantec

File: 304100928 BH25 1 OF 2

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:17 10.03.00.09 Cardno M6E

CORED DRILL HOLE LOG

HOLE NO : BH25
FILE / JOB NO : 304100928
SHEET : 2 OF 2

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362395.898, N: 6375142.870 (56 MGA2020) SURFACE ELEVATION : 27.949 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : ML

DATE STARTED : 20/12/22 DATE COMPLETED : 20/12/22 DATE LOGGED : 20/12/22 LOGGED BY : PB CHECKED BY : TH

CASING DIAMETER : HWT BARREL (Length) : 3.00 m BIT : Stepped BIT CONDITION : good

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(CORE LOSS RUN %) / DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) / RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.4 M -1.3 H -3.8 VH -12.5 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 27.9						
					0.5 27.4						
					1.0 26.9						
							1.38m START CORING AT 1.38m				
HQ	0% LOSS	0% LOSS 2.58	36	Is(50) d=0.65 a=0.79 MPa	1.5 26.4		SANDSTONE: pale grey, brown and orange brown, medium to coarse grained, 1-5 % carbonaceous lamination at 10-50 degrees, dark grey, trace of ironstone gravel	SW to MW			1.44: BP 5 - 10° Fe SN CU RF 1.50: BP 5° Fe SN PR RF 1.60: DB 1.67-1.70: JT 35° Sand IR RF
								MW			1.85: BP 0 - 5° Fe SN PR RF 1.87: BP 0 - 5° Fe SN PR RF 1.90: BP 0 - 5° Fe SN PR RF 1.91: BP 0° Sand PR RF 1.92-2.00: FZ
				Is(50) d=0.11 a=0.16 MPa	2.0 25.9			SW			2.05-2.07: JT 55° Fe SN IR RF 2.06: BP 5° Fe SN PR RF 2.12: BP 5° Fe SN UN RF 2.12-2.19: JT 45° Fe SN CU RF 2.15-2.19: JT 60° Fe SN IR RF 2.19-2.22: JT 40° Fe SN IR RF 2.19-2.24: JT 65° Fe SN IR RF 2.24-2.28: FZ 2.43: BP 5° Fe SN IR RF 2.43-2.49: FZ 2.58: EOR
	10% LOSS	10% LOSS 3.82	48	UCS =13 MPa 2.92m	2.5 25.4						2.64-2.68: JT 55° Fe SN ST RF 2.67: DB 2.74: BP 0° Fe SN PR RF
				Is(50) d=1.2 a=0.67 MPa	3.0 24.9			EW SW			2.91: DB 2.97-3.00: JT 45° Fe SN IR RF
								EW			3.00-3.30: CS 3.21: DB 3.26-3.29: BP 35° Fe SN IR RF 3.32-3.40: JT 75° Sand IR RF
							3.40m SANDSTONE: pale grey to grey, medium to fine grained, 10-15 % of carbonaceous lamination at 10-20 degrees, dark grey, with gravel medium to fine grained, rounded to sub-rounded	HW			
					3.5 24.4		3.70m	EW			3.61-3.63: JT 45° Sand CU RF 3.64: BP 0° Sand PR RF 3.70: BP 0° Sand PR RF 3.70-3.82: Core Loss
							3.82m CORE LOSS 0.12m (3.70-3.82)				
	10% LOSS	52% LOSS 4.42	22				3.86m SANDSTONE: grey, brown yellow, medium to coarse grained, with gravel, medium to fine grained, rounded to sub-rounded	EW			
					4.0 23.9		CORE LOSS 0.31m (3.86-4.17)				3.86-4.17: Core Loss
							4.17m SANDSTONE: pale grey, brown and brown yellow, medium to coarse grained, with gravel, medium to fine grained, rounded to sub-angular	MW			4.17-4.29: FZ
											4.36-4.42: FZ
	10% LOSS	0% LOSS 5.00	35	Is(50) d=0.33 a=0.25 MPa	4.5 23.4			EW			4.49: DB 4.52-4.59: FZ
											4.69: DB 4.75: BP 0° Sand CU S
								SW			4.70-5.00: JT 50° Fe SN PR RF 4.84-4.86: JT 45° Fe SN PR RF 4.88-4.92: JT 45° Fe SN PR RF
					5.0 22.9		5.00m BOREHOLE BH25 TERMINATED AT 5.00 m Target depth				

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA CORED DRILL HOLE 5 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:29 10.03.00.09 Cardno M6E

Stantec	TITLE: Borehole Core Photographs – BH25 **Gillieston Public School**			
	PROJECT NO: **304100928**	TEST DATE: **20/12/2022**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 1** **1.38-5.0m (3.62 m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **PB**	CHECKED BY: **TH**

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH26
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362436.114, N: 6375141.277 (56 MGA2020) | SURFACE ELEVATION : 25.480 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

VE / PENETRATION / E / F / H	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER kPa (100 200 300 400)	DCP TEST (AS 1289.6.3.2-1997) Blows/100 mm (5 10 15 20 25)	STRUCTURE & Other Observations
	STABLE	Not Encountered	0.50m D	0.0			FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				5 6 10 20 25	TOPSOIL
				0.5								
							0.70m	D				
			1.00m B	1.0		CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel		St			ALLUVIUM
							1.10m					
			1.35m				SILTY SAND: orange-brown, pale grey, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel					WEATHERED ROCK
				1.35m								
				1.5			EXCAVATION BH26 TERMINATED AT 1.35 m Auger refusal on medium strength rock					
				2.0								
				2.5								
				3.0								
				3.5								
				4.0								
				4.5								
				5.0								

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

STANTEC AUSTRALIA PTY LTD

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File: 304100928 BH26 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH27
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362496.104, N: 6375194.206 (56 MGA2020) | SURFACE ELEVATION : 18.916 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

DEPTH (m)	PENETRATION (VE E F H)	SUPPORT	GROUNDWATER LEVELS	SAMPLES & FIELD TESTS	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER kPa (100 200 300 400)	DCP TEST (AS 1289.6.3.2-1997) Blows/100 mm (5 10 15 20 25)	STRUCTURE & Other Observations
0.0		STABLE					FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets	M			2 5 5 7 6 5 5 6 4 3 5	TOPSOIL
0.5												
1.0								W	St			
							1.20m					
						CI-CH	CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel		VSt		15 15 17	ALLUVIUM
1.5							1.50m EXCAVATION BH27 TERMINATED AT 1.50 m Target depth				16 15 25	
2.0												
2.5												
3.0												
3.5												
4.0												
4.5												
5.0												

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

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D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH27 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

EXCAVATION - GEOLOGICAL LOG

PIT NO : BH28
FILE / JOB NO : 304100928
SHEET : 1 OF 1

PROJECT : Proposed School Redevelopment
LOCATION : Gillieston Public School

POSITION : E: 362490.485, N: 6375233.916 (56 MGA2020) | SURFACE ELEVATION : 16.031 (AHD)
EQUIPMENT TYPE : MI2 | METHOD : Auger Drilling
DATE EXCAVATED : 19/12/22 | LOGGED BY : PB | CHECKED BY : TH
EXCAVATION DIMENSIONS : 0.10 m LONG 0.10 m WIDE

DRILLING | MATERIAL

DEPTH (m)	PENETRATION (VE E F H)	SUPPORT	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION (Soil Type, Colour, Plasticity or Particle Characteristic, Secondary and Minor Components)	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	HAND PENETROMETER (kPa)	DCP TEST (AS 1289.6.3.2-1997) Blows/100 mm	STRUCTURE & Other Observations
0.0		STABLE	Not Encountered				FILL: SILTY SAND: brown, fine grained sand, low plasticity silt, trace angular, medium to fine grained gravel, trace of rootlets				0	TOPSOIL
0.5				0.50m B							1 1 1 1 1	
0.70m							CLAY: brown red, brown yellow and grey, medium to high plasticity, with fine grained sand, trace sub-rounded to rounded, medium to fine grained gravel	D	F		1 1	ALLUVIUM
0.90m						CI-CH						
1.0				1.00m			SILTY SAND: orange-brown, pale grey, fine to medium grained sand, low plasticity silt, trace angular to sub-angular, medium to fine grained, ironestone gravel				2 2	RESIDUAL SOIL
						SM			MD		3 3 3 4	
1.50m							EXCAVATION BH28 TERMINATED AT 1.50 m Target depth				4 5 5 5 15 25	
2.0												
2.5												
3.0												
3.5												
4.0												
4.5												
5.0												

PHOTOGRAPHS NOTES ☐ YES ☒ NO

METHOD
N Natural Exposure
E Existing Excavation
BH Backhoe Bucket
B Bulldozer Blade
R Ripper

SUPPORT
T Timbering

PENETRATION
VE E F H VH — No Resistance

WATER
10 Oct., 73 Water Level on Date shown
water inflow
water outflow

SAMPLES & FIELD TESTS
U50 - Undisturbed Sample 50 mm diameter
D - Disturbed Sample
B - Bulk Disturbed Sample
MC - Moisture Content
HP - Hand Penetrometer (UCS kPa)
VS - Vane Shear; P-Peak, R-Remouded (uncorrected kPa)
PBT - Plate Bearing Test

CLASSIFICATION SYMBOLS & SOIL DESCRIPTION
Based on Unified Classification System

MOISTURE
D - Dry
M - Moist
W - Wet

CONSISTENCY/ RELATIVE DENSITY

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

See Explanatory Notes for details of abbreviations & basis of descriptions.

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File: 304100928 BH28 1 OF 1

RMS LIB 40.3 EXTERNAL M6E REV1.3.GLB Log RTA EXCAVATION 304100928_GILLIESTON.GPJ <<DrawingFile>> 08/Feb/2023 14:16 10.03.00.09 Cardno M6E

Cardno Borehole Fieldsheet BH No: 01 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.17	Silty sand, with gravel, and trace organics. f-m grained. angular - subangular. light brown - grey @ 0.15 increase in gravel / sand content EOH @ 0.17m - potential services	Jar + Bag HA101_0.1		FILL

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 02

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand, with gravel, fine grained, sub rounded to subangular	Jar + Bag HA102_0.1		Fill
0.3		Jar + Bag HA102_0.3		
	EOH @ 0.3m Target Depth			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Borehole Fieldsheet BH No: 03

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.3	Silty sand, medium fine Grained trace Gravel, Dark brown	Jar/Bag HA103-0.1		Fill
	EOH @ 0.3 target depth Some trace orange Clay	Jar/Bag HA103-0.3		

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 04

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HD

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand, dark grey-brown, lots of organic material, medium grained, some anthropogenic material (soft & hard plastics).	Jar + Bag HA104_0.1		Fill
0.25m	Becoming gravelley w trace orange/grey clay	Jar + Bag HA104_0.3		
0.3m	EOH @ 0.3m			
	In garden Bed			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 05

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand with clay, brown - dark grey, m-f grained, orange-grey clay	Jar + Bag HA105_0.1		F:11
0.3		Jar + Bag HA105_0.3		
	EOH @ 0.3m TD			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 06

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.3m	Silty sand, m-f grained, br-dark br, with trace gravel, fe grained, angular-sub angular	Jar + Bag HA06_0.1 QA100 QC100		fill
	EOH @ 0.3m TD	Jar + Bag HA06_0.3		

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 07 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.16	Silty sand, trace gravel m-f. grained, light brown-grey	Jar + Bag HA107_0.1		f:1
	EOH @ 0.16m refusal (on brick?)			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 08 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.15	Silty sand, br-gy, f-grained	Jar + Bag	HA108_0.1	
	Becoming gravelley w trace of clay (or-br) & subrounded - subangular			f:11
0.3		Jar + Bag	HA108_0.3	
	EOH @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

F 3.05 Enviro BH Fieldsheet 01/14

Cardno

Borehole Fieldsheet BH No: 09

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand with gravel, dark br-gr, f-grained, subangular to angular gravel	Jar + bag	HA109_0.1	f:11
0.3m		Jar + bag	HA109_0.3	
	EOH @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 10 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HD

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand, br-gr, f-m grained with trace gravel, sub angular to subrounded	Jar + Bag HA110_0.1		FILL
0.3		Jar + Bag HA110_0.3		
	EOH@ 0.3m TD			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

F 3.05 Enviro BH Fieldsheet 01/14

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 11

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HD

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand, br-gr, m-f grained with trace gravel subangular - subrounded & trace clay - or-gr-br	Jar + Bag HA111_0.1		Fill
0.3m		Jar + Bag HA111_0.3		
	EOH @ 0.3m TD			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 112

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand, br-gr, m-f	Jar + Bag + QA200 QC200	HA112_0.1	
0.15	grained. Becoming gravelley subangular to angular			Fill
0.3		Jar + Bag	HA112_0.3	
	EOH @ 0.3m TD			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno Borehole Fieldsheet BH No: 13

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand, gr-brown, m-f grained	Jar + Bag HA13_0.1		F: 11
0.12	EOH @ 0.12 refusal (on concrete)			
	Note: in garden bed			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 14

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty clay with sand, m-h plasticity, m-f grained, dark grey-brown	Jar + Bag HA114-0.1		Fill
0.3		Jar + Bag HA114-0.3		
	EOH @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 15 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand, gr-br, m-f grained	Bag + Jar HA115_0.1		Fill
0.2	Becoming gravelley, angular to sub-angular	Jar + Bag HA115_0.3		
	EOH @ 0.28m refusal in gravel / rock			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

F 3.05 Enviro BH Fieldsheet 01/14

Cardno

Borehole Fieldsheet BH No: 16

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 25/01/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	~~Silty~~ Clayey silt, m-l plasticity, m-f grained, gr-br	Jar + Bag	HA116_0.1	
0.2				Fill
	Becoming gravelley silt with ~~trace~~ clay, dark gr-br silt, or-br-gr clay	Jar + Bag	HA116_0.3	
	EOH @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

FIELD BOREHOLE LOG SHEET

Hole No: HA201 **Sheet:** of

Client:
Project:
Location: Gilleston Heights Public School **Job No:** 30410092 8
Position: See site plan **Angle from Horizontal:** **Surface Elevation:**
Rig Type: HA **Mounting:** **Driller:** BC
Casing Diameter: **Contractor:**
Data Started: 3/02/23 **Date Completed:** **Logged By:** BC **Checked By:**

Drilling: Method	Drilling: Resistance	Drilling: Casing	Water	Sampling & Testing: Sample or Field Test	Sampling & Testing: DCP blows per (mm)	Depth (m)	Material Description: Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency / Relative Density	STRUCTURE & Other Observations
				HA201-0.1m Jar + Asb PID 0.1					TS Fill; Sandy gravelly SILT, LP, pale brown/grey, Fine grained SAND, Fine Sub rounded SA gravel, T organics (rootlets).	D		Plastics noted on surface & in first 0.1 m (stickers, food packaging) No odours Fill
				HA201-0.3, Jar + Ash PID 0.1					0.2 SILT; pale brown, Trace Fine grained SAND, Trace fine SR GVL	D		Fill
									0.3 EOH target depth			

METHOD
- EX Excavator bucket
- R Ripper
- HA Hand auger
- PT Push tube
- SON Sonic drilling
- AH Air hammer
- PS Percussion sampler
- AS Short spiral auger
- ADV Solid flight auger: V-Bit
- ADT Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller

PENETRATION
- VE Very Easy (No Resistance)
- E Easy
- F Firm
- H Hard
- VH Very Hard (Refusal)

WATER
- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS
- SPT - Standard Penetration Test
- HP - Hand/Pocket Penetrometer
- DCP - Dynamic Cone Penetrometer
- PSP - Perth Sand Penetrometer
- MC - Moisture Content
- PBT - Plate Bearing Test
- IMP - Borehole Impression Test
- PID - Photolonisation Detector
- VS - Vane Shear; P=Peak, R=Residual (uncorrected kPa)

SAMPLES
- B - Bulk disturbed sample
- D - Disturbed sample
- ES - Environmental sample
- U - Thin wall tube 'undisturbed'

MOISTURE
- D - Dry
- M - Moist
- W - Wet
- PL - Plastic limit
- LL - Liquid limit
- w - Moisture content

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

RELATIVE DENSITY
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

Cardno

FIELD BOREHOLE LOG SHEET

Hole No: HA202

Client:			
Project:			
Location:	**Job No:**	**Sheet:**	of
Position:	**Angle from Horizontal:**	**Surface Elevation:**	
Rig Type:	**Mounting:**	**Driller:**	
Casing Diameter:		**Contractor:**	
Data Started:	**Date Completed:**	**Logged By:**	**Checked By:**

Drilling			Water	Sampling & Testing		Depth (m)	Material Description					
Method	Resistance	Casing		Sample or Field Test	DCP blows per (mm)		Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency/ Relative Density	STRUCTURE & Other Observations
				HA202 0.1 T+Asb					TSF: Sandy gully SILT Pale brown/grey, Fgm SAND F-M SR SAND;	D		Brick cut 0.1m plastics on surface HA next to bin, old steel chair.
				Dup+TRIP 0.2ppm					0.15 AA No org			
				HA202 0.3m T+Asb					0.3 EOH target			
				PID 0.2ppm								

METHOD
- EX Excavator bucket
- R Ripper
- HA Hand auger
- PT Push tube
- SON Sonic drilling
- AH Air hammer
- PS Percussion sampler
- AS Short spiral auger
- AD/V Solid flight auger: V-Bit
- AD/T Solid flight auger: TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller

PENETRATION
- VE Very Easy (No Resistance)
- E Easy
- F Firm
- H Hard
- VH Very Hard (Refusal)

WATER
- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS
- SPT - Standard Penetration Test
- HP - Hand/Pocket Penetrometer
- DCP - Dynamic Cone Penetrometer
- PSP - Perth Sand Penetrometer
- MC - Moisture Content
- PBT - Plate Bearing Test
- IMP - Borehole Impression Test
- PID - Photoionisation Detector
- VS - Vane Shear; P=Peak, R=Residual (uncorrected kPa)

SAMPLES
- B - Bulk disturbed sample
- D - Disturbed sample
- ES - Environmental sample
- U - Thin wall tube 'undisturbed'

MOISTURE
- D - Dry
- M - Moist
- W - Wet
- PL - Plastic limit
- LL - Liquid limit
- w - Moisture content

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

RELATIVE DENSITY
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

Cardno

FIELD BOREHOLE LOG SHEET

Hole No: HA203

Sheet: of

Client:			
Project:			
Location:	**Job No:**		
Position:	**Angle from Horizontal:**	**Surface Elevation:**	
Rig Type:	**Mounting:**	**Driller:**	
Casing Diameter:		**Contractor:**	
Data Started:	**Date Completed:**	**Logged By:**	**Checked By:**

Drilling				Sampling & Testing			Material Description					
Method	Resistance	Casing	Water	Sample or Field Test	DCP blows per (mm)	Depth (m)	Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
				HA203/01 J+Asb PID 0.1					TS Fill, Sandy Silty Pale brown/grey Fgrn SAND, F-M SR-SA SWL Torg 0.2			
				HA203 0.3 J+Asb PID 03					No rocks AA - Torgs (rocks) 0.3			Fill
									EOH target			

METHOD

EX	Excavator bucket
R	Ripper
HA	Hand auger
PT	Push tube
SON	Sonic drilling
AH	Air hammer
PS	Percussion sampler
AS	Short spiral auger
AD/V	Solid flight auger: V-Bit
AD/T	Solid flight auger: TC-Bit
HFA	Hollow flight auger
WB	Washbore drilling
RR	Rock roller

PENETRATION

VE	Very Easy (No Resistance)
E	Easy
F	Firm
H	Hard
VH	Very Hard (Refusal)

WATER

- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS

SPT	-	Standard Penetration Test
HP	-	Hand/Pocket Penetrometer
DCP	-	Dynamic Cone Penetrometer
PSP	-	Perth Sand Penetrometer
MC	-	Moisture Content
PBT	-	Plate Bearing Test
IMP	-	Borehole Impression Test
PID	-	Photoionisation Detector
VS	-	Vane Shear; P=Peak, R=Resdual (uncorrected kPa)

SAMPLES

B	-	Bulk disturbed sample
D	-	Disturbed sample
ES	-	Environmental sample
U	-	Thin wall tube 'undisturbed'

MOISTURE

D	-	Dry
M	-	Moist
W	-	Wet
PL	-	Plastic limit
LL	-	Liquid limit
w	-	Moisture content

SOIL CONSISTENCY

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

RELATIVE DENSITY

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

Refer to explanatory notes for details of abbreviations and basis of descriptions

Cardno

FIELD BOREHOLE LOG SHEET

Hole No: HA204

Client:
Project:
Location:
Job No:
Sheet: of

Position:
Angle from Horizontal:
Surface Elevation:

Rig Type:
Mounting:
Driller:

Casing Diameter:
Contractor:

Date Started: 3/2/23 Date Completed:
Logged By: BC
Checked By:

Drilling				Sampling & Testing			Material Description					
Method	Resistance	Casing	Water	Sample or Field Test	DCP blows per (mm)	Depth (m)	Graphic Log	Classification	SOIL TYPE, plasticity or particle characteristic, colour, secondary and minor components ROCK TYPE, grain size and type, colour, fabric & texture, strength, weathering, defects and structure	Moisture Condition	Consistency Relative Density	STRUCTURE & Other Observations
				~~HA204~~					TS Fill; Sandy silty SILT;	D		Brick, tiles, wood + glass
				HA204					Fine grained SAND, F-M			noted to 0.15m
				0.1m					SR. SA gvL, Pale brown/grey.			Fill
				J + Asb					0.2 Torg			
				PID 0.1								
				HA204					AA; no odg			Fill
				0.3m								
				J + Asb					0.3			
				PID 0.2					0.5 EOH target			

METHOD
- EX Excavator bucket
- R Ripper
- HA Hand auger
- PT Push tube
- SON Sonic drilling
- AH Air hammer
- PS Percussion sampler
- AS Short spiral auger
- AD/V Solid flight auger; V-Bit
- AD/T Solid flight auger; TC-Bit
- HFA Hollow flight auger
- WB Washbore drilling
- RR Rock roller

PENETRATION
- VE Very Easy (No Resistance)
- E Easy
- F Firm
- H Hard
- VH Very Hard (Refusal)

WATER
- Water Level on Date shown
- water inflow
- water outflow

FIELD TESTS
- SPT - Standard Penetration Test
- HP - Hand/Pocket Penetrometer
- DCP - Dynamic Cone Penetrometer
- PSP - Perth Sand Penetrometer
- MC - Moisture Content
- PBT - Plate Bearing Test
- IMP - Borehole Impression Test
- PID - Photoionisation Detector
- VS - Vane Shear; P=Peak, R=Residual (uncorrected kPa)

SAMPLES
- B - Bulk disturbed sample
- D - Disturbed sample
- ES - Environmental sample
- U - Thin wall tube 'undisturbed'

MOISTURE
- D - Dry
- M - Moist
- W - Wet
- PL - Plastic limit
- LL - Liquid limit
- w - Moisture content

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

RELATIVE DENSITY
- VL - Very Loose
- L - Loose
- MD - Medium Dense
- D - Dense
- VD - Very Dense

Refer to explanatory notes for details of abbreviations and basis of descriptions

CARDNO (NSW/ACT) PTY LTD

Cardno Borehole Fieldsheet BH No: 301

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Sandy silt, brn-gr, trace organics, f-m grained sand, trace gravels, LP	HA301 - 0.1 QA110 QC110		Fill / Topsoil
0.3		HA301_0.3		
	HA end @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 302 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Silty sand, br, w gr, trace organics, f-m grained sand, trace gravels, LP	HA302_0.1		Fill
0.3		HA302_0.3		
	HA end @ 0.3 m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 303

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	Sandy silt, br wgr, trace organics, m grained sand, trace gravel, LP	HA303_0.1		Fill
0.3		HA303_0.3		
	HA and @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 304

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0	~~Silty sand~~	HA304	0.1	
0.1	Sandy silt, br w/gr, trace organics, f grained sand, trace gravel, LP			
0.3		HA304	0.3	
	HA end @ 0.3m TD			

Key: For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno Borehole Fieldsheet BH No: 305 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	Sandy silt with gravel, lor w/ gr, m grained sand, trace organics, LP	HA305_0.1		
~0.2m	Possible petrified wood, breaks apart when pressure applied, black w sparkles/ glittery visual in sun, slight wood-look grain, natural appearance no odour / staining	HA305_0.3		
	HA end @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 306

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	Sandy silt, br, m-f grained sand, trace organics, trace gravel, LP	HA306_0.1 HA306_0.3		
	HA end @ 0.3m TD Some anthropogenic material (plastic food wrappers			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 307

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.1	Sandy silt, br w/gr & yellow, trace organics (woodchips + rootlets), m-f grained sand, LP, trace gravel & clay	MA307_0.1		
	HA end @ 0.1 refusal on rock / gravel			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 308

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	sandy silt, br w/gs, trace organics, m-f grained - trace gravel LD	HA308_0.1 HA308_0.3		
	Bit end @ 0.3m TD			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

F 3.05 Enviro BH Fieldsheet 01/14

Notes:

Groundwater Observations:

Cardno Borehole Fieldsheet BH No: 309

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	Sandy silt, dark br, trace organics, m-f grained orange sand, trace clay, ^ AP,	HA309_0.1		
		HA309_0.3		
	HA end @ 0.3m TD			
	some anthropogenic material (nails)			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 310 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	Clayey silt, dark br, trace organics with trace gravel, m-h pl	HA310_0.1 HA310_0.3	0.1 0.3	
	BH end @ 0.3m TD			
	Trace anthropogenic material (tile)			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 311 Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:**
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3m	Silty gravel, angular - subangular, dark brown w/gr, trace organics, trace clay, m-pl	HA311_0.1 QA111 QC111 HA311_0.3		
	BH end @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 312

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	Sandy silt, dark br, w/gr;	HA312_0.1		
	Trace organics, m-c grained sand, trace gravel, HP	HA312_0.3		
	HA end @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 313

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	sandy silt, br w/ gr - yellow trace organics, m-grained sand, with gravel, LP	HA313_0.1		
		HA313_0.3		
	EOH @ 0.3m TD			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

F 3.05 Enviro BH Fieldsheet 01/14

Notes:

Groundwater Observations:

Cardno Borehole Fieldsheet BH No: 314

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	Silty sand, br w/ gr - or, trace organics, m grained sand with gravel like crushed rock (sandstone) LP, with clay, or-white, HP	HA314_0.1		
		HA314_0.3		
	EOH @ 0.3m TD			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

F 3.05 Enviro BH Fieldsheet 01/14

Notes:

Groundwater Observations:

Cardno Borehole Fieldsheet BH No: 315

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	Silty sand with clay, trace organics, brown with grey, m grained sand, h-pl clay, trace gravel	HA315_0.1		
		HA315_0.3		
	EOH @ 0.3m TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

F 3.05 Enviro BH Fieldsheet 01/14

Cardno

Borehole Fieldsheet BH No: HA3/6

Page: of

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:** HA
	Top of Casing:	**Drilling Method:** HA
Job No.: 304100928	**Inclination:**	**Logged/Checked:** CC

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F - Silty Sand, brown w grey, F-c g; Loose, w Clay orange-brown, L-MP, Trace g's, Cobble @ 0.2, Trace brick, Trace 0.1m roots & rootlets.	HA/6 -0.1 HA/6 -0.3		

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 317

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F- Silty sand, light brown-grey, F-C g, Loose, O.M, Trace tile, T g's, T; O.M	T/AB/> -0.1		
0.1	F- clayey Sandy silt, Dark brown, C-MP, O.M, T g's, Orange-brown clay.	T/AJ/> -0.3.		
	EOH @ 0.3 T.D.			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

F 3.05 Enviro BH Fieldsheet 01/14

Cardno Borehole Fieldsheet BH No: 318 Page: of

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:** HA
	Top of Casing:	**Drilling Method:** HA
Job No.: 304100928	**Inclination:**	**Logged/Checked:** CL

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F - Silty clay, dark brown, L-MP, Trace gs/ 0.M becoming grey-brown (A) 0.2, M, N/O	HA318 -0.1 HA318 -0.3		
0.3	EOH (A) 0.3 T.D.			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 319

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Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:** HA
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:** CC

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F - Sandy Clay, Orange-brown, L-mp Clay, F-c Sand, O.M w g's; N/O, M.	HA319 -0.1		
0.1	w sandstone)			
	F-Sandy silt, grey-brown LP, F sand, w g's, O.M N/O, M	HA320 -0.5		

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

F 3.05 Enviro BH Fieldsheet 01/14

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 320

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:** HA
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** HO

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	silty sand, br, f-m grained sand, ^ trace organics, trace cobbles, trace clay	HA320_QA112 QC112	0.1	
	or-br, m-pl, with gravel grey-brown towards base	HA320_	0.3	
	EOH @ 0.3 TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 321

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Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
Location: Gillieston Public	**Surface Level:**	**Drill Rig:** HA
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** 10/12/23
	Inclination:	**Logged/Checked:** CL

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F-sandy Silt, light brown, LP, F-M gSand, W g/I. D.M, D, N/O	HA321 -0.1 HA321 -0.3		
	EOH @ 0.3 T.D.			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Borehole Fieldsheet BH No: 322

Page: of

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
		Drill Rig: HA
Location: Gillieston Public	**Surface Level:**	**Drilling Method:**
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:** CL

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F- Silty Sand, brown-grey, F-M, w>PL, loose, O.M N/O, D.	HA322 -0.1		
	becoming dark brown @ 0.2	HA322 -0.3		
	EOH @ 0.3 T.D.			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

F 3.05 Enviro BH Fieldsheet 01/14

Notes:

Groundwater Observations:

Cardno Borehole Fieldsheet BH No: 323

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Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:**
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0-0.3	F-Silty sand, brown-grey, F-m, w gravels, loose, O.M, N/O, D	HA323_0.1 HA323_0.3		
	EOH @ 0.3 TD			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 324

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 10/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:** HA
	Inclination:	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F- Sandy Silt, brown, LP, F-m Sand, O.M, M/O, D. wg's	HA324 -0.1		
0.2	Silty Sand, brown grey, F-M g, loose, O.M, M/O, D, Trace Concrete, w/gs, Trace Clay, LP.	HA324 -0.3.		
0.3	EOH → T.D.			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 325

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Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:**
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F - silty Sand, brown, F-M, loose, w g's, O.M, D, N/O, Trace Plastic.	HA32W -0.1 QA113 QC113 HA32W -0.3		
0.3	EOH @ 0.3 T.D			

Key:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes

Notes:

Groundwater Observations:

Cardno

Borehole Fieldsheet BH No: 326

Page: 1 of 1

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:**
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
	F - Silty sand, brown, F-m loose, w g's, O.M, N/O, trace coal wash, trace anthropogenics (glass)	HA326	0.1	
		HA326	0.3	
	EOH @ 0.3 TD			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 327

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Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:**
	Inclination:	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F - Sandy silt, light brown, LP, F-m g Sand, W g/S. O.M, D, N/O	HA327 -0.1 HA327 -0.3		

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 328

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Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:**
	Inclination:	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F-Silty Sand, grey-brown, F-mg, wg's, loose, O.M, N/O/M, D, becoming brown @ 0.2, Trace plastic.	HA328 -0.1 HA328 -0.3		
0.3	EOH @ 0.3 T.D.			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

F 3.05 Enviro BH Fieldsheet 01/14

Cardno

Borehole Fieldsheet BH No: 329

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Project: Gillieston Public - DSI	**Position:**	**Date Drilled:** 30/2/23
Location: Gillieston Public	**Surface Level:**	**Drill Rig:** HA
	Top of Casing:	**Drilling Method:** HA
Job No.: 304100928	**Inclination:**	**Logged/Checked:** CL

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F- Clayey Sand, brown w orange, F-M, loose L-mP Clay, Corange-brown, D.M, trg's, M, N/O	HA329 -0.1 HA329 -0.2		
0.1	F-Sand, brown-grey F-M, ; mo, N/O T g's, T Plastic.	HA329 -0.3		
	EOH @ 0.3 T.D.			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno Borehole Fieldsheet BH No: 330 Page: of

Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
		Drill Rig:
Location: Gillieston Public	**Surface Level:**	**Drilling Method:**
	Top of Casing:	
Job No.: 304100928	**Inclination:**	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F - Sandy silt, brown LP, w Clay, D.M, M/D, M, Trace g's	HA330 -0.1 HA330 -0.3		

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Cardno

Borehole Fieldsheet BH No: 331

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Project: Gillieston Public - DSI	**Position:**	**Date Drilled:**
Location: Gillieston Public	**Surface Level:**	**Drill Rig:**
Job No.: 304100928	**Top of Casing:**	**Drilling Method:**
	Inclination:	**Logged/Checked:**

Depth (m bgl)	Description of Strata **Soil:** (FILL), description, classification, properties, features, colour, strength, moisture condition, other features, visual or olfactory contam **Rock:** type, weathering, colour, jointing, strength, other features	Samples	PID (ppm) / Contam Ranking	Remarks
0.0	F-silty Sand, F-M, brown, w<g's 0.M, Trace metal & brick, PACM frag @ 0.2, Service @ 0.2m @ Eastern edge of hole.	HA331_0.1 HA331_0.2 HA331 0.2 PACM HA331 0.3	-Asb	
	Fo H @ 0.3.			

Key:	Notes:	Groundwater Observations:
For explantion of abbreviations and symbols, refer to Cardno UCS or Rock Notes		

Appendix I LABORATORY REPORTS AND COC DOCUMENTS

Request for Laboratory Services and Chain of Custody Form

Delivery Dock 2, 179 Magowar Road, GIRRAWEEN, NSW 2145 Ph: +61 2 9900 8421 Email: EnviroSampleNSW@eurofins.com

Laboratory Section

Received Date: _____ Received By: _____ Cooling Method. ☐ Ice ☐ Icepack ☐ None Samples intact: ☐ Yes ☐ No

Logged-in Date: _____ Time of Receipt: _____ Cooler Sealed: ☐ Yes ☐ No ☐ N/A Temperature. ☐ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #:

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: _____ Urgent TA requires lab approval

Notes:

Client Information | PO No.: | Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: | **After Hours Phone Number:**

Fax Number: | **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: TRH, BTEXN, PAH, 8Metals, PCB, OCP, OPP	Asbestos (presence/absence)	PFAS (short suite)	Asbestos quantification (NEPM)	Ph/PhFOX	TRH, BTEXN, PAH, 8Metals	BTEX
	QC100	0.5	19/12/2022	AM/PM	Soil	Jar							
	QC200	0.5	19/12/2022	AM/PM	Soil	Jar	X						
	QC300	0.5	20/12/2022	AM/PM	Soil	Jar							
	QC400	0.2	20/12/2022	AM/PM	Soil	Jar	X						
	QC500	0.1	21/12/2022	AM/PM	Soil	Jar							
	QC600	0.2	21/12/2022	AM/PM	Soil	Jar							
	QC700	0.2	21/12/2022	AM/PM	Soil	Jar							

Sampled By: Henry Ongerth **Date:** 21/12/2022

Relinquished By: Michael Koerner **Date:** 22/12/2022. **Time:** 12:51 PM

Report # 957232

Received 20/1/2023

Stantec Australia Pty Ltd
Level 22, 570 Bourke Street
Melbourne
VIC 3000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Henry Ongerth**

Report **957232-S**
Project name 304100928
Project ID 304100928
Received Date Jan 20, 2023

Client Sample ID			**QC200**	[G01]**QC400**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S23-Ja0027496**	**S23-Ja0027497**
Date Sampled			**Dec 19, 2022**	**Dec 20, 2022**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	46
TRH C15-C28	50	mg/kg	< 50	350
TRH C29-C36	50	mg/kg	< 50	230
TRH C10-C36 (Total)	50	mg/kg	< 50	626
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	75
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	75
TRH >C16-C34	100	mg/kg	< 100	490
TRH >C34-C40	100	mg/kg	< 100	130
TRH >C10-C40 (total)*	100	mg/kg	< 100	695
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	121	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	0.6

Client Sample ID			QC200	[G01]QC400
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ja0027496	S23-Ja0027497
Date Sampled			Dec 19, 2022	Dec 20, 2022
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	0.6
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	1.2
2-Fluorobiphenyl (surr.)	1	%	99	104
p-Terphenyl-d14 (surr.)	1	%	92	100
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.5
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.5
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.5
a-HCH	0.05	mg/kg	< 0.05	< 0.5
Aldrin	0.05	mg/kg	< 0.05	< 0.5
b-HCH	0.05	mg/kg	< 0.05	< 0.5
d-HCH	0.05	mg/kg	< 0.05	< 0.5
Dieldrin	0.05	mg/kg	< 0.05	< 0.5
Endosulfan I	0.05	mg/kg	< 0.05	< 0.5
Endosulfan II	0.05	mg/kg	< 0.05	< 0.5
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.5
Endrin	0.05	mg/kg	< 0.05	< 0.5
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.5
Endrin ketone	0.05	mg/kg	< 0.05	< 0.5
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.5
Heptachlor	0.05	mg/kg	< 0.05	< 0.5
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.5
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.5
Methoxychlor	0.05	mg/kg	< 0.05	< 0.5
Toxaphene	0.5	mg/kg	< 0.5	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 1
Dibutylchlorendate (surr.)	1	%	148	94
Tetrachloro-m-xylene (surr.)	1	%	94	98
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.5
Bolstar	0.2	mg/kg	< 0.2	< 0.5
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.5
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.5
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.5
Coumaphos	2	mg/kg	< 2	< 5
Demeton-S	0.2	mg/kg	< 0.2	< 0.5
Demeton-O	0.2	mg/kg	< 0.2	< 0.5
Diazinon	0.2	mg/kg	< 0.2	< 0.5
Dichlorvos	0.2	mg/kg	< 0.2	< 0.5

Client Sample ID			QC200	[G01]QC400
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ja0027496	S23-Ja0027497
Date Sampled			Dec 19, 2022	Dec 20, 2022
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Dimethoate	0.2	mg/kg	< 0.2	< 0.5
Disulfoton	0.2	mg/kg	< 0.2	< 0.5
EPN	0.2	mg/kg	< 0.2	< 0.5
Ethion	0.2	mg/kg	< 0.2	< 0.5
Ethoprop	0.2	mg/kg	< 0.2	< 0.5
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.5
Fenitrothion	0.2	mg/kg	< 0.2	< 0.5
Fensulfothion	0.2	mg/kg	< 0.2	< 0.5
Fenthion	0.2	mg/kg	< 0.2	< 0.5
Malathion	0.2	mg/kg	< 0.2	< 0.5
Merphos	0.2	mg/kg	< 0.2	< 0.5
Methyl parathion	0.2	mg/kg	< 0.2	< 0.5
Mevinphos	0.2	mg/kg	< 0.2	< 0.5
Monocrotophos	2	mg/kg	< 2	< 5
Naled	0.2	mg/kg	< 0.2	< 0.5
Omethoate	2	mg/kg	< 2	< 5
Phorate	0.2	mg/kg	< 0.2	< 0.5
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.5
Pyrazophos	0.2	mg/kg	< 0.2	< 0.5
Ronnel	0.2	mg/kg	< 0.2	< 0.5
Terbufos	0.2	mg/kg	< 0.2	< 0.5
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.5
Tokuthion	0.2	mg/kg	< 0.2	< 0.5
Trichloronate	0.2	mg/kg	< 0.2	< 0.5
Triphenylphosphate (surr.)	1	%	132	63
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	< 1
Aroclor-1221	0.1	mg/kg	< 0.1	< 1
Aroclor-1232	0.1	mg/kg	< 0.1	< 1
Aroclor-1242	0.1	mg/kg	< 0.1	< 1
Aroclor-1248	0.1	mg/kg	< 0.1	< 1
Aroclor-1254	0.1	mg/kg	< 0.1	< 1
Aroclor-1260	0.1	mg/kg	< 0.1	< 1
Total PCB*	0.1	mg/kg	< 0.1	< 1
Dibutylchlorendate (surr.)	1	%	148	94
Tetrachloro-m-xylene (surr.)	1	%	94	98
Heavy Metals				
Arsenic	2	mg/kg	< 2	6.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	13
Copper	5	mg/kg	< 5	19
Lead	5	mg/kg	11	320
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	10
Zinc	5	mg/kg	< 5	250
% Moisture	1	%	19	8.4

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 20, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 20, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 20, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jan 20, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Jan 20, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Jan 20, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Jan 20, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jan 20, 2023	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jan 20, 2023	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	Jan 20, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Stantec Australia Pty Ltd (NSW/ACT)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name: 304100928
Project ID: 304100928

Order No.:
Report #: 957232
Phone:
Fax:

Received: Jan 20, 2023 1:00 PM
Due: Jan 23, 2023
Priority: 1 Day
Contact Name: Henry Ongerth

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail						HOLD	Eurofins Suite B15	Moisture Set	Eurofins Suite B7
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	QC200	Dec 19, 2022		Soil	S23-Ja0027496		X	X	X
2	QC400	Dec 20, 2022		Soil	S23-Ja0027497		X	X	X
3	QC100	Dec 20, 2022		Soil	S23-Ja0027498	X			
4	QC300	Dec 20, 2022		Soil	S23-Ja0027499	X			
5	QC500	Dec 20, 2022		Soil	S23-Ja0027500	X			
6	QC600	Dec 20, 2022		Soil	S23-Ja0027501	X			
7	QC700	Dec 20, 2022		Soil	S23-Ja0027502	X			
Test Counts						5	2	2	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	105			70-130	Pass	
TRH C10-C14	%	77			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
TRH >C10-C16	%	75			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	109			70-130	Pass	
Toluene	%	82			70-130	Pass	
Ethylbenzene	%	88			70-130	Pass	
m&p-Xylenes	%	116			70-130	Pass	
o-Xylene	%	109			70-130	Pass	
Xylenes - Total*	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	
Acenaphthylene	%	96			70-130	Pass	
Anthracene	%	94			70-130	Pass	
Benz(a)anthracene	%	104			70-130	Pass	
Benzo(a)pyrene	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	%	102			70-130	Pass	
Benzo(g.h.i)perylene	%	108			70-130	Pass	
Benzo(k)fluoranthene	%	107			70-130	Pass	
Chrysene	%	103			70-130	Pass	
Dibenz(a.h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	101			70-130	Pass	
Fluorene	%	103			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	99			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
Phenanthrene	%	106			70-130	Pass	
Pyrene	%	104			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	80			70-130	Pass	
4.4'-DDD	%	77			70-130	Pass	
4.4'-DDE	%	83			70-130	Pass	
4.4'-DDT	%	88			70-130	Pass	
a-HCH	%	79			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	%	79			70-130	Pass	
b-HCH	%	93			70-130	Pass	
d-HCH	%	83			70-130	Pass	
Dieldrin	%	81			70-130	Pass	
Endosulfan I	%	80			70-130	Pass	
Endosulfan II	%	76			70-130	Pass	
Endosulfan sulphate	%	82			70-130	Pass	
Endrin	%	91			70-130	Pass	
Endrin aldehyde	%	79			70-130	Pass	
Endrin ketone	%	79			70-130	Pass	
g-HCH (Lindane)	%	84			70-130	Pass	
Heptachlor	%	85			70-130	Pass	
Heptachlor epoxide	%	80			70-130	Pass	
Hexachlorobenzene	%	80			70-130	Pass	
Methoxychlor	%	84			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	98			70-130	Pass	
Dimethoate	%	101			70-130	Pass	
Ethion	%	88			70-130	Pass	
Fenitrothion	%	88			70-130	Pass	
Methyl parathion	%	88			70-130	Pass	
Mevinphos	%	115			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	76			70-130	Pass	
Aroclor-1260	%	104			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	114			80-120	Pass	
Cadmium	%	120			80-120	Pass	
Chromium	%	111			80-120	Pass	
Copper	%	113			80-120	Pass	
Lead	%	116			80-120	Pass	
Mercury	%	119			80-120	Pass	
Nickel	%	111			80-120	Pass	
Zinc	%	105			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Ja0026335	NCP	%	81			70-130	Pass	
TRH C10-C14	S23-Ja0020389	NCP	%	73			70-130	Pass	
TRH C6-C10	S23-Ja0026335	NCP	%	81			70-130	Pass	
TRH >C10-C16	S23-Ja0025160	NCP	%	94			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S23-Ja0026335	NCP	%	98			70-130	Pass	
Toluene	S23-Ja0026335	NCP	%	94			70-130	Pass	
Ethylbenzene	S23-Ja0026335	NCP	%	74			70-130	Pass	
m&p-Xylenes	S23-Ja0026335	NCP	%	97			70-130	Pass	
o-Xylene	S23-Ja0026335	NCP	%	92			70-130	Pass	
Xylenes - Total*	S23-Ja0026335	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	S23-Ja0026335	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Ja0026335	NCP	%	100			75-125	Pass	
Cadmium	S23-Ja0026335	NCP	%	105			75-125	Pass	
Chromium	S23-Ja0026335	NCP	%	94			75-125	Pass	
Copper	S23-Ja0026335	NCP	%	93			75-125	Pass	
Lead	S23-Ja0026335	NCP	%	97			75-125	Pass	
Mercury	S23-Ja0026335	NCP	%	102			75-125	Pass	
Nickel	S23-Ja0026335	NCP	%	96			75-125	Pass	
Zinc	S23-Ja0026335	NCP	%	89			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	N23-Ja0017036	NCP	%	104			70-130	Pass	
Acenaphthylene	N23-Ja0017036	NCP	%	105			70-130	Pass	
Anthracene	N23-Ja0017036	NCP	%	92			70-130	Pass	
Benz(a)anthracene	N23-Ja0017036	NCP	%	91			70-130	Pass	
Benzo(a)pyrene	N23-Ja0017036	NCP	%	109			70-130	Pass	
Benzo(b&j)fluoranthene	N23-Ja0017036	NCP	%	97			70-130	Pass	
Benzo(g.h.i)perylene	N23-Ja0017036	NCP	%	98			70-130	Pass	
Benzo(k)fluoranthene	N23-Ja0017036	NCP	%	98			70-130	Pass	
Chrysene	N23-Ja0017036	NCP	%	70			70-130	Pass	
Dibenz(a.h)anthracene	N23-Ja0017036	NCP	%	100			70-130	Pass	
Fluoranthene	N23-Ja0017036	NCP	%	105			70-130	Pass	
Fluorene	N23-Ja0017036	NCP	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	N23-Ja0017036	NCP	%	97			70-130	Pass	
Naphthalene	N23-Ja0017036	NCP	%	105			70-130	Pass	
Phenanthrene	N23-Ja0017036	NCP	%	96			70-130	Pass	
Pyrene	N23-Ja0017036	NCP	%	107			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ja0024807	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S23-Ja0023561	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-Ja0023561	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-Ja0023561	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S23-Ja0024807	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S23-Ja0023561	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S23-Ja0023561	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S23-Ja0023561	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ja0024807	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S23-Ja0024807	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S23-Ja0024807	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S23-Ja0024807	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S23-Ja0024807	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S23-Ja0024807	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Ja0024807	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S23-Ja0016450	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S23-Ja0016450	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S23-Ja0028009	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S23-Ja0028009	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S23-Ja0028009	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S23-Ja0026811	NCP	mg/kg	7.3	8.3	12	30%	Pass	
Cadmium	S23-Ja0026811	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S23-Ja0026811	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	S23-Ja0026811	NCP	mg/kg	14	24	52	30%	Fail	Q15
Lead	S23-Ja0026811	NCP	mg/kg	20	22	9.8	30%	Pass	
Mercury	S23-Ja0026811	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S23-Ja0026811	NCP	mg/kg	11	19	49	30%	Fail	Q15
Zinc	S23-Ja0026811	NCP	mg/kg	130	160	20	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S23-Ja0027447	NCP	%	3.2	4.5	36	30%	Fail	Q15
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S23-Ja0030906	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S23-Ja0030906	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S23-Ja0030906	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Hannah Mawbey	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928**
Order Number	**304100928**
Samples	46

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	**SE241126 R0**
Date Received	21/12/2022
Date Reported	13/1/2023

COMMENTS

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

% Clay subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Report No: CE163795
No respirable fibres detected in all soil samples using trace analysis technique.
Samples # 2,5,9,10,14,19-20,27,31,34,38,42-43 : A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures due to large volume. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES

Bennet LO
Senior Chemist

Dong LIANG
Metals/Inorganics Team Leader

Huong CRAWFORD
Production Manager

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

VOC's in Soil [AN433] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH03_1.3-1.5 SOIL - 19/12/2022 SE241126.004	BH05_1.0 SOIL - 19/12/2022 SE241126.006	BH06_0.2 SOIL - 19/12/2022 SE241126.008
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010	BH07_1.5 SOIL - 19/12/2022 SE241126.011	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH27_1.5 SOIL - 19/12/2022 SE241126.016	BH28_0.2 SOIL - 19/12/2022 SE241126.017	BH28_1.0 SOIL - 19/12/2022 SE241126.018
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH08_0.5 SOIL - 20/12/2022 SE241126.021	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH14_1.3 SOIL - 20/12/2022 SE241126.023	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.1

VOC's in Soil [AN433] Tested: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH21_0.8 SOIL - 21/12/2022 SE241126.030	BH11_0.1 SOIL - 21/12/2022 SE241126.032	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH20_1.5 SOIL - 21/12/2022 SE241126.035
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
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040	BH19_0.5 SOIL - 21/12/2022 SE241126.041
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH16_0.2 SOIL - 21/12/2022 SE241126.042	BH17_0.9 SOIL - 21/12/2022 SE241126.044	TB SOIL - 21/12/2022 SE241126.045	TS SOIL - 21/12/2022 SE241126.046
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	[120%]
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	[104%]
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	[103%]
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	[105%]
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	[103%]
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	-
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	-
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	-

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH03_1.3-1.5 SOIL - 19/12/2022 SE241126.004	BH05_1.0 SOIL - 19/12/2022 SE241126.006	BH06_0.2 SOIL - 19/12/2022 SE241126.008
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010	BH07_1.5 SOIL - 19/12/2022 SE241126.011	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH27_1.5 SOIL - 19/12/2022 SE241126.016	BH28_0.2 SOIL - 19/12/2022 SE241126.017	BH28_1.0 SOIL - 19/12/2022 SE241126.018
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH08_0.5 SOIL - 20/12/2022 SE241126.021	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH14_1.3 SOIL - 20/12/2022 SE241126.023	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH21_0.8 SOIL - 21/12/2022 SE241126.030	BH11_0.1 SOIL - 21/12/2022 SE241126.032	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH20_1.5 SOIL - 21/12/2022 SE241126.035
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040	BH19_0.5 SOIL - 21/12/2022 SE241126.041
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH16_0.2 SOIL - 21/12/2022 SE241126.042	BH17_0.9 SOIL - 21/12/2022 SE241126.044
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH03_1.3-1.5 SOIL - 19/12/2022 SE241126.004	BH05_1.0 SOIL - 19/12/2022 SE241126.006	BH06_0.2 SOIL - 19/12/2022 SE241126.008
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	**82**
TRH C37-C40	mg/kg	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	**110**
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	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010	BH07_1.5 SOIL - 19/12/2022 SE241126.011	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013
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	**53**	**62**
TRH C37-C40	mg/kg	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	**93**
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	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH27_1.5 SOIL - 19/12/2022 SE241126.016	BH28_0.2 SOIL - 19/12/2022 SE241126.017	BH28_1.0 SOIL - 19/12/2022 SE241126.018
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	**52**	<45
TRH C37-C40	mg/kg	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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH08_0.5 SOIL - 20/12/2022 SE241126.021	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH14_1.3 SOIL - 20/12/2022 SE241126.023	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026
TRH C10-C14	mg/kg	20	<20	<20	<20	**44**	**28**
TRH C15-C28	mg/kg	45	<45	**130**	<45	**270**	**240**
TRH C29-C36	mg/kg	45	<45	**130**	<45	**150**	**130**
TRH C37-C40	mg/kg	100	-	<100	-	<100	<100
TRH >C10-C16	mg/kg	25	<25	**26**	<25	**63**	**41**
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	**26**	<25	**63**	**41**
TRH >C16-C34 (F3)	mg/kg	90	<90	**230**	<90	**380**	**330**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	**260**	<110	**470**	**400**
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	**250**	<210	**440**	**370**

PARAMETER	UOM	LOR	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH21_0.8 SOIL - 21/12/2022 SE241126.030	BH11_0.1 SOIL - 21/12/2022 SE241126.032	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH20_1.5 SOIL - 21/12/2022 SE241126.035
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**55**	<45	**94**	**86**	<45
TRH C29-C36	mg/kg	45	**60**	**53**	**110**	**65**	<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	**100**	<90	**180**	**130**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**110**	<110	**210**	**150**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040	BH19_0.5 SOIL - 21/12/2022 SE241126.041
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**60**	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	**71**	<45	**54**	<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	**120**	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**130**	<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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH16_0.2 SOIL - 21/12/2022 SE241126.042	BH17_0.9 SOIL - 21/12/2022 SE241126.044
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	**59**	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH03_1.3-1.5 SOIL - 19/12/2022 SE241126.004	BH05_1.0 SOIL - 19/12/2022 SE241126.006	BH06_0.2 SOIL - 19/12/2022 SE241126.008
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	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010	BH07_1.5 SOIL - 19/12/2022 SE241126.011	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013
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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH27_1.5 SOIL - 19/12/2022 SE241126.016	BH28_0.2 SOIL - 19/12/2022 SE241126.017	BH28_1.0 SOIL - 19/12/2022 SE241126.018
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	**0.2**	**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	BH08_0.5 SOIL - 20/12/2022 SE241126.021	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH14_1.3 SOIL - 20/12/2022 SE241126.023	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	**0.2**	**0.1**
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	**0.4**	**0.2**
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	**0.5**	**0.5**
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	**0.8**	**0.8**
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	**0.1**	**0.1**
Fluoranthene	mg/kg	0.1	<0.1	**0.2**	<0.1	**0.7**	**0.7**
Pyrene	mg/kg	0.1	<0.1	**0.2**	<0.1	**0.7**	**0.6**
Benzo(a)anthracene	mg/kg	0.1	<0.1	**0.2**	<0.1	**0.5**	**0.4**
Chrysene	mg/kg	0.1	<0.1	**0.2**	<0.1	**0.5**	**0.4**
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	**0.2**	<0.1	**0.7**	**0.5**
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	**0.2**	**0.2**
Benzo(a)pyrene	mg/kg	0.1	<0.1	**0.1**	<0.1	**0.6**	**0.4**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	**0.1**	<0.1	**0.5**	**0.2**
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	**0.5**	**0.2**
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	**0.9**	**0.5**
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	**0.9**	**0.6**
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	**0.2**	<0.2	**0.9**	**0.6**
Total PAH (18)	mg/kg	0.8	<0.8	**1.5**	<0.8	**6.9**	**5.3**
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	**1.5**	<0.8	**6.1**	**4.6**

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH21_0.8 SOIL - 21/12/2022 SE241126.030	BH11_0.1 SOIL - 21/12/2022 SE241126.032	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH20_1.5 SOIL - 21/12/2022 SE241126.035
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	<0.1	<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	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040	BH19_0.5 SOIL - 21/12/2022 SE241126.041
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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH16_0.2 SOIL - 21/12/2022 SE241126.042	BH17_0.9 SOIL - 21/12/2022 SE241126.044
Naphthalene	mg/kg	0.1	<0.1	<0.1
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	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.1**	<0.1
Pyrene	mg/kg	0.1	**0.1**	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH06_0.2 SOIL - 19/12/2022 SE241126.008	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010
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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH28_0.2 SOIL - 19/12/2022 SE241126.017
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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH11_0.1 SOIL - 21/12/2022 SE241126.032
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	**0.6**	**0.7**	<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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040
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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH16_0.2 SOIL - 21/12/2022 SE241126.042
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2
Endrin	mg/kg	0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1
Isodrin	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1
Total OC VIC EPA	mg/kg	1	<1

OP Pesticides in Soil [AN420] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH06_0.2 SOIL - 19/12/2022 SE241126.008	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010
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	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH28_0.2 SOIL - 19/12/2022 SE241126.017
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	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH11_0.1 SOIL - 21/12/2022 SE241126.032
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

OP Pesticides in Soil [AN420] Tested: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040
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	BH16_0.2 SOIL - 21/12/2022 SE241126.042
Dichlorvos	mg/kg	0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2
Malathion	mg/kg	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2
Methidathion	mg/kg	0.5	<0.5
Ethion	mg/kg	0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7

PCBs in Soil [AN420] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH06_0.2 SOIL - 19/12/2022 SE241126.008	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010
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	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH28_0.2 SOIL - 19/12/2022 SE241126.017
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_0.2 SOIL - 20/12/2022 SE241126.022	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH11_0.1 SOIL - 21/12/2022 SE241126.032
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: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040
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	BH16_0.2 SOIL - 21/12/2022 SE241126.042
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

pH in soil (1:5) [AN101] Tested: 5/1/2023

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH05_1.5 SOIL - 19/12/2022 SE241126.007	BH14_1.5 SOIL - 20/12/2022 SE241126.024	BH17_0.9 SOIL - 21/12/2022 SE241126.044
pH	pH Units	0.1	**5.4**	**4.8**	**5.0**	**5.2**
pH (CaCl2)*	pH Units	0.1	**4.1**	**4.0**	**3.9**	**4.0**

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) [AN122] Tested: 9/1/2023

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH05_1.5 SOIL - 19/12/2022 SE241126.007	BH14_1.5 SOIL - 20/12/2022 SE241126.024	BH17_0.9 SOIL - 21/12/2022 SE241126.044
Exchangeable Calcium, Ca	mg/kg	2	130	270	47	33
Exchangeable Calcium, Ca	meq/100g	0.01	0.65	1.4	0.24	0.16
Exchangeable Calcium Percentage*	%	0.1	38.9	22.2	6.6	4.5
Exchangeable Potassium, K	mg/kg	2	140	240	140	130
Exchangeable Potassium, K	meq/100g	0.01	0.36	0.61	0.35	0.33
Exchangeable Potassium Percentage*	%	0.1	21.4	10.0	9.7	9.2
Exchangeable Magnesium, Mg	mg/kg	2	74	480	300	310
Exchangeable Magnesium, Mg	meq/100g	0.02	0.60	3.9	2.5	2.5
Exchangeable Magnesium Percentage*	%	0.1	35.9	64.0	68.8	69.6
Exchangeable Sodium, Na	mg/kg	2	15	55	120	140
Exchangeable Sodium, Na	meq/100g	0.01	0.07	0.24	0.54	0.60
Exchangeable Sodium Percentage*	%	0.1	3.9	3.9	15.0	16.6
Cation Exchange Capacity	meq/100g	0.02	1.7	6.1	3.6	3.6

Field pH for Acid Sulphate Soil [AN104] Tested: 3/1/2023

PARAMETER	UOM	LOR	BH03_0.8-1.0 SOIL - 19/12/2022 SE241126.003	BH05_1.0 SOIL - 19/12/2022 SE241126.006	BH05_1.5 SOIL - 19/12/2022 SE241126.007	BH28_1.0 SOIL - 19/12/2022 SE241126.018	BH08_0.5 SOIL - 20/12/2022 SE241126.021
pHf	pH Units	-	5.0	4.7	4.8	4.7	5.3
pHfox	pH Units	-	4.7	4.3	4.1	4.3	4.0
Reaction Rate (pHfox)*	No unit	-	1	1	1	1	1
pH Difference*	pH Units	-10	0.3	0.3	0.8	0.4	1.2

PARAMETER	UOM	LOR	BH14_1.3 SOIL - 20/12/2022 SE241126.023	BH15_1.4 SOIL - 20/12/2022 SE241126.028	BH19_0.5 SOIL - 21/12/2022 SE241126.041
pHf	pH Units	-	5.1	5.0	7.7
pHfox	pH Units	-	4.8	4.2	6.7
Reaction Rate (pHfox)*	No unit	-	1	1	1
pH Difference*	pH Units	-10	0.2	0.7	1.0

TOC in Soil [AN188] Tested: 6/1/2023

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH05_1.5 SOIL - 19/12/2022 SE241126.007	BH14_1.5 SOIL - 20/12/2022 SE241126.024	BH17_0.9 SOIL - 21/12/2022 SE241126.044
Total Organic Carbon	%w/w	0.05	**0.93**	**0.72**	**0.12**	**0.08**

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH03_1.3-1.5 SOIL - 19/12/2022 SE241126.004	BH05_1.0 SOIL - 19/12/2022 SE241126.006	BH05_1.5 SOIL - 19/12/2022 SE241126.007
Arsenic, As	mg/kg	1	7	3	4	10	-
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	-
Chromium, Cr	mg/kg	0.5	10	6.0	9.2	21	-
Copper, Cu	mg/kg	0.5	<0.5	0.5	0.9	<0.5	-
Lead, Pb	mg/kg	1	8	6	6	10	-
Nickel, Ni	mg/kg	0.5	1.1	1.5	0.8	0.9	-
Zinc, Zn	mg/kg	2	3.2	3.2	5.5	7.9	-
Iron, Fe	mg/kg	50	24000	-	-	-	29000

PARAMETER	UOM	LOR	BH06_0.2 SOIL - 19/12/2022 SE241126.008	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010	BH07_1.5 SOIL - 19/12/2022 SE241126.011	BH26_0.2 SOIL - 19/12/2022 SE241126.012
Arsenic, As	mg/kg	1	6	10	11	5	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	7.3	15	16	17	5.8
Copper, Cu	mg/kg	0.5	4.5	1.6	<0.5	1.0	2.3
Lead, Pb	mg/kg	1	16	10	7	6	9
Nickel, Ni	mg/kg	0.5	2.5	2.5	1.6	0.6	1.8
Zinc, Zn	mg/kg	2	26	11	7.9	8.2	14
Iron, Fe	mg/kg	50	-	-	-	-	-

PARAMETER	UOM	LOR	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH27_1.5 SOIL - 19/12/2022 SE241126.016	BH28_0.2 SOIL - 19/12/2022 SE241126.017
Arsenic, As	mg/kg	1	2	1	1	4	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	2.8	4.1	4.2	8.1	3.8
Copper, Cu	mg/kg	0.5	2.5	2.2	2.0	<0.5	2.3
Lead, Pb	mg/kg	1	7	10	11	6	9
Nickel, Ni	mg/kg	0.5	1.2	1.4	1.5	2.0	1.4
Zinc, Zn	mg/kg	2	18	5.2	6.0	2.0	14
Iron, Fe	mg/kg	50	-	-	-	-	-

PARAMETER	UOM	LOR	BH28_1.0 SOIL - 19/12/2022 SE241126.018	BH08_0.5 SOIL - 20/12/2022 SE241126.021	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH14_1.3 SOIL - 20/12/2022 SE241126.023	BH14_1.5 SOIL - 20/12/2022 SE241126.024
Arsenic, As	mg/kg	1	10	8	9	8	-
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	-
Chromium, Cr	mg/kg	0.5	4.6	21	14	7.2	-
Copper, Cu	mg/kg	0.5	<0.5	0.9	12	0.9	-
Lead, Pb	mg/kg	1	6	10	380	17	-
Nickel, Ni	mg/kg	0.5	<0.5	1.6	7.7	<0.5	-
Zinc, Zn	mg/kg	2	2.3	8.6	230	9.2	-
Iron, Fe	mg/kg	50	-	-	-	-	32000

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/12/2022 (continued)

PARAMETER	UOM	LOR	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH21_0.8 SOIL - 21/12/2022 SE241126.030	BH11_0.1 SOIL - 21/12/2022 SE241126.032
Arsenic, As	mg/kg	1	5	7	6	9	9
Cadmium, Cd	mg/kg	0.3	0.3	0.4	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	14	13	25	17
Copper, Cu	mg/kg	0.5	19	16	2.6	<0.5	5.4
Lead, Pb	mg/kg	1	380	490	9	5	26
Nickel, Ni	mg/kg	0.5	11	11	2.4	0.9	4.8
Zinc, Zn	mg/kg	2	260	290	15	7.9	71
Iron, Fe	mg/kg	50	-	-	-	-	-

PARAMETER	UOM	LOR	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH20_1.5 SOIL - 21/12/2022 SE241126.035	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039
Arsenic, As	mg/kg	1	6	8	5	5	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	12	13	10	4.3	6.9
Copper, Cu	mg/kg	0.5	3.8	<0.5	1.7	1.3	3.1
Lead, Pb	mg/kg	1	42	6	10	16	20
Nickel, Ni	mg/kg	0.5	2.4	<0.5	2.1	1.0	1.8
Zinc, Zn	mg/kg	2	39	2.8	10	15	19
Iron, Fe	mg/kg	50	-	-	-	-	-

PARAMETER	UOM	LOR	BH19_0.2 SOIL - 21/12/2022 SE241126.040	BH19_0.5 SOIL - 21/12/2022 SE241126.041	BH16_0.2 SOIL - 21/12/2022 SE241126.042	BH17_0.9 SOIL - 21/12/2022 SE241126.044
Arsenic, As	mg/kg	1	6	12	5	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	10	19	11	22
Copper, Cu	mg/kg	0.5	6.0	2.2	6.3	<0.5
Lead, Pb	mg/kg	1	15	10	18	4
Nickel, Ni	mg/kg	0.5	5.9	7.0	5.3	<0.5
Zinc, Zn	mg/kg	2	53	39	67	2.3
Iron, Fe	mg/kg	50	-	-	-	6200

Mercury in Soil [AN312] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH03_1.3-1.5 SOIL - 19/12/2022 SE241126.004	BH05_1.0 SOIL - 19/12/2022 SE241126.006	BH06_0.2 SOIL - 19/12/2022 SE241126.008
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010	BH07_1.5 SOIL - 19/12/2022 SE241126.011	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH27_1.5 SOIL - 19/12/2022 SE241126.016	BH28_0.2 SOIL - 19/12/2022 SE241126.017	BH28_1.0 SOIL - 19/12/2022 SE241126.018
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH08_0.5 SOIL - 20/12/2022 SE241126.021	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH14_1.3 SOIL - 20/12/2022 SE241126.023	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026
Mercury	mg/kg	0.05	<0.05	**0.06**	**0.06**	**0.06**	**0.05**

PARAMETER	UOM	LOR	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH21_0.8 SOIL - 21/12/2022 SE241126.030	BH11_0.1 SOIL - 21/12/2022 SE241126.032	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH20_1.5 SOIL - 21/12/2022 SE241126.035
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040	BH19_0.5 SOIL - 21/12/2022 SE241126.041
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	**0.06**	<0.05

PARAMETER	UOM	LOR	BH16_0.2 SOIL - 21/12/2022 SE241126.042	BH17_0.9 SOIL - 21/12/2022 SE241126.044
Mercury	mg/kg	0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 30/12/2022

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH03_1.3-1.5 SOIL - 19/12/2022 SE241126.004	BH05_1.0 SOIL - 19/12/2022 SE241126.006	BH05_1.5 SOIL - 19/12/2022 SE241126.007
% Moisture	%w/w	1	6.8	5.7	12.2	16.3	15.0

PARAMETER	UOM	LOR	BH06_0.2 SOIL - 19/12/2022 SE241126.008	BH06_0.5 SOIL - 19/12/2022 SE241126.009	BH07_0.5 SOIL - 19/12/2022 SE241126.010	BH07_1.5 SOIL - 19/12/2022 SE241126.011	BH26_0.2 SOIL - 19/12/2022 SE241126.012
% Moisture	%w/w	1	11.7	5.5	5.1	6.3	5.5

PARAMETER	UOM	LOR	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013	BH27_0.5 SOIL - 19/12/2022 SE241126.014	QA200 SOIL - 19/12/2022 SE241126.015	BH27_1.5 SOIL - 19/12/2022 SE241126.016	BH28_0.2 SOIL - 19/12/2022 SE241126.017
% Moisture	%w/w	1	26.3	21.4	19.4	20.1	8.4

PARAMETER	UOM	LOR	BH28_1.0 SOIL - 19/12/2022 SE241126.018	BH08_0.5 SOIL - 20/12/2022 SE241126.021	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH14_1.3 SOIL - 20/12/2022 SE241126.023	BH14_1.5 SOIL - 20/12/2022 SE241126.024
% Moisture	%w/w	1	14.3	10.3	12.4	8.7	9.1

PARAMETER	UOM	LOR	BH15_0.2 SOIL - 20/12/2022 SE241126.025	QA400 SOIL - 20/12/2022 SE241126.026	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH21_0.8 SOIL - 21/12/2022 SE241126.030	BH11_0.1 SOIL - 21/12/2022 SE241126.032
% Moisture	%w/w	1	12.4	12.6	7.8	11.0	13.0

PARAMETER	UOM	LOR	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH20_1.5 SOIL - 21/12/2022 SE241126.035	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039
% Moisture	%w/w	1	6.3	10.5	9.3	5.9	8.4

PARAMETER	UOM	LOR	BH19_0.2 SOIL - 21/12/2022 SE241126.040	BH19_0.5 SOIL - 21/12/2022 SE241126.041	BH16_0.2 SOIL - 21/12/2022 SE241126.042	BH17_0.9 SOIL - 21/12/2022 SE241126.044
% Moisture	%w/w	1	10.7	9.1	16.5	8.8

Fibre Identification in soil [AS4964/AN602] Tested: 6/1/2023

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH04_0.2 SOIL - 19/12/2022 SE241126.005	BH06_0.2 SOIL - 19/12/2022 SE241126.008	BH06_0.5 SOIL - 19/12/2022 SE241126.009
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	BH07_0.5 SOIL - 19/12/2022 SE241126.010	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013	BH27_0.5 SOIL - 19/12/2022 SE241126.014	BH28_0.2 SOIL - 19/12/2022 SE241126.017
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	BH01_0.2 SOIL - 20/12/2022 SE241126.019	BH08_0.2 SOIL - 20/12/2022 SE241126.020	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH15_0.2 SOIL - 20/12/2022 SE241126.025	BH15_0.5 SOIL - 20/12/2022 SE241126.027
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	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH22_0.1 SOIL - 21/12/2022 SE241126.031	BH11_0.1 SOIL - 21/12/2022 SE241126.032	BH18_0.2 SOIL - 21/12/2022 SE241126.033	BH20_0.2 SOIL - 21/12/2022 SE241126.034
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	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH09_0.1 SOIL - 21/12/2022 SE241126.038	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040
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_0.2 SOIL - 21/12/2022 SE241126.042	BH17_0.2 SOIL - 21/12/2022 SE241126.043
Asbestos Detected	No unit	-	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 6/1/2023

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH06_0.2 SOIL - 19/12/2022 SE241126.008	BH26_0.2 SOIL - 19/12/2022 SE241126.012	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013	BH28_0.2 SOIL - 19/12/2022 SE241126.017
Total Sample Weight*	g	1	270	316	476	202	257
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<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	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD	NAD	NAD

PARAMETER	UOM	LOR	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH15_0.2 SOIL - 20/12/2022 SE241126.025	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH11_0.1 SOIL - 21/12/2022 SE241126.032	BH18_0.2 SOIL - 21/12/2022 SE241126.033
Total Sample Weight*	g	1	340	196	390	393	353
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<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	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD	NAD	NAD

PARAMETER	UOM	LOR	BH23_0.1 SOIL - 21/12/2022 SE241126.036	BH12_0.1 SOIL - 21/12/2022 SE241126.037	BH24_0.2 SOIL - 21/12/2022 SE241126.039	BH19_0.2 SOIL - 21/12/2022 SE241126.040
Total Sample Weight*	g	1	243	322	295	299
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<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	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD	NAD

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 6/1/2023

PARAMETER	UOM	LOR	BH03_0.3 SOIL - 19/12/2022 SE241126.002	BH27_0.1-0.2 SOIL - 19/12/2022 SE241126.013	BH14_0.2 SOIL - 20/12/2022 SE241126.022	BH25_0.2 SOIL - 20/12/2022 SE241126.029	BH16_0.2 SOIL - 21/12/2022 SE241126.042
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
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
Perfluorononane sulfonate (PFNS)	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

Particle sizing of soils <75µm by hydrometer [AN005] Tested: 10/1/2023

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH05_1.5 SOIL - 19/12/2022 SE241126.007	BH14_1.5 SOIL - 20/12/2022 SE241126.024	BH17_0.9 SOIL - 21/12/2022 SE241126.044
Clay (<0.002mm)*	%w/w	0.1	**5.0**	**20**	**5.0**	**4.0**

Particle sizing of soils by sieving [AN005] Tested: 10/1/2023

PARAMETER	UOM	LOR	BH01_0.5 SOIL - 19/12/2022 SE241126.001	BH05_1.5 SOIL - 19/12/2022 SE241126.007	BH14_1.5 SOIL - 20/12/2022 SE241126.024	BH17_0.9 SOIL - 21/12/2022 SE241126.044
Passing 75µm*	%w/w	1	**31**	**53**	**38**	**23**
Retained 75µm*	%w/w	1	**70**	**47**	**62**	**78**

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+.
AN104	pHF is determined on an extract of approximately 2g of as received sample in approximately 10 mL of deionised water with pH determined after standing 30 minutes.
AN104	pHFox is determined on an extract of approximately 2g of as received sample with a few mLs of 30% hydrogen peroxide (adjusted to pH 4.5 to 5.5) with the extract reaction being rated from slight to extreme, with pH determined after reaction is complete and extract has cooled. Referenced to ASS Laboratory Methods Guidelines, method 23Af-Bf, 2004. 0 No Reaction 1 Slight Reaction 2 Moderate Reaction 3 Strong/High Reaction 4 Extreme/Vigorous Reaction (gas evolution and heat generation)
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.-
AN188	The organic material in the soil sample is oxidised with chromic acid in the presence of excess sulfuric acid, without external heat being applied. The excess dichromate ion is determined by titration with standard ammonium iron (II) sulfate solution and the amount of oxidised material is calculated from the quantity of dichromate reduced. Referenced to NEPM 105 and AS1289.1.1.1.
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). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS /ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection /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	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.
***	Indicates that both * and ** apply.	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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or

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Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 21-12-22 | Received By: | Cooling Method: ☒ Ice ☐ Icepack ☐ None | Samples intact: ☒ Yes ☐ No

Logged-in Date: | Time of Receipt: 3:00 | Cooler Sealed: ☒ Yes ☐ No ☐ N/A | Temperature: ☐ Ambient ☒ Chilled 2.1°C

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth
Company: Stantec
Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia
Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au
Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935
Attached Parameter List: ☐ Yes ☐ No
Replacement Sample Containers Required: ☐ Yes ☐ No
Results Required By: Standard TAT Urgent TA requires lab approval
Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information | PO No.: | Project No.: 304100928

Company Name: Stantec
Contact Name: Henry Ongerth
Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia
Phone Number: | **After Hours Phone Number:**
Fax Number: | **Email:** henry.ongerth@cardno.com.au

SGS EHS Sydney COC
SE241126

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☐ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: TRH, BTEXN, PAH, 8Metals, PCB, OCP, OPP	asbestos (presence/absence)	PFAS (short suite)	Asbestos quantification (NEPM)	Ph/PhFOX	TRH, BTEXN, PAH, 8Metals	REG 2 NEPM Soil Characteristics
1	BH01_0.5	0.5	19/12/2022	AM/PM	Soil	Jar, ZLB, PFAS jar	X			X			X
	BH01_1.0	1	19/12/2022	AM/PM	Soil	Jar, ZLB, PFAS jar							
	BH01_1.5	1.5	19/12/2022	AM/PM	Soil	Jar, ZLB							
	BH02_0.5	0.5	19/12/2022	AM/PM	Soil	Jar, ZLB, PFAS jar							
	BH02_1.0	1	19/12/2022	AM/PM	Soil	Jar, ZLB, PFAS jar							
	BH02_1.5	1.5	19/12/2022	AM/PM	Soil	Jar, ZLB							
2	*BH03_0.3	0.3	19/12/2022	AM/PM	Soil	Jar, 2xZLB, PFAS jar	X	X	X				
3	*BH03_0.8-1.0	0.8-1.0	19/12/2022	AM/PM	Soil	Jar, 2xZLB, PFAS jar					X		
4	BH03_1.3-1.5	1.3-1.5	19/12/2022	AM/PM	Soil	Jar, ZLB						X	
5	BH04_0.2	0.2	19/12/2022	AM/PM	Soil	Jar, ZLB		X					
	BH04_0.7-1.0	0.7-1.0	19/12/2022	AM/PM	Soil	Jar, ZLB							
	BH04_1.3	1.3	19/12/2022	AM/PM	Soil	Jar, ZLB							
	*BH05_0.2-0.5	0.2-0.5	19/12/2022	AM/PM	Soil	Jar, 2xZLB							
	*BH05_0.5-0.7	0.5-0.7	19/12/2022	AM/PM	Soil	Jar, 2xZLB							
6	*BH05_1.0	1	19/12/2022	AM/PM	Soil	Jar, 2xZLB					X	X	
7	*BH05_1.5	1.5	19/12/2022	AM/PM	Soil	ZLB					X		X
8	BH06_0.2	0.2	19/12/2022	AM/PM	Soil	Jar, ZLB	X			X			
9	BH06_0.5	0.5	19/12/2022	AM/PM	Soil	Jar, ZLB	X	X					
	BH06_1.0	1	19/12/2022	AM/PM	Soil	Jar, ZLB							
	BH06_1.5	1.5	19/12/2022	AM/PM	Soil	Jar, ZLB							
	BH07_0.2	0.2	19/12/2022	AM/PM	Soil	Jar, ZLB							

Sampled By: Henry Ongerth **Date:** 21/12/2022

Relinquished By: Michael Koerner **Date:** 22/12/2022 **Time:** 12:53 PM

source: Sydney.pdf page: 1 SGS Ref: SE241126_COC

SGS

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Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 21/12 Received By: Cooling Method: ☐ Ice ☐ Icepack ☐ None Samples intact: ☐ Yes ☐ No

Logged-in Date: Time of Receipt: 7.05 Cooler Sealed: ☐ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information | **PO No.:** | **Project No.:** 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: | **After Hours Phone Number:**

Fax Number: | **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☐ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: TRH, BTEXN, PAH, 8Metals, PCB, OCP, OPP	asbestos (presence/absence)	PFAS (short suite)	Asbestos quantification (NEPM)	Ph/PhFOX	TRH, BTEXN, PAH, 8Metals	REG 2 NEPM Soil Characteristics
10	BH07_0.5	0.5	19/12/2022	AM/PM	Soil	Jar, ZLB	X	X					
	BH07_1.0	1	19/12/2022	AM/PM	Soil	Jar, ZLB							
11	BH07_1.5	1.5	19/12/2022	AM/PM	Soil	Jar, ZLB						X	
12	BH26_0.2	0.2	19/12/2022	AM/PM	Soil	Jar, ZLB	X			X			
	BH26_0.5	0.5	19/12/2022	AM/PM	Soil	Jar, ZLB							
	QA100	0.5	19/12/2022	AM/PM	Soil	Jar							
	BH26_0.7	0.7	19/12/2022	AM/PM	Soil	Jar							
13	BH27_0.1-0.2	0.1-0.2	19/12/2022	AM/PM	Soil	ZLB, PFAS jar	X		X	X			
14	BH27_0.5	0.5	19/12/2022	AM/PM	Soil	Jar, ZLB	X	X					
15	QA200	0.5	19/12/2022	AM/PM	Soil	Jar	X						
	BH27_1.0	1	19/12/2022	AM/PM	Soil	Jar, ZLB, PFAS jar							
16	BH27_1.5	1.5	19/12/2022	AM/PM	Soil	Jar, ZLB						X	
17	*BH28_0.2	0.2	19/12/2022	AM/PM	Soil	Jar, 2xZLB, PFAS jar	X			X			
	BH28_0.5	0.5	19/12/2022	AM/PM	Soil	Jar, ZLB							
18	*BH28_1.0	1	19/12/2022	AM/PM	Soil	Jar, 2xZLB, PFAS jar					X	X	
	BH28_1.5	1.5	19/12/2022	AM/PM	Soil	Jar, ZLB							
19	BH01_0.2	0.2	20/12/2022	AM/PM	Soil	Jar, ZLB, PFAS jar		X					
	BH02_0.1	0.1	20/12/2022	AM/PM	Soil	Jar, ZLB, PFAS jar							
20	BH08_0.2	0.2	20/12/2022	AM/PM	Soil	Jar, ZLB		X					
21	*BH08_0.5	0.5	20/12/2022	AM/PM	Soil	Jar, 2xZLB					X	X	
	*BH08_0.7	0.7	20/12/2022	AM/PM	Soil	Jar, 2xZLB							

Sampled By: Henry Ongerth **Date:** 21/12/2022

Relinquished By: Michael Koerner **Date:** 22/12/2022 **Time:** 12:53 PM

SGS

Page No: 1/2

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 21/12 Received By: by Cooling Method: ☐ Ice ☐ Icepack ☐ None Samples intact: ☐ Yes ☐ No

Logged-in Date: Time of Receipt: 3pm Cooler Sealed: ☐ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information | **PO No.:** | **Project No.:** 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: | **After Hours Phone Number:**

Fax Number: | **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☐ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: TRH, BTEXN, PAH, 8Metals, PCB, OCP, OPP	asbestos (presence/absence)	PFAS (short suite)	Asbestos quantification (NEPM)	Ph/PhFOX	TRH, BTEXN, PAH, 8Metals	REG 2 NEPM Soil Characteristics
	*BH08_1.0	1	20/12/2022	AM/PM	Soil	Jar, ZLB, PFAS jar							
	*BH08_1.5	1.5	20/12/2022	AM/PM	Soil	Jar, 2xZLB							
22	BH14_0.2	0.2	20/12/2022	AM/PM	Soil	Jar, ZLB	X		X	X			
	*BH14_0.5	0.5	20/12/2022	AM/PM	Soil	Jar, 2xZLB, PFAS jar							
	BH14_0.7	0.7	20/12/2022	AM/PM	Soil	Jar, ZLB							
	*BH14_1.0	1	20/12/2022	AM/PM	Soil	Jar, 2xZLB, PFAS jar							
23	*BH14_1.3	1.3	20/12/2022	AM/PM	Soil	Jar, 2xZLB					X	X	
24	BH14_1.5	1.5	20/12/2022	AM/PM	Soil	Jar, ZLB							X
25	BH15_0.2	0.2	20/12/2022	AM/PM	Soil	Jar, ZLB	X			X			
26	QA400	0.2	20/12/2022	AM/PM	Soil	Jar	X						
27	*BH15_0.5	0.5	20/12/2022	AM/PM	Soil	Jar, 2xZLB		X					
	BH15_0.7	0.7	20/12/2022	AM/PM	Soil	Jar, ZLB							
	*BH15_1.0	1	20/12/2022	AM/PM	Soil	Jar, 2xZLB							
28	BH15_1.4	1.4	20/12/2022	AM/PM	Soil	Jar, ZLB					X		
29	BH25_0.2	0.2	20/12/2022	AM/PM	Soil	Jar, ZLB	X		X	X			
	BH25_0.5	0.5	20/12/2022	AM/PM	Soil	Jar, ZLB							
	QA300	0.5	20/12/2022	AM/PM	Soil	Jar							
	BH25_1.0	1	20/12/2022	AM/PM	Soil	Jar, ZLB							
	BH25_1.5	1.5	20/12/2022	AM/PM	Soil	Jar, ZLB							
	BH23_1.5	1.5	21/12/2022	AM/PM	Soil	Jar, ZLB							
	BH21_0.1	0.1	21/12/2022	AM/PM	Soil	Jar, ZLB							

Sampled By: Henry Ongerth **Date:** 21/12/2022

Relinquished By: Michael Koerner **Date:** 22/12/2022 **Time:** 12:53 PM

SGS

Page No: 1/2

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 22/12 Received By: Cooling Method: ☐ Ice ☐ Icepack ☐ None Samples intact: ☐ Yes ☐ No

Logged-in Date: Time of Receipt: 3p Cooler Sealed: ☐ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client Information		PO No.:	Project No.: 304100928
Company Name:	Stantec		
Contact Name:	Henry Ongerth		
Address:	Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia		
Phone Number:		After Hours Phone Number:	
Fax Number:		Email:	henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☐ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: TRH, BTEXN, PAH, 8Metals, PCB, OCP, OPP	asbestos (presence/absence)	PFAS (short suite)	Asbestos quantification (NEPM)	Ph/PhFOX	TRH, BTEXN, PAH, 8Metals	REG 2 NEPM Soil Characteristics
	BH21_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB							
30	BH21_0.8	0.8	21/12/2022	AM/PM	Soil	Jar, ZLB						X	
31	BH22_0.1	0.1	21/12/2022	AM/PM	Soil	Jar, ZLB		X					
	BH22_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB							
	BH22_1.0	1	21/12/2022	AM/PM	Soil	Jar, ZLB							
	BH22_1.5	1.5	21/12/2022	AM/PM	Soil	Jar, ZLB							
32	BH11_0.1	0.1	21/12/2022	AM/PM	Soil	Jar, ZLB	X			X			
	QA500	0.1	21/12/2022	AM/PM	Soil	Jar							
	BH11_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, 2xZLB							
	BH13_0.2	0.2	21/12/2022	AM/PM	Soil	Jar, ZLB							
33	BH18_0.2	0.2	21/12/2022	AM/PM	Soil	Jar, 2xZLB	X			X			
	BH18_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB							
	BH18_1.0	1	21/12/2022	AM/PM	Soil	Jar, 2xZLB							
	BH18_1.2	1.2	21/12/2022	AM/PM	Soil	Jar, ZLB							
34	BH20_0.2	0.2	21/12/2022	AM/PM	Soil	Jar, ZLB		X					
	BH20_0.7	0.7	21/12/2022	AM/PM	Soil	Jar, ZLB							
	BH20_1.0	1	21/12/2022	AM/PM	Soil	Jar, ZLB							
	BH20_1.3	1.3	21/12/2022	AM/PM	Soil	Jar, ZLB							
35	BH20_1.5	1.5	21/12/2022	AM/PM	Soil	Jar, ZLB						X	
36	BH23_0.1	0.1	21/12/2022	AM/PM	Soil	Jar, ZLB	X			X			
	BH23_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB							

Sampled By: Henry Ongerth Date: 21/12/2022

Relinquished By: Michael Koerner Date: 22/12/2022 Time: 12:53 PM

SGS

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 21/12 | Received By: BZy | Cooling Method: ☐ Ice ☐ Icepack ☐ None | Samples intact: ☐ Yes ☐ No

Logged-in Date: | Time of Receipt: 3 | Cooler Sealed: ☐ Yes ☐ No ☐ N/A | Temperature: ☐ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information | **PO No.:** | **Project No.:** 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: | **After Hours Phone Number:**

Fax Number: | **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☐ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: TRH, BTEXN, PAH, 8Metals, PCB, OCP, OPP	asbestos (presence/absence)	PFAS (short suite)	Asbestos quantification (NEPM)	Ph/PhFOX	TRH, BTEXN, PAH, 8Metals	REG 2 NEPM Soil Characteristics					
	BH23_1.0	1	21/12/2022	AM/PM	Soil	Jar, ZLB												
	QA600	0.2	21/12/2022	AM/PM	Soil	Jar												
	BH13_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH13_0.7	0.7	21/12/2022	AM/PM	Soil	Jar, 2xZLB												
37	BH12_0.1	0.1	21/12/2022	AM/PM	Soil	Jar, ZLB	X			X								
	BH12_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH12_1.0	1	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH12_1.5	1.5	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH10_0.1	0.1	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH10_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH10_1.0	1	21/12/2022	AM/PM	Soil	Jar, ZLB												
38	BH09_0.1	0.1	21/12/2022	AM/PM	Soil	Jar, ZLB		X										
	BH09_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH09_1.0	1	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH09_1.5	1.5	21/12/2022	AM/PM	Soil	Jar, ZLB												
39	BH24_0.2	0.2	21/12/2022	AM/PM	Soil	Jar, 2xZLB	X			X								
	QA700	0.2	21/12/2022	AM/PM	Soil	Jar												
	BH24_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, ZLB												
	BH24_1.0	1	21/12/2022	AM/PM	Soil	Jar, 2xZLB												
40	BH19_0.2	0.2	21/12/2022	AM/PM	Soil	Jar, ZLB	X			X								
41	BH19_0.5	0.5	21/12/2022	AM/PM	Soil	Jar, 2xZLB					X	X						

Sampled By: Henry Ongerth **Date:** 21/12/2022

Relinquished By: Michael Koerner **Date:** 22/12/2022 **Time:** 12:53 PM

SGS

Page No: 1/2

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 21/12 Received By: Cooling Method: ☐ Ice ☐ Icepack ☐ None Samples intact: ☐ Yes ☐ No

Logged-in Date: Time of Receipt: 3:1 Cooler Sealed: ☐ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client Information		PO No.:	Project No.: 304100928
Company Name:	Stantec		
Contact Name:	Henry Ongerth		
Address:	Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia		
Phone Number:		After Hours Phone Number:	
Fax Number:		Email:	henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☐ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: TRH, BTEXN, PAH, 8Metals, PCB, OCP, OPP	asbestos (presence/absence)	PFAS (short suite)	Asbestos quantification (NEPM)	Ph/PhFOX	TRH, BTEXN, PAH, 8Metals	BTEX	REG 2 NEPM Soil Characteristics
	BH19_1.0	1	21/12/2022	AM/PM	Soil	Jar, ZLB								
	BH19_1.5	1.5	21/12/2022	AM/PM	Soil	Jar, 2xZLB								
42	BH16_0.2	0.2	21/12/2022	AM/PM	Soil	Jar, ZLB	X	X	X					
	*BH16_0.5-0.7	0.5-0.7	21/12/2022	AM/PM	Soil	ZLB								
	BH16_0.7	0.7	21/12/2022	AM/PM	Soil	Jar, ZLB								
	*BH16_1.2-1.4	1.2-1.4	21/12/2022	AM/PM	Soil	ZLB								
	BH16_1.3	1.3	21/12/2022	AM/PM	Soil	Jar, ZLB								
43	BH17_0.2	0.2	21/12/2022	AM/PM	Soil	Jar, ZLB		X						
44	BH17_0.9	0.9	21/12/2022	AM/PM	Soil	Jar, ZLB						X		X
45	TB		lab prepared	ab prepare	Soil	vial							x	
46	TS		lab prepared	ab prepare	Soil	vial							x	

Sampled By: Henry Ongerth Date: 21/12/2022

Relinquished By: Michael Koerner Date: 22/12/2022 Time: 12:53 PM

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928 - Additional**
Order Number	**304100928**
Samples	46

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	**SE241126A R0**
Date Received	23/1/2023
Date Reported	31/1/2023

COMMENTS

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

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Ly Kim HA
Organic Section Head

Shane MCDERMOTT
Inorganic/Metals Chemist

TRH Silica Gel (Total Recoverable Hydrocarbons - Silica Gel) in Soil [AN403] Tested: 23/1/2023

PARAMETER	UOM	LOR	BH15_0.2 SOIL - 20/12/2022 SE241126A.025
TRH C10-C14-Silica	mg/kg	20	<20
TRH C15-C28-Silica	mg/kg	45	<45
TRH C29-C36-Silica	mg/kg	45	<45
TRH C37-C40-Silica	mg/kg	100	<100
TRH >C10-C16-Silica	mg/kg	25	<25
TRH >C10-C16-Silica minus Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34-Silica (F3)	mg/kg	90	<90
TRH >C34-C40-Silica (F4)	mg/kg	120	<120
TRH C10-C36-Silica	mg/kg	110	<110

METHOD	METHODOLOGY SUMMARY
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.
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-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

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-qb/environment-health-and-safety .

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company 's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or

Hi GBS team.

Please book this in on standard TAT.
Thanks,

Matthew Tyler
Environment, Health & Safety
Client Services

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015

From: Henry Ongerth <henry.ongerth@cardno.com.au>
Sent: Monday, 23 January 2023 1:29 PM
To: AU.Environmental.Sydney, AU (Sydney) <AU.Environmental.Sydney@sgs.com>
Subject: [EXTERNAL] RE: Report Job SE241126, your reference 304100928, order number 304100928

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Hi SGS,

Can I please request that you perform a silica gel cleanup on sample ID: BH15_0.2

Kind regards,

Henry Ongerth
Graduate Engineer - Rotation Program

henry.ongerth@cardno.com.au

Stantec Australia
Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Stantec acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures and to Elders past and present.

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Please consider the environment before printing this email.

From: AU.Environmental.Sydney@SGS.com <AU.Environmental.Sydney@SGS.com>
Sent: Friday, 13 January 2023 5:40 PM
To: Henry Ongerth <henry.ongerth@cardno.com.au>
Subject: Report Job SE241126, your reference 304100928, order number 304100928

Dear Valued Customer,

Please find attached the report for SGS job SE241126, your reference 304100928, order number 304100928.

If you have any questions or concerns, please don't hesitate to contact your SGS Client Services representative.

Please provide any feedback you have on our service via this link
https://sgs.surveymonkey.com/r/F92B32Q

Best Regards,
SGS Alexandria Customer Service Team
SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400

Information in this email and any attachments is confidential and intended solely for the use of the individual(s) to whom it is addressed or otherwise directed. Please note that any views or opinions presented in this email are solely those of the author and do not necessarily represent those of the Company. Finally, the recipient should check this email and any attachments for the presence of viruses. The Company accepts no liability for any damage caused by any virus transmitted by this email. All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at https://www.sgs.com/en/terms-and-conditions

Request for Laboratory Services and Chain of Custody Form

Delivery Dock 2, 179 Magowar Road, GIRRAWEEN, NSW 2145 Ph: +61 2 9900 8421 Email: EnviroSampleNSW@eurofins.com

Laboratory Section

Received Date: 25/1/23 Received By: [signature] Cooling Method: ☐ Ice ☐ Icepack ☑ None Samples intact: ☑ Yes ☐ No

Logged-in Date: Time of Receipt: 5.25 Cooler Sealed: ☐ Yes ☐ No ☐ N/A Temperature: ☑ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: 0421324022 Fax:

Quote #:

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TA Urgent TA requires lab approval

Notes:

Client information | **PO No.:** | **Project No.:** 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 **After Hours Phone Number:**

Fax Number: **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☐ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: [redacted] Lead	asbestos (presence/absence)	[redacted] Zinc	Asbestos quantification (NEPM)	[redacted] Hold	[redacted] TRH	[redacted]
1	QC100	0.1	25/01/2023	AM/PM	Soil	Jar	+		X				
2	QC200	0.1	25/01/2023	AM/PM	Soil	Jar	X		X			X	

Sampled By: Henry Ongerth and Claire Corbett **Date:** 25/01/2023

Relinquished By: Henry Ongerth [signature] **Date:** 25/01/23 **Time:** 5:22pm

960232

Stantec Australia Pty Ltd
Level 22, 570 Bourke Street
Melbourne
VIC 3000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Henry Ongerth**

Report **960232-S**
Project name
Project ID 304100928
Received Date Feb 01, 2023

Client Sample ID			**QC100**	**QC200**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S23-Fe0005367**	**S23-Fe0005368**
Date Sampled			**Jan 25, 2023**	**Jan 25, 2023**
Test/Reference	LOR	Unit		
Heavy Metals				
Lead	5	mg/kg	280	420
Zinc	5	mg/kg	210	240
% Moisture	1	%	16	20
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	-	< 20
TRH C10-C14	20	mg/kg	-	< 20
TRH C15-C28	50	mg/kg	-	99
TRH C29-C36	50	mg/kg	-	100
TRH C10-C36 (Total)	50	mg/kg	-	199
TRH C6-C10	20	mg/kg	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50
TRH >C16-C34	100	mg/kg	-	170
TRH >C34-C40	100	mg/kg	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	170
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	-	< 0.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Sydney	Feb 06, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Feb 03, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 06, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 06, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 06, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Stantec Australia Pty Ltd (NSW/ACT)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:
Project ID: 304100928

Order No.:
Report #: 960232
Phone:
Fax:

Received: Feb 1, 2023 4:15 PM
Due: Feb 8, 2023
Priority: 5 Day
Contact Name: Henry Ongerth

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail						Lead	Zinc	Moisture Set	Total Recoverable Hydrocarbons
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	QC100	Jan 25, 2023		Soil	S23-Fe0005367	X	X	X	
2	QC200	Jan 25, 2023		Soil	S23-Fe0005368	X	X	X	X
Test Counts						2	2	2	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**µg/L:** micrograms per litre
ppm: parts per million	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Lead	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
LCS - % Recovery							
Heavy Metals							
Lead	%	105			80-120	Pass	
Zinc	%	116			80-120	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	123			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
TRH C6-C10	%	117			70-130	Pass	
TRH >C10-C16	%	75			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	118			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	N23-Ja0046061	NCP	%	115			75-125	Pass	
Zinc	S23-Fe0006547	NCP	%	101			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Fe0009280	NCP	%	106			70-130	Pass	
TRH C10-C14	S23-Fe0002141	NCP	%	99			70-130	Pass	
TRH C6-C10	S23-Fe0009280	NCP	%	106			70-130	Pass	
TRH >C10-C16	S23-Fe0002141	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S23-Fe0009280	NCP	%	106			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S23-Fe0005336	NCP	%	30	25	17	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	S23-Fe0005368	CP	mg/kg	420	360	15	30%	Pass	
Zinc	S23-Fe0005368	CP	mg/kg	240	220	9.8	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Fe0006008	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S23-Fe0002142	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-Fe0002142	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-Fe0002142	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S23-Fe0006008	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S23-Fe0002142	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S23-Fe0002142	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S23-Fe0002142	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Fe0006008	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Hannah Mawbey	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928**
Order Number	**304100928**
Samples	19

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	**SE242288 R0**
Date Received	25/1/2023
Date Reported	3/2/2023

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Chemist

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane MCDERMOTT
Inorganic/Metals Chemist

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 30/1/2023

PARAMETER	UOM	LOR	HA109-0.1 SOIL - 25/1/2023 SE242288.010	HA110-0.1 SOIL - 25/1/2023 SE242288.011	HA111-0.1 SOIL - 25/1/2023 SE242288.012	HA112-0.1 SOIL - 25/1/2023 SE242288.013	QA200 SOIL - 25/1/2023 SE242288.014
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

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 30/1/2023

PARAMETER	UOM	LOR	HA109-0.1 SOIL - 25/1/2023 SE242288.010	HA110-0.1 SOIL - 25/1/2023 SE242288.011	HA111-0.1 SOIL - 25/1/2023 SE242288.012	HA112-0.1 SOIL - 25/1/2023 SE242288.013	QA200 SOIL - 25/1/2023 SE242288.014
TRH C10-C14	mg/kg	20	**39**	<20	**29**	**25**	**27**
TRH C15-C28	mg/kg	45	**160**	**64**	**150**	**110**	**150**
TRH C29-C36	mg/kg	45	**74**	**47**	**93**	**71**	**73**
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	**50**	<25	**39**	**34**	**38**
TRH >C16-C34 (F3)	mg/kg	90	**210**	**97**	**210**	**160**	**200**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**270**	**110**	**270**	**210**	**250**
TRH >C10-C40 Total (F bands)	mg/kg	210	**260**	<210	**250**	<210	**240**

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/1/2023

PARAMETER	UOM	LOR	HA101-0.1 SOIL - 25/1/2023 SE242288.001	HA102-0.1 SOIL - 25/1/2023 SE242288.002	HA103-0.1 SOIL - 25/1/2023 SE242288.003	HA104-0.1 SOIL - 25/1/2023 SE242288.004	HA105-0.1 SOIL - 25/1/2023 SE242288.005
Lead, Pb	mg/kg	1	19	970	2500	390	140
Zinc, Zn	mg/kg	2	44	870	1900	910	180

PARAMETER	UOM	LOR	HA106-0.1 SOIL - 25/1/2023 SE242288.006	QA100 SOIL - 25/1/2023 SE242288.007	HA107-0.1 SOIL - 25/1/2023 SE242288.008	HA108-0.1 SOIL - 25/1/2023 SE242288.009	HA109-0.1 SOIL - 25/1/2023 SE242288.010
Lead, Pb	mg/kg	1	190	170	160	310	310
Zinc, Zn	mg/kg	2	170	190	180	220	200

PARAMETER	UOM	LOR	HA110-0.1 SOIL - 25/1/2023 SE242288.011	HA111-0.1 SOIL - 25/1/2023 SE242288.012	HA112-0.1 SOIL - 25/1/2023 SE242288.013	QA200 SOIL - 25/1/2023 SE242288.014	HA113-0.1 SOIL - 25/1/2023 SE242288.015
Lead, Pb	mg/kg	1	200	530	300	290	44
Zinc, Zn	mg/kg	2	140	310	210	190	190

PARAMETER	UOM	LOR	HA114-0.1 SOIL - 25/1/2023 SE242288.016	HA115-0.1 SOIL - 25/1/2023 SE242288.017	HA116-0.1 SOIL - 25/1/2023 SE242288.018
Lead, Pb	mg/kg	1	21	19	110
Zinc, Zn	mg/kg	2	82	58	430

Moisture Content [AN002] Tested: 30/1/2023

PARAMETER	UOM	LOR	HA101-0.1 SOIL - 25/1/2023 SE242288.001	HA102-0.1 SOIL - 25/1/2023 SE242288.002	HA103-0.1 SOIL - 25/1/2023 SE242288.003	HA104-0.1 SOIL - 25/1/2023 SE242288.004	HA105-0.1 SOIL - 25/1/2023 SE242288.005
% Moisture	%w/w	1	5.1	11.6	16.3	29.7	16.3

PARAMETER	UOM	LOR	HA106-0.1 SOIL - 25/1/2023 SE242288.006	QA100 SOIL - 25/1/2023 SE242288.007	HA107-0.1 SOIL - 25/1/2023 SE242288.008	HA108-0.1 SOIL - 25/1/2023 SE242288.009	HA109-0.1 SOIL - 25/1/2023 SE242288.010
% Moisture	%w/w	1	15.2	16.6	10.6	9.3	19.7

PARAMETER	UOM	LOR	HA110-0.1 SOIL - 25/1/2023 SE242288.011	HA111-0.1 SOIL - 25/1/2023 SE242288.012	HA112-0.1 SOIL - 25/1/2023 SE242288.013	QA200 SOIL - 25/1/2023 SE242288.014	HA113-0.1 SOIL - 25/1/2023 SE242288.015
% Moisture	%w/w	1	18.9	18.4	20.3	19.7	10.6

PARAMETER	UOM	LOR	HA114-0.1 SOIL - 25/1/2023 SE242288.016	HA115-0.1 SOIL - 25/1/2023 SE242288.017	HA116-0.1 SOIL - 25/1/2023 SE242288.018
% Moisture	%w/w	1	23.2	16.2	15.2

Fibre Identification in soil [AS4964/AN602] Tested: 2/2/2023

PARAMETER	UOM	LOR	HA101-0.1 SOIL - 25/1/2023 SE242288.001	HA102-0.1 SOIL - 25/1/2023 SE242288.002	HA103-0.1 SOIL - 25/1/2023 SE242288.003	HA104-0.1 SOIL - 25/1/2023 SE242288.004	HA105-0.1 SOIL - 25/1/2023 SE242288.005
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	HA106-0.1 SOIL - 25/1/2023 SE242288.006	HA107-0.1 SOIL - 25/1/2023 SE242288.008	HA108-0.1 SOIL - 25/1/2023 SE242288.009	HA109-0.1 SOIL - 25/1/2023 SE242288.010	HA110-0.1 SOIL - 25/1/2023 SE242288.011
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	HA111-0.1 SOIL - 25/1/2023 SE242288.012	HA112-0.1 SOIL - 25/1/2023 SE242288.013	HA113-0.1 SOIL - 25/1/2023 SE242288.015	HA114-0.1 SOIL - 25/1/2023 SE242288.016	HA115-0.1 SOIL - 25/1/2023 SE242288.017
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	HA116-0.1 SOIL - 25/1/2023 SE242288.018
Asbestos Detected	No unit	-	No
Estimated Fibres*	%w/w	0.01	<0.01

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.
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.
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.
AN433	VOCs and C6-C9/C6-C10 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.

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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SGS

Page No: 1/2

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 25-1-23 | Received By: | Cooling Method: ☐ Ice ☐ Icepack ☑ None | Samples intact: ☑ Yes ☐ No

Logged-in Date: | Time of Receipt: 5.25 | Cooler Sealed: ☑ Yes ☐ No ☐ N/A | Temperature: ☑ Ambient ☐ Chilled 26.5

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information | PO No.: | Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 | **After Hours Phone Number:**

Fax Number: | **Email:** henry.ongerth@cardno.com.au

SGS EHS Sydney COC

SE242288

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	TRH						
1	HA101-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X									
2	HA102-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X									
	HA102-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb					X							
3	HA103-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X									
	HA103-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb					X							
4	HA104-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X									
	HA104-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb					X							
5	HA105-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X									
	HA105-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb					X							
6	HA106-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X									
7	QA100	0.1	25/01/2023	AM/PM	Soil	Jar	X	X										
	HA106-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb	[illegible]	[illegible]			X							
8	HA107-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X									
9	HA108-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X									
	HA108-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb					X							
10	HA109-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X			X						
	HA109-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb					X							
11	HA110-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X			X						
	HA110-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb					X							
12	HA111-0.1	0.1	25/01/2023	AM/PM	Soil	Jar,Zlb	X	X	X			X						
	HA111-0.3	0.3	25/01/2023	AM/PM	Soil	Jar,Zlb					X							

Sampled By: Henry Ongerth and Claire Corbett Date: 25/01/2023

Relinquished By: Henry Ongerth Henry Ongerth Date: 25/01/23 Time: 5:22 pm

source: Sydney.pdf page: 1 SGS Ref: SE242288.COC

SGS

Page No: 2/2

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 25.1.23 | Received By: [redacted] | Cooling Method: ☐ Ice ☐ Icepack ☐ None | Samples intact: ☑ Yes ☐ No

Logged-in Date: | Time of Receipt: 5:25 | Cooler Sealed: ☑ Yes ☐ No ☐ N/A | Temperature: ☑ Ambient ☐ Chilled 36.1

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information		PO No.:	Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 **After Hours Phone Number:**

Fax Number: **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☒ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	TRH
13	HA112-0.1	0.1	25/01/2023	AM/PM	Soil	Jar, Zlb	X	X	X			X
14	[redacted] QA200	0.1	25/01/2023	AM/PM	Soil	Jar	X	X	[redacted]			X
	HA112-0.3	0.3	25/01/2023	AM/PM	Soil	Jar, Zlb					X	
15	HA113-0.1	0.1	25/01/2023	AM/PM	Soil	Jar, Zlb	X	X	X			
16	HA114-0.1	0.1	25/01/2023	AM/PM	Soil	Jar, Zlb	X	X	X			
	HA114-0.3	0.3	25/01/2023	AM/PM	Soil	Jar, Zlb					X	
17	HA115-0.1	0.1	25/01/2023	AM/PM	Soil	Jar, Zlb	X	X	X			
	HA115-0.3	0.3	25/01/2023	AM/PM	Soil	Jar, Zlb					X	
18	HA116-0.1	0.1	25/01/2023	AM/PM	Soil	Jar, Zlb	X	X	X			
	HA116-0.3	0.3	25/01/2023	AM/PM	Soil	Jar, Zlb					X	
19	RIN 100		25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							
			25/01/2023	AM/PM	Soil							

Sampled By: Henry Ongerth and Claire Corbett **Date:** 25/01/2023

Relinquished By: Henry Ongerth [redacted] **Date:** 25/01/23 **Time:** 5:22 pm

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928 - Additional**
Order Number	**304100928**
Samples	19

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	**SE242288A R0**
Date Received	6/2/2023
Date Reported	13/2/2023

COMMENTS

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

SIGNATORIES

Bennet LO
Senior Chemist

Shane MCDERMOTT
Inorganic/Metals Chemist

TCLP (Toxicity Characteristic Leaching Procedure) for Metals [AN006] Tested: 10/2/2023

PARAMETER	UOM	LOR	HA103-0.1 SOIL - 25/1/2023 SE242288A.003
pH 1:20	pH Units	-	**6.0**
pH 1:20 plus HCL	pH Units	-	**2.3**
Extraction Solution Used	No unit	-	**1**
Mass of Sample Used*	g	-	**13**
Volume of ExtractionSolution Used*	mL	-	**250**
pH TCLP after 18 hours	pH Units	-	**5.0**

Metals in TCLP Extract by ICPOES [AN320] Tested: 13/2/2023

PARAMETER	UOM	LOR	HA103-0.1 SOIL - 25/1/2023 SE242288A.003
Lead, Pb	mg/L	0.02	**2.1**
Zinc, Zn	mg/L	0.01	**19**

METHOD	METHODOLOGY SUMMARY
AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05.
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.

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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Hi GBS team,

Please book in as below, standard TAT, thanks.

Kind Regards,

Huong Crawford
Industries & Environment
Production Manager

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Phone: +61 (0)2 8594 0403
Fax: + 61 (0)2 8594 0499
E-mail: Huong.Crawford@sgs.com
Web: www.au.sgs.com

View Your Results Online: engage.sgs.com

From: Henry Ongerth <henry.ongerth@cardno.com.au>
Sent: Monday, 6 February 2023 4:15 PM
To: AU.Environmental.Sydney, AU (Sydney) <AU.Environmental.Sydney@sgs.com>
Cc: AU.SampleReceipt.Sydney, AU (Sydney) <AU.SampleReceipt.Sydney@sgs.com>
Subject: RE: [EXTERNAL] RE: Report Job SE242288, your reference 304100928, order number 304100928

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Hi Huong,

TCLP lead and zinc please.

Thanks,

Henry Ongerth
Graduate Engineer - Rotation Program

henry.ongerth@cardno.com.au

Stantec Australia
Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Stantec acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures and to Elders past and present.

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From: AU.Environmental.Sydney, AU (Sydney) <AU.Environmental.Sydney@sgs.com>
Sent: Monday, 6 February 2023 3:25 PM
To: Henry Ongerth <henry.ongerth@cardno.com.au>
Cc: AU.SampleReceipt.Sydney, AU (Sydney) <AU.SampleReceipt.Sydney@sgs.com>
Subject: RE: [EXTERNAL] RE: Report Job SE242288, your reference 304100928, order number 304100928

Hi Henry,

Can you please let us know the testing required for TCLP? Eg. TCLP 8 heavy metals, TCLP lead, TCLP PAH…, thanks.

Kind Regards,

Huong Crawford
Industries & Environment
Production Manager

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Phone: +61 (0)2 8594 0403
Fax: + 61 (0)2 8594 0499
E-mail: Huong.Crawford@sgs.com
Web: www.au.sgs.com

View Your Results Online: engage.sgs.com

From: Henry Ongerth <henry.ongerth@cardno.com.au>
Sent: Monday, 6 February 2023 3:19 PM
To: AU.Environmental.Sydney, AU (Sydney) <AU.Environmental.Sydney@SGS.com>
Subject: [EXTERNAL] RE: Report Job SE242288, your reference 304100928, order number 304100928

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Hi SGS,

Can I please get some TCLP testing done on HA103_0.1, standard TAT.

Thanks very much.

Kind regards,

Henry Ongerth
Graduate Engineer - Rotation Program

henry.ongerth@cardno.com.au

Stantec Australia
Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

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From: AU.Environmental.Sydney@SGS.com <AU.Environmental.Sydney@SGS.com>
Sent: Friday, 3 February 2023 4:54 PM
To: Henry Ongerth <henry.ongerth@cardno.com.au>
Subject: Report Job SE242288, your reference 304100928, order number 304100928

Dear Valued Customer,

Please find attached the report for SGS job SE242288, your reference 304100928, order number 304100928.

If you have any questions or concerns, please don't hesitate to contact your SGS Client Services representative.

Please provide any feedback you have on our service via this link
https://sgs.surveymonkey.com/r/F92B32Q

Best Regards,
SGS Alexandria Customer Service Team
SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928 - Additional**
Order Number	**304100928**
Samples	27

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	**SE242288B R0**
Date Received	8/2/2023
Date Reported	13/2/2023

COMMENTS

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

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Huong CRAWFORD
Production Manager

Shane MCDERMOTT
Inorganic/Metals Chemist

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 8/2/2023

PARAMETER	UOM	LOR	HA102_0.3 SOIL - 25/1/2023 SE242288B.020	HA103_0.3 SOIL - 25/1/2023 SE242288B.021	HA104_0.3 SOIL - 25/1/2023 SE242288B.022	HA108_0.3 SOIL - 25/1/2023 SE242288B.023	HA109_0.3 SOIL - 25/1/2023 SE242288B.024
Lead, Pb	mg/kg	1	910	1200	460	480	350
Zinc, Zn	mg/kg	2	880	1000	960	370	-

PARAMETER	UOM	LOR	HA111_0.3 SOIL - 25/1/2023 SE242288B.025	HA112_0.3 SOIL - 25/1/2023 SE242288B.026	HA116_0.3 SOIL - 25/1/2023 SE242288B.027
Lead, Pb	mg/kg	1	360	350	-
Zinc, Zn	mg/kg	2	310	130	180

Moisture Content [AN002] Tested: 8/2/2023

PARAMETER	UOM	LOR	HA102_0.3 SOIL - 25/1/2023 SE242288B.020	HA103_0.3 SOIL - 25/1/2023 SE242288B.021	HA104_0.3 SOIL - 25/1/2023 SE242288B.022	HA108_0.3 SOIL - 25/1/2023 SE242288B.023	HA109_0.3 SOIL - 25/1/2023 SE242288B.024
% Moisture	%w/w	1	11.5	15.8	26.9	10.5	19.6

PARAMETER	UOM	LOR	HA111_0.3 SOIL - 25/1/2023 SE242288B.025	HA112_0.3 SOIL - 25/1/2023 SE242288B.026	HA116_0.3 SOIL - 25/1/2023 SE242288B.027
% Moisture	%w/w	1	16.7	20.6	17.8

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.
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.

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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Hi GBS team,

Please book this in, thanks.

Kind Regards,

Huong Crawford
Industries & Environment
Production Manager

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Phone: +61 (0)2 8594 0403
Fax: + 61 (0)2 8594 0499
E-mail: Huong.Crawford@sgs.com
Web: www.au.sgs.com

View Your Results Online: engage.sgs.com

From: Henry Ongerth <henry.ongerth@cardno.com.au>
Sent: Wednesday, 8 February 2023 4:34 PM
To: AU.Environmental.Sydney, AU (Sydney) <AU.Environmental.Sydney@SGS.com>
Cc: Callum Laker <callum.laker@cardno.com.au>; Sam Levi <sam.levi@cardno.com.au>; Darren Hanvey <darren.hanvey@cardno.com.au>
Subject: [EXTERNAL] RE: Report Job SE242288, your reference 304100928, order number 304100928

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Hi SGS,

Can I please request that the following samples (currently on hold) be analysed as per the below (standard TAT):

Sample ID	Analysis Requested	
	Lead	Zinc
HA102_0.3	x	x
HA103_0.3	x	x
HA104_0.3	x	x
HA108_0.3	x	x
HA109_0.3	x	
HA111_0.3	x	x
HA112_0.3	x	
HA116_0.3		x

Kind regards,

Henry Ongerth
Graduate Engineer - Rotation Program

henry.ongerth@cardno.com.au

Stantec Australia
Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

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From: AU.Environmental.Sydney@SGS.com <AU.Environmental.Sydney@SGS.com>
Sent: Friday, 3 February 2023 4:54 PM
To: Henry Ongerth <henry.ongerth@cardno.com.au>
Subject: Report Job SE242288, your reference 304100928, order number 304100928

Dear Valued Customer,

Please find attached the report for SGS job SE242288, your reference 304100928, order number 304100928.

If you have any questions or concerns, please don't hesitate to contact your SGS Client Services representative.

Please provide any feedback you have on our service via this link
https://sgs.surveymonkey.com/r/F92B32Q

Best Regards,
SGS Alexandria Customer Service Team
SGS Australia Pty Ltd
Phone: +61 (0)2 8594 0400

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928**
Order Number	**304100928**
Samples	5

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	**SE242738 R0**
Date Received	6/2/2023
Date Reported	13/2/2023

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Sample #5: A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.
Sample #1-4: A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures due to large volume. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Industries and Environment recommends supplying approximately 50-100g of sample in a separate container.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Chemist

Dong LIANG
Metals/Inorganics Team Leader

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane MCDERMOTT
Inorganic/Metals Chemist

Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 7/2/2023

PARAMETER	UOM	LOR	HA201 0.1 SOIL - 3/2/2023 SE242738.001	HA202 0.1 SOIL - 3/2/2023 SE242738.002	HA203 0.1 SOIL - 3/2/2023 SE242738.003	HA204 0.1 SOIL - 3/2/2023 SE242738.004	DUP1 SOIL - 3/2/2023 SE242738.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 7/2/2023

PARAMETER	UOM	LOR	HA201 0.1 SOIL - 3/2/2023 SE242738.001	HA202 0.1 SOIL - 3/2/2023 SE242738.002	HA203 0.1 SOIL - 3/2/2023 SE242738.003	HA204 0.1 SOIL - 3/2/2023 SE242738.004	DUP1 SOIL - 3/2/2023 SE242738.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 7/2/2023

PARAMETER	UOM	LOR	HA201 0.1 SOIL - 3/2/2023 SE242738.001	HA202 0.1 SOIL - 3/2/2023 SE242738.002	HA203 0.1 SOIL - 3/2/2023 SE242738.003	HA204 0.1 SOIL - 3/2/2023 SE242738.004	DUP1 SOIL - 3/2/2023 SE242738.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**61**	**59**	**71**	**76**	**82**
TRH C29-C36	mg/kg	45	**99**	**82**	**87**	**100**	**100**
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	**140**	**120**	**140**	**150**	**150**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**160**	**140**	**160**	**180**	**180**
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 7/2/2023

PARAMETER	UOM	LOR	HA201 0.1 SOIL - 3/2/2023 SE242738.001	HA202 0.1 SOIL - 3/2/2023 SE242738.002	HA203 0.1 SOIL - 3/2/2023 SE242738.003	HA204 0.1 SOIL - 3/2/2023 SE242738.004	DUP1 SOIL - 3/2/2023 SE242738.005
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	**0.2**	<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	<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

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 7/2/2023

PARAMETER	UOM	LOR	HA201 0.1 SOIL - 3/2/2023 SE242738.001	HA202 0.1 SOIL - 3/2/2023 SE242738.002	HA203 0.1 SOIL - 3/2/2023 SE242738.003	HA204 0.1 SOIL - 3/2/2023 SE242738.004	DUP1 SOIL - 3/2/2023 SE242738.005
Lead, Pb	mg/kg	1	98	22	15	31	19

Moisture Content [AN002] Tested: 7/2/2023

PARAMETER	UOM	LOR	HA201 0.1 SOIL - 3/2/2023 SE242738.001	HA202 0.1 SOIL - 3/2/2023 SE242738.002	HA203 0.1 SOIL - 3/2/2023 SE242738.003	HA204 0.1 SOIL - 3/2/2023 SE242738.004	DUP1 SOIL - 3/2/2023 SE242738.005
% Moisture	%w/w	1	**14.5**	**10.7**	**9.8**	**14.3**	**9.6**

Fibre Identification in soil [AS4964/AN602] Tested: 9/2/2023

PARAMETER	UOM	LOR	HA201 0.1 SOIL - 3/2/2023 SE242738.001	HA202 0.1 SOIL - 3/2/2023 SE242738.002	HA203 0.1 SOIL - 3/2/2023 SE242738.003	HA204 0.1 SOIL - 3/2/2023 SE242738.004	DUP1 SOIL - 3/2/2023 SE242738.005
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

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.
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.
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). 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.
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.

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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law .

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source: Sydney.pdf page: 4 SGS Ref: SE242738_COC

CHAIN OF CUSTODY RECORD

Cardno now Stantec

LAB Name	SGS
Address	

Client	Stantec Australia Pty Ltd suite 2 level 2, 22 honey suckle drive Newcastle NSW 2300	**Contact Numbers** **Phone** 0249 654555 **Fax** 0249 654666
Contact	Brock Collinson	**E-mail** brock.collinson@cardno.com.au; henry.ongerth@cardno.com.au
Sampled by	Brock Collinson	
Project Ref:	304100928	**Date Results Required** Standard TAT

Laboratory LIMS ID	Client Sample ID	Date Sampled	Matrix: Soil	Matrix: Water	Containers/Preservation: Soil Jar (G) Nat. Orange	Purple JAR	Orange Jar	50mL VOA Vial (G) H_2SO_4 Maroon	0.1-1.0 litre (P) H_2SO_4 Maroon	0.2-1.0 litre (G) H_2SO_4 Maroon	0.1-0.2 (P) Filtered?? Y=Yes, N=No (HNO3) Red	0.2l (P) NaOH Blue	Other - Zip Lock Bag	Analysis Required: BTEX, PAH, TRH, LEAD, ASBESTOS	HOLD	TRH	BTEX	
1	HA201 0.1	3/02/2023	X		X									X				
	HA201 0.3	3/02/2023	X		X										X			
2	HA202 0.1	3/02/2023	X		X									X				
	HA202 0.3	3/02/2023	X		X										X			
3	HA203 0.1	3/02/2023	X		X									X				
	HA203 0.3	3/02/2023	X		X										X			
4	HA204 0.1	3/02/2023	X		X									X				
	HA204 0.3	3/02/2023	X		X										X			
5	DUP1	3/02/2023	X		X									X				
	TRIP1	3/02/2023	X		X										X			
	TRIP SPIKE	3/02/2023														X	X	
	TRIP BLANK	3/02/2023														X	X	

SGS EHS Sydney COC

SE242738

All samples chilled immediately after sampling event.

Relinquished by Brock Collinson Signature Date/Time 3/02/2023

Received by Signature Date/Time 06/02/23 @10:35 *Custody Seals Intact? / Samples Received Chilled?*

3Day

SGS

Page No: 1/4

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 14.2.23 Received By: Laura Lwin Cooling Method: ☐ Ice ☑ Icepack ☐ None Samples intact: ☑ Yes ☐ No

Logged-in Date: Time of Receipt: Cooler Sealed: ☐ Yes ☐ No ☑ N/A Temperature: ☐ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client Information | **PO No.:** | **Project No.:** 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 **After Hours Phone Number:**

Fax Number: **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	Total Lead	Total Zinc	Forward to Eurofins for Analysis	BTEX			
	HA301_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QA110	0.1	10/02/2023	AM/PM	Soil	Jar					X							
	QC110	0.1	10/02/2023	AM/PM	Soil	Jar					X			X				
	HA301_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA302_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA302_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA303_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA303_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA304_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA304_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA305_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA305_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA306_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA306_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA307_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA308_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA308_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA309_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA309_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA310_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA310_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							

Sampled By: Henry Ongerth **Date:** 10/02/2023

Relinquished By: Henry Ongerth **Date:** 13/02/2023 **Time:** 5:55pm

964020

SGS

Page No: 2/4

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 14.2.23 Received By: Laura Lucan Cooling Method: ☐ Ice ☑ Icepack ☐ None Samples Intact: ☑ Yes ☐ No

Logged-in Date: Time of Receipt: 15:33 Cooler Sealed: ☐ Yes ☐ No ☑ N/A Temperature: ☐ Ambient ☑ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information PO No.: Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 After Hours Phone Number:

Fax Number: Email: henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	Total Lead	Total Zinc	Forward to Eurofins for Analysis	BTEX			
	HA311_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QA111	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QC111	0.1	10/02/2023	AM/PM	Soil	Jar	X	X						X				
	HA311_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA312_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA312_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA313_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA313_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA314_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA314_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA315_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA315_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA316_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA316_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA317_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA317_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA318_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA318_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA319_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA319_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA320_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										

Sampled By: Henry Ongerth Date: 10/02/2023

Relinquished By: Henry Ongerth Date: 13/02/2023 Time: 5:55pm

964020

SGS

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 14.2.23 Received By: Laura Lvan Cooling Method: ☐ Ice ☑ Icepack ☐ None Samples intact: ☑ Yes ☐ No

Logged-in Date: Time of Receipt: Cooler Sealed: ☐ Yes ☐ No ☑ N/A Temperature: ☐ Ambient ☑ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client Information PO No.: Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 **After Hours Phone Number:**

Fax Number: **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	Total Lead	Total Zinc	Forward to Eurofins for Analysis	BTEX			
	QA112	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QC112	0.1	10/02/2023	AM/PM	Soil	Jar	X	X						X				
	HA320_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA321_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA321_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA322_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA322_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA323_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA323_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA324_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA324_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA325_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QA113	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QC113	0.1	10/02/2023	AM/PM	Soil	Jar	X	X						X				
	HA325_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA326_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA326_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA327_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA327_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA328_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA328_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							

Sampled By: Henry Ongerth **Date:** 10/02/2023

Relinquished By: Henry Ongerth **Date:** 13/02/2023 **Time:** 5:55pm

964020

SGS

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 14-2-23 Received By: Laura Cwan Cooling Method: ☐ Ice ☑ Icepack ☐ None Samples intact: ☑ Yes ☐ No

Logged-in Date: Time of Receipt: Cooler Sealed: ☐ Yes ☐ No ☑ N/A Temperature: ☐ Ambient ☑ Chilled 8.9°C

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client Information PO No.: Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 After Hours Phone Number:

Fax Number: Email: henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	Total Lead	Total Zinc	Forward to Eurofins for Analysis	BTEX	TRH		
	HA329_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA329_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA330_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA330_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	HA331_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA331_0.2	0.2	10/02/2023	AM/PM	Soil	ZLB					X							
	HA331-0.2-PACM	0.2	10/02/2023	AM/PM	Soil	ZLB					X							
	HA331_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
	RIN_230210		10/02/2023	AM/PM	Water	Bottle						X	X					
	TAP01		10/02/2023	AM/PM	Water	Bottle						X	X					
	TAP02		10/02/2023	AM/PM	Water	Bottle						X	X					
	TAP03		10/02/2023	AM/PM	Water	Bottle						X	X					
	TS		Lap Prepared	ap Prepare	Soil	Vial									X	X		
	TB		Lap Prepared	ap Prepare	Soil	Vial									X	X		

Sampled By: Henry Ongerth **Date:** 10/02/2023

Relinquished By: Henry Ongerth **Date:** 13/02/2023 **Time:** 5:55pm

9640 20

Stantec Australia Pty Ltd
Level 22, 570 Bourke Street
Melbourne
VIC 3000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Henry Ongerth**

Report **964020-S**
Project name
Project ID 304100928
Received Date Feb 14, 2023

Client Sample ID			**QC111**	**QC112**	**QC113**
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S23-Fe0035095**	**S23-Fe0035096**	**S23-Fe0035097**
Date Sampled			**Feb 10, 2023**	**Feb 10, 2023**	**Feb 10, 2023**
Test/Reference	LOR	Unit			
Heavy Metals					
Lead	5	mg/kg	550	260	140
Zinc	5	mg/kg	390	190	200
Sample Properties					
% Moisture	1	%	31	10	6.2

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Sydney	Feb 22, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Feb 16, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: Stantec Australia Pty Ltd (NSW/ACT)
Address: Level 22, 570 Bourke Street
Melbourne
VIC 3000

Project Name:
Project ID: 304100928

Order No.:
Report #: 964020
Phone:
Fax:

Received: Feb 14, 2023 4:00 PM
Due: Feb 21, 2023
Priority: 5 Day
Contact Name: Henry Ongerth

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail						HOLD	Lead	Zinc	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	QC111	Feb 10, 2023		Soil	S23-Fe0035095		X	X	X
2	QC112	Feb 10, 2023		Soil	S23-Fe0035096		X	X	X
3	QC113	Feb 10, 2023		Soil	S23-Fe0035097		X	X	X
4	QC110	Feb 10, 2023		Soil	S23-Fe0035098	X			
Test Counts						1	3	3	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Lead			mg/kg	< 5			5	Pass	
Zinc			mg/kg	< 5			5	Pass	
LCS - % Recovery									
Heavy Metals									
Lead			%	106			80-120	Pass	
Zinc			%	103			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Lead	S23-Fe0047139	NCP	%	92			75-125	Pass	
Zinc	S23-Fe0047139	NCP	%	85			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	W23-Fe0035402	NCP	%	26	22	19	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	S23-Fe0035097	CP	mg/kg	140	140	<1	30%	Pass	
Zinc	S23-Fe0035097	CP	mg/kg	200	200	1.9	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Bonnie Pu	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928**
Order Number	**304100928**
Samples	40

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	**SE243062 R0**
Date Received	13/2/2023
Date Reported	21/2/2023

COMMENTS

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

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Chemist

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Shane MCDERMOTT
Inorganic/Metals Chemist

VOC's in Soil [AN433] Tested: 14/2/2023

PARAMETER	UOM	LOR	TS SOIL - 10/2/2023 SE243062.039	TB SOIL - 10/2/2023 SE243062.040
Benzene	mg/kg	0.1	[87%]	<0.1
Toluene	mg/kg	0.1	[91%]	<0.1
Ethylbenzene	mg/kg	0.1	[93%]	<0.1
m/p-xylene	mg/kg	0.2	[93%]	<0.2
o-xylene	mg/kg	0.1	[94%]	<0.1
Total Xylenes*	mg/kg	0.3	-	<0.3
Total BTEX*	mg/kg	0.6	-	<0.6
Naphthalene (VOC)*	mg/kg	0.1	-	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 14/2/2023

PARAMETER	UOM	LOR	TB SOIL - 10/2/2023 SE243062.040
TRH C6-C9	mg/kg	20	<20
Benzene (F0)	mg/kg	0.1	<0.1
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: 14/2/2023

PARAMETER	UOM	LOR	TB SOIL - 10/2/2023 SE243062.040
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

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 15/2/2023

PARAMETER	UOM	LOR	HA301_0.1 SOIL - 10/2/2023 SE243062.001	HA302_0.1 SOIL - 10/2/2023 SE243062.002	HA303_0.1 SOIL - 10/2/2023 SE243062.003	HA304_0.1 SOIL - 10/2/2023 SE243062.004	HA305_0.1 SOIL - 10/2/2023 SE243062.005
Lead, Pb	mg/kg	1	25	17	9	10	32
Zinc, Zn	mg/kg	2	90	22	15	12	32

PARAMETER	UOM	LOR	HA306_0.1 SOIL - 10/2/2023 SE243062.006	HA307_0.1 SOIL - 10/2/2023 SE243062.007	HA308_0.1 SOIL - 10/2/2023 SE243062.008	HA309_0.1 SOIL - 10/2/2023 SE243062.009	HA310_0.1 SOIL - 10/2/2023 SE243062.010
Lead, Pb	mg/kg	1	29	52	31	340	190
Zinc, Zn	mg/kg	2	77	72	63	280	230

PARAMETER	UOM	LOR	HA311_0.1 SOIL - 10/2/2023 SE243062.011	QA111 SOIL - 10/2/2023 SE243062.012	HA312_0.1 SOIL - 10/2/2023 SE243062.013	HA313_0.1 SOIL - 10/2/2023 SE243062.014	HA314_0.1 SOIL - 10/2/2023 SE243062.015
Lead, Pb	mg/kg	1	460	460	97	50	96
Zinc, Zn	mg/kg	2	200	200	100	95	160

PARAMETER	UOM	LOR	HA315_0.1 SOIL - 10/2/2023 SE243062.016	HA316_0.1 SOIL - 10/2/2023 SE243062.017	HA317_0.1 SOIL - 10/2/2023 SE243062.018	HA318_0.1 SOIL - 10/2/2023 SE243062.019	HA319_0.1 SOIL - 10/2/2023 SE243062.020
Lead, Pb	mg/kg	1	81	71	270	120	73
Zinc, Zn	mg/kg	2	160	140	290	69	230

PARAMETER	UOM	LOR	HA320_0.1 SOIL - 10/2/2023 SE243062.021	QA112 SOIL - 10/2/2023 SE243062.022	HA321_0.1 SOIL - 10/2/2023 SE243062.023	HA322_0.1 SOIL - 10/2/2023 SE243062.024	HA323_0.1 SOIL - 10/2/2023 SE243062.025
Lead, Pb	mg/kg	1	240	260	280	75	94
Zinc, Zn	mg/kg	2	170	180	550	92	130

PARAMETER	UOM	LOR	HA324_0.1 SOIL - 10/2/2023 SE243062.026	HA325_0.1 SOIL - 10/2/2023 SE243062.027	QA113 SOIL - 10/2/2023 SE243062.028	HA326_0.1 SOIL - 10/2/2023 SE243062.029	HA327_0.1 SOIL - 10/2/2023 SE243062.030
Lead, Pb	mg/kg	1	83	120	110	47	17
Zinc, Zn	mg/kg	2	84	160	160	77	42

PARAMETER	UOM	LOR	HA328_0.1 SOIL - 10/2/2023 SE243062.031	HA329_0.1 SOIL - 10/2/2023 SE243062.032	HA330_0.1 SOIL - 10/2/2023 SE243062.033	HA331_0.1 SOIL - 10/2/2023 SE243062.034
Lead, Pb	mg/kg	1	10	91	200	1600
Zinc, Zn	mg/kg	2	16	140	220	830

Moisture Content [AN002] Tested: 14/2/2023

PARAMETER	UOM	LOR	HA301_0.1 SOIL - 10/2/2023 SE243062.001	HA302_0.1 SOIL - 10/2/2023 SE243062.002	HA303_0.1 SOIL - 10/2/2023 SE243062.003	HA304_0.1 SOIL - 10/2/2023 SE243062.004	HA305_0.1 SOIL - 10/2/2023 SE243062.005
% Moisture	%w/w	1	15.8	8.1	6.9	6.9	10.2

PARAMETER	UOM	LOR	HA306_0.1 SOIL - 10/2/2023 SE243062.006	HA307_0.1 SOIL - 10/2/2023 SE243062.007	HA308_0.1 SOIL - 10/2/2023 SE243062.008	HA309_0.1 SOIL - 10/2/2023 SE243062.009	HA310_0.1 SOIL - 10/2/2023 SE243062.010
% Moisture	%w/w	1	8.6	6.3	3.9	20.3	27.3

PARAMETER	UOM	LOR	HA311_0.1 SOIL - 10/2/2023 SE243062.011	QA111 SOIL - 10/2/2023 SE243062.012	HA312_0.1 SOIL - 10/2/2023 SE243062.013	HA313_0.1 SOIL - 10/2/2023 SE243062.014	HA314_0.1 SOIL - 10/2/2023 SE243062.015
% Moisture	%w/w	1	27.8	31.2	20.1	6.3	11.1

PARAMETER	UOM	LOR	HA315_0.1 SOIL - 10/2/2023 SE243062.016	HA316_0.1 SOIL - 10/2/2023 SE243062.017	HA317_0.1 SOIL - 10/2/2023 SE243062.018	HA318_0.1 SOIL - 10/2/2023 SE243062.019	HA319_0.1 SOIL - 10/2/2023 SE243062.020
% Moisture	%w/w	1	14.5	8.3	15.3	15.1	8.6

PARAMETER	UOM	LOR	HA320_0.1 SOIL - 10/2/2023 SE243062.021	QA112 SOIL - 10/2/2023 SE243062.022	HA321_0.1 SOIL - 10/2/2023 SE243062.023	HA322_0.1 SOIL - 10/2/2023 SE243062.024	HA323_0.1 SOIL - 10/2/2023 SE243062.025
% Moisture	%w/w	1	11.1	11.8	7.5	6.6	6.9

PARAMETER	UOM	LOR	HA324_0.1 SOIL - 10/2/2023 SE243062.026	HA325_0.1 SOIL - 10/2/2023 SE243062.027	QA113 SOIL - 10/2/2023 SE243062.028	HA326_0.1 SOIL - 10/2/2023 SE243062.029	HA327_0.1 SOIL - 10/2/2023 SE243062.030
% Moisture	%w/w	1	8.4	6.1	5.6	5.1	4.7

PARAMETER	UOM	LOR	HA328_0.1 SOIL - 10/2/2023 SE243062.031	HA329_0.1 SOIL - 10/2/2023 SE243062.032	HA330_0.1 SOIL - 10/2/2023 SE243062.033	HA331_0.1 SOIL - 10/2/2023 SE243062.034	TB SOIL - 10/2/2023 SE243062.040
% Moisture	%w/w	1	2.5	15.1	16.0	13.5	<1.0

Trace Metals (Total) in Water by ICPMS [AN022/AN318] Tested: 15/2/2023

PARAMETER	UOM	LOR	RIN_230210 WATER - 10/2/2023 SE243062.035	TAP01 WATER - 10/2/2023 SE243062.036	TAP02 WATER - 10/2/2023 SE243062.037	TAP03 WATER - 10/2/2023 SE243062.038
Total Lead	µg/L	1	<1	**2**	**2**	**6**
Total Zinc	µg/L	5	<5	**98**	**110**	**140**

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.
AN022/AN318	Following acid digestion of un filtered sample, determination of elements at trace level in waters by ICP-MS technique, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN022	The water sample is digested with Nitric Acid and made up to the original volume similar to APHA3030E.
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.
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.
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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13/2 @ 5:57pm

SGS

Page No: 1/4

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 13.2.23 | Received By: | Cooling Method: ☐ Ice ☒ Icepack ☐ None | Samples intact: ☐ Yes ☐ No

Logged-in Date: | Time of Receipt: 6:00 PM | Cooler Sealed: ☒ Yes ☐ No ☐ N/A | Temperature: ☐ Ambient ☒ Chilled 6.1 °C

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth
Company: Stantec
Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia
Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au
Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935
Attached Parameter List: ☐ Yes ☐ No
Replacement Sample Containers Required: ☐ Yes ☐ No
Results Required By: Standard TAT Urgent TA requires lab approval
Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information | PO No.: | Project No.: 304100928

Company Name: Stantec
Contact Name: Henry Ongerth
Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia
Phone Number: 0421324022 | **After Hours Phone Number:**
Fax Number: | **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	Total Lead	Total Zinc	Forward to Eurofins for Analysis	BTEX			
1	HA301_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QA110	0.1	10/02/2023	AM/PM	Soil	Jar					X							
	QC110	0.1	10/02/2023	AM/PM	Soil	Jar					X			X				
	HA301_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
2	HA302_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA302_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
3	HA303_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA303_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
4	HA304_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA304_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
5	HA305_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA305_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
6	HA306_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA306_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
7	HA307_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
8	HA308_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA308_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
9	HA309_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA309_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
10	HA310_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA310_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							

SGS EHS Sydney COC
SE243062

Sampled By: Henry Ongerth **Date:** 10/02/2023

Relinquished By: Henry Ongerth **Date:** 13/02/2023 **Time:** 5:55pm

SGS

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 13/02/23 Received By: B. Subaran Cooling Method: ☐ Ice ☑ Icepack ☐ None Samples intact: ☑ Yes ☐ No

Logged-in Date: Time of Receipt: 6:00 Cooler Sealed: ☑ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☑ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information | PO No.: | Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 **After Hours Phone Number:**

Fax Number: **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	Total Lead	Total Zinc	Forward to Eurofins for Analysis	BTEX			
11	HA311_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
12	QA111	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QC111	0.1	10/02/2023	AM/PM	Soil	Jar	X	X						X				
	HA311_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
13	HA312_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA312_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
14	HA313_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA313_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
15	HA314_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA314_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
16	HA315_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA315_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
17	HA316_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA316_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
18	HA317_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA317_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
19	HA318_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA318_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
20	HA319_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA319_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
21	HA320_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										

Sampled By: Henry Ongerth **Date:** 10/02/2023

Relinquished By: Henry Ongerth **Date:** 13/02/2023 **Time:** 5:55pm

SGS

Request for Laboratory Services and Chain of Custody Form

SGS Australia, Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 13/02/23 Received By: B. Subaraj Cooling Method: ☐ Ice ☑ Icepack ☐ None Samples intact: ☑ Yes ☐ No

Logged-in Date: Time of Receipt: 6.00 Cooler Sealed: ☑ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☑ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information | PO No.: | Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 **After Hours Phone Number:**

Fax Number: **Email:** henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested											
							Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	Total Lead	Total Zinc	Forward to Eurofins for Analysis	BTEX			
22	QA112	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QC112	0.1	10/02/2023	AM/PM	Soil	Jar	X	X						X				
	HA320_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
23	HA321_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA321_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
24	HA322_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA322_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
25	HA323_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA323_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
26	HA324_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA324_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
27	HA325_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
28	QA113	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	QC113	0.1	10/02/2023	AM/PM	Soil	Jar	X	X						X				
	HA325_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
29	HA326_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA326_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
30	HA327_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA327_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
31	HA328_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA328_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							

Sampled By: Henry Ongerth **Date:** 10/02/2023

Relinquished By: Henry Ongerth **Date:** 13/02/2023 **Time:** 5:55pm

SGS

Page No: 4/4

Request for Laboratory Services and Chain of Custody Form

SGS Australia. Unit 16, 33 Maddox Street, Alexandria, NSW 2015 Ph: +61 2 8594 0400 Fax: +61 2 8594 0499 Email: au.samplereceipt.sydney@sgs.com

Laboratory Section

Received Date: 13/02/23 Received By: S. Subaraj Cooling Method: ☐ Ice ☑ Icepack ☐ None Samples intact: ☑ Yes ☐ No

Logged-in Date: Time of Receipt: 6:00 Cooler Sealed: ☑ Yes ☐ No ☐ N/A Temperature: ☐ Ambient ☐ Chilled

COD must pay via cheque or credit card before analysis is commenced. AMEX & DINERS cards incur a 5% surcharge

INVOICE TO:

Name: Henry Ongerth

Company: Stantec

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Email: Accounts.AU@stantec.com and henry.ongerth@cardno.com.au

Phone: Fax:

Quote #: Stant - IE - JUL 22 - 275935

Attached Parameter List: ☐ Yes ☐ No

Replacement Sample Containers Required: ☐ Yes ☐ No

Results Required By: Standard TAT Urgent TA requires lab approval

Notes: Please submit all results in esdat format. Also please make sure that all analytes are extracted before holding time is reached

Client information		PO No.:	Project No.: 304100928

Company Name: Stantec

Contact Name: Henry Ongerth

Address: Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Phone Number: 0421324022 After Hours Phone Number:

Fax Number: Email: henry.ongerth@cardno.com.au

Note: Results will be sent via email to an unlimited number of addresses for no additional fee. In the absence of email, fax is available upon request.

Indicate results format (please check one): Email ☑ Fax ☐

SAMPLE INFORMATION

Lab Sample ID	Sample Identifier	Depth of sample (m)	Date Sampled	Time	Matrix: Soil Water Other	Sampling containers	Analysis Requested: Lead	Zinc	Asbestos (presence/absence)	Asbestos quantification (NEPM)	Hold	Total Lead	Total Zinc	Forward to Eurofins for Analysis	BTEX	TRH		
32	HA329_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA329_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
33	HA330_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA330_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
34	HA331_0.1	0.1	10/02/2023	AM/PM	Soil	Jar	X	X										
	HA331_0.2	0.2	10/02/2023	AM/PM	Soil	ZLB					X							
	HA331-0.2-PACM	0.2	10/02/2023	AM/PM	Soil	ZLB					X							
	HA331_0.3	0.3	10/02/2023	AM/PM	Soil	Jar					X							
35	RIN_230210		10/02/2023	AM/PM	Water	Bottle						X	X					
36	TAP01		10/02/2023	AM/PM	Water	Bottle						X	X					
37	TAP02		10/02/2023	AM/PM	Water	Bottle						X	X					
38	TAP03		10/02/2023	AM/PM	Water	Bottle						X	X					
39	TS		Lap Prepared	ap Prepare	Soil	Vial									X	X		
40	TB		Lap Prepared	ap Prepare	Soil	Vial									X	X		

Sampled By: Henry Ongerth Date: 10/02/2023

Relinquished By: Henry Ongerth Date: 13/02/2023 Time: 5:55pm

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928 - Additional**
Order Number	**304100928**
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	**SE243062A R0**
Date Received	20 Feb 2023
Date Reported	15 Mar 2023

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Sample #41: Asbestos found in approx 15x8x3mm cement sheet fragments >10.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin and Ravee Sivasubramaniam .

SIGNATORIES

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*
SE243062A.042	HA331-0.2_PACM	Other	65x40x3mm Cement Sheet Fragment	10 Feb 2023	Chrysotile Asbestos Detected	

RESULTS

Fibre Identification in soil Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE243062A.041	HA331-0.2	Soil	515g Sand, Soil, Rocks	10 Feb 2023	Chrysotile Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	>0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 23/2/2023

PARAMETER	UOM	LOR	HA331-0.2 SOIL - 10/2/2023 SE243062A.041
Total Sample Weight*	g	1	**515**
Bonded ACM in >7mm Sample*	g	0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	**0.261**
AF/FA in <2mm Sample*	g	0.00001	**0.0202**
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	**0.051**
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	**0.004**
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	**0.055**
Fibre Type*	No unit	-	Chrysotile

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/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.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client only. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

This test report shall not be reproduced, except in full.

source: SE_Autoscan.pdf page: 1 SGS Ref: SE243062A_COC

Yin, Emily (Sydney)

From: Henry Ongerth <henry.ongerth@cardno.com.au>
Sent: Monday, 20 February 2023 5:44 PM
To: AU.SampleReceipt.Sydney, AU (Sydney); AU.Environmental.Sydney, AU (Sydney)
Cc: Callum Laker; Sam Levi
Subject: [EXTERNAL] RE: SGS Sample Receipt Advice (Ref: 304100928, Lab Ref: SE243062)

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Hi SGS,

Can I please request that you analyse the following samples for asbestos (NEPM/WA) method:

- HA331-0.2
- HA331-0.2-PACM

Kind regards,

Henry Ongerth
Graduate Engineer - Rotation Program

SGS EHS Alexandria Laboratory
SE243062A COC
Received: 20 – Feb – 2023

henry.ongerth@cardno.com.au

Stantec Australia
Level 9, The Forum, 203 Pacific Highway St Leonards New South Wales 2065 Australia

Stantec

Stantec acknowledges the Traditional Owners of Country throughout Australia and recognises their continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures and to Elders past and present.

The content of this email is the confidential property of Stantec and should not be copied, modified, retransmitted, or used for any purpose except with Stantec's written authorization. If you are not the intended recipient, please delete all copies and notify us immediately.

Please consider the environment before printing this email.

From: AU.Samplereceipt.Sydney@SGS.com <AU.Samplereceipt.Sydney@SGS.com>
Sent: Tuesday, 14 February 2023 8:18 PM
To: Henry Ongerth <henry.ongerth@cardno.com.au>
Subject: SGS Sample Receipt Advice (Ref: 304100928, Lab Ref: SE243062)

Dear Henry Ongerth,

Please be advised we have received samples for analysis as detailed in the attached documentation.

Please provide any feedback you have on our service via this link https://sgs.surveymonkey.com/r/F92B32Q

Best regards,
SGS Alexandria Sample Administration Team

SAMPLE RECEIPT ADVICE

SE243062A

CLIENT DETAILS

Contact	Henry Ongerth
Client	STANTEC AUSTRALIA PTY LTD
Address	LEVEL 22, 570 BOURKE STREET MELBOURNE VIC 3000
Telephone	61 3 85547000
Facsimile	(Not specified)
Email	henry.ongerth@cardno.com.au
Project	**304100928 - Additional**
Order Number	**304100928**
Samples	42

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Mon 20/2/2023
Report Due	Mon 27/2/2023
SGS Reference	**SE243062A**

SUBMISSION DETAILS

This is to confirm that 42 samples were received on Monday 20/2/2023. Results are expected to be ready by COB Monday 27/2/2023. Please quote SGS reference SE243062A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	1 Soil, 1 Material	Type of documentation received	Email
Date documentation received	20/2/2023@5:44pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	6.1°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

SAMPLE RECEIPT ADVICE

SE243062A

CLIENT DETAILS

Client STANTEC AUSTRALIA PTY LTD

Project 304100928 - Additional

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre ID in bulk materials	Fibre Identification in soil	Gravimetric Determination of Asbestos in Soil
041	HA331-0.2	-	2	9
042	HA331-0.2_PACM	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 J QA/QC

			SDG	SGS 21 Dec 2022	SGS 21 Dec 2022		SGS 21 Dec 2022	SGS 21 Dec 2022		SGS 25 Jan 2023	SGS 25 Jan 2023		SGS 25 Jan 2023	SGS 25 Jan 2023		SGS 06 Feb 2023	SGS 06 Feb 2023	
			Field ID	BH27_0.5	QA200	RPD	BH15_0.2	QA400	RPD	HA106-0.1	QA100	RPD	HA112-0.1	QA200	RPD	HA202 0.1	DUP1	RPD
			Sampled Date/Time	19/12/2022	19/12/2022		20/12/2022	20/12/2022		25/01/2023	25/01/2023		25/01/2023	25/01/2023		3/02/2023	3/02/2023	
Chemical Group	**Chemical Name**	**Units**	**EQL**															
	% Moisture	%w/w	1	21.4	19.4	10	12.4	12.6	2	15.2	16.6	9	20.3	19.7	3	10.7	9.6	11
	Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	0	6.1	4.6	28							<0.8	<0.8	0
TRH	TRH C37-C40	mg/kg	100	<100	<100	0	<100	<100	0				<100	<100	0	<100	<100	0
BTEX	Naphthalene (VOC)	mg/kg	0.1	<0.1	<0.1	0	<0.1	0.1	0							<0.1	<0.1	0
	Benzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0							<0.1	<0.1	0
	Benzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.1	0
	Toluene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0							<0.1	<0.1	0
	Ethylbenzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0							<0.1	<0.1	0
	Xylene (m & p)	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0							<0.2	<0.2	0
	Xylene (o)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0							<0.1	<0.1	0
	Xylene Total	mg/kg	0.3	<0.3	<0.3	0	<0.3	<0.3	0							<0.3	<0.3	0
	Total BTEX	mg/kg	0.6	<0.6	<0.6	0	<0.6	<0.6	0							<0.6	<0.6	0
TPH	C6 - C9	mg/kg	20	<20	<20	0	<20	<20	0				<20	<20	0	<20	<20	0
	C10 - C14	mg/kg	20	<20	<20	0	44	28	44				25	27	8	<20	<20	0
	C15 - C28	mg/kg	45	<45	<45	0	270	240	12				110	150	31	59	82	33
	C29-C36	mg/kg	45	<45	<45	0	150	130	14				71	73	3	82	100	20
	+C10 - C36 (Sum of total)	mg/kg	110	<110	<110	0	470	400	16				210	250	17	140	180	25
CRC Care TPH Fractions	C6-C10	mg/kg	25	<25	<25	0	<25	<25	0				<25	<25	0	<25	<25	0
	C10-C16	mg/kg	25	<25	<25	0	63	41	42				34	38	11	<25	<25	0
	C16-C34	mg/kg	90	<90	<90	0	380	330	14				160	200	22	120	150	22
	C34-C40	mg/kg	120	<120	<120	0	<120	<120	0				<120	<120	0	<120	<120	0
	C10 - C40 (Sum of total)	mg/kg	210	<210	<210	0	440	370	17				<210	240	13	<210	<210	0
	F1: C6-C10 less BTEX	mg/kg	25	<25	<25	0	<25	<25	0				<25	<25	0	<25	<25	0
	F2: >C10-C16 less Naphthalene	mg/kg	25	<25	<25	0	63	41	42							<25	<25	0
PAH	1-Methylnaphthalene	mg/kg	0.1	<0.1	<0.1	0	0.5	0.5	0							<0.1	<0.1	0
	2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	0	0.4	0.2	67							<0.1	<0.1	0
	Acenaphthene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0							<0.1	<0.1	0
	Acenaphthylene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0							<0.1	<0.1	0
	Anthracene	mg/kg	0.1	<0.1	<0.1	0	0.1	0.1	0							<0.1	<0.1	0
	Benz(a)anthracene	mg/kg	0.1	<0.1	<0.1	0	0.5	0.4	22							<0.1	<0.1	0
	Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	0	0.6	0.4	40							<0.1	<0.1	0
	Benzo(b+j)fluoranthene	mg/kg	0.1	<0.1	<0.1	0	0.7	0.5	33							<0.1	<0.1	0
	Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	0	0.2	0.2	0							<0.1	<0.1	0
	Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	0	0.5	0.2	86							<0.1	<0.1	0
	Chrysene	mg/kg	0.1	<0.1	<0.1	0	0.5	0.4	22							<0.1	<0.1	0
	Dibenz(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	0	0.1	<0.1	0							<0.1	<0.1	0
	Fluoranthene	mg/kg	0.1	0.2	0.1	67	0.7	0.7	0							<0.1	<0.1	0
	Fluorene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0							<0.1	<0.1	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	0	0.5	0.2	86							<0.1	<0.1	0
	Naphthalene	mg/kg	0.1	<0.1	<0.1	0	0.2	0.1	67							<0.1	<0.1	0
	PAHs (Sum of total)	mg/kg	0.8	<0.8	<0.8	0	6.9	5.3	26							<0.8	<0.8	0
	Phenanthrene	mg/kg	0.1	<0.1	<0.1	0	0.8	0.8	0							<0.1	<0.1	0
	Pyrene	mg/kg	0.1	0.1	<0.1	0	0.7	0.6	15							<0.1	<0.1	0
Metals	Arsenic	mg/kg	1	1	1	0	5	7	33									
	Cadmium	mg/kg	0.3	<0.3	<0.3	0	0.3	0.4	29									
	Chromium (III+VI)	mg/kg	0.5	4.1	4.2	2	11	14	24									
	Copper	mg/kg	0.5	2.2	2	10	19	16	17									
	Lead	mg/kg	1	10	11	10	380	490	25	190	170	11	300	290	3	22	19	15
	Mercury	mg/kg	0.05	<0.05	<0.05	0	0.06	0.05	18									
	Nickel	mg/kg	0.5	1.4	1.5	7	11	11	0									
	Zinc	mg/kg	2	5.2	6	14	260	290	11	170	190	11	210	190	10			
Organochlorine Pesticides	Vic EPA IWRG 621 OCP (Total)*	mg/kg	1	<1	<1	0	<1	<1	0									
	2,4-DDT	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	4,4-DDE	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	a-BHC	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Aldrin	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	b-BHC	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Chlordane (cis)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	gamma-Chlordane	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	d-BHC	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	DDD	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	DDT	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Dieldrin	mg/kg	0.2	<0.2	<0.2	0	0.6	0.7	15									
	Endosulfan I	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Endosulfan II	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Endrin	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Endrin ketone	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	g-BHC (Lindane)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Heptachlor	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Hexachlorobenzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Methoxychlor	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	o,p-DDD	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	o,p'-DDE	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
Organophosphorous Pesticides	Azinophos methyl	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Bromophos-ethyl	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Chlorpyrifos	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Diazinon	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0									
	Dichlorvos	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0									
	Dimethoate	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0									
	Ethion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Fenitrothion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Malathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Methidathion	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0									
Pesticides	Isodrin	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Mirex	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0									
	Parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
Other	Estimated Fibres	mg/kg	100													<100	<100	0
Polychlorinated Biphenyls	Arochlor 1016	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Arochlor 1221	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Arochlor 1232	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Arochlor 1242	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Arochlor 1248	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Arochlor 1254	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Arochlor 1260	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Arochlor 1268	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	Aroclor 1262	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0									
	PCBs (Sum of total)	mg/kg	1	<1	<1	0	<1	<1	0									

			SDG	SGS 13 Feb 2023	SGS 13 Feb 2023		SGS 13 Feb 2023	SGS 13 Feb 2023		SGS 13 Feb 2023	SGS 13 Feb 2023		SGS 25 Jan 2023	44958		SGS 25 Jan 2023	44958		SGS 21 Dec 2022	44946		SGS 21 Dec 2022	44946	
			Field ID	HA311_0.1	QA111	RPD	HA320_0.1	QA112	RPD	HA325_0.1	QA113	RPD	HA106-0.1	QC100	RPD	HA112-0.1	QC200	RPD	BH27_0.5	QC200	RPD	BH15_0.2	QC400	RPD
			Sampled Date/Time	10/02/2023	10/02/2023		10/02/2023	10/02/2023		10/02/2023	10/02/2023		25/01/2023	25/01/2023		25/01/2023	25/01/2023		19/12/2022	19/12/2022		20/12/2022	20/12/2022	
Chemical Group	**Chemical Name**	**Units**	**EQL**																					
	% Moisture	%w/w	1	27.8	31.2	12	11.1	11.8	6	6.1	5.6	9	15.2			20.3			21.4			12.4		
	Total PAH (NEPM/WHO 16)	mg/kg	0.8																<0.8			6.1		
TRH	TRH C37-C40	mg/kg	100													<100			<100			<100		
BTEX	Naphthalene (VOC)	mg/kg	0.1																<0.1	<0.5	0	<0.1	<0.5	0
	Benzene	mg/kg	0.1																<0.1	<0.1	0	<0.1	<0.1	0
	Benzene	mg/kg	0.1													<0.1			<0.1	<0.1	0	<0.1	<0.1	0
	Toluene	mg/kg	0.1																<0.1	<0.1	0	<0.1	<0.1	0
	Ethylbenzene	mg/kg	0.1																<0.1	<0.1	0	<0.1	<0.1	0
	Xylene (m & p)	mg/kg	0.2																<0.2	<0.2	0	<0.2	<0.2	0
	Xylene (o)	mg/kg	0.1																<0.1	<0.1	0	<0.1	<0.1	0
	Xylene Total	mg/kg	0.3																<0.3	<0.3	0	<0.3	<0.3	0
	Total BTEX	mg/kg	0.6																<0.6			<0.6		
TPH	C6 - C9	mg/kg	20													<20	<20	0	<20	<20	0	<20	<20	0
	C10 - C14	mg/kg	20													25	<20	22	<20	<20	0	44	46	4
	C15 - C28	mg/kg	45													110	99	11	<45	<50	0	270	350	26
	C29-C36	mg/kg	45													71	100	34	<45	<50	0	150	230	42
	+C10 - C36 (Sum of total)	mg/kg	110													210	199	5	<110	<50	0	470	626	28
CRC Care TPH Fractions	C6-C10	mg/kg	25													<25	<20	0	<25	<20	0	<25	<20	0
	C10-C16	mg/kg	25													34	<50	0	<25	<50	0	63	75	17
	C16-C34	mg/kg	90													160	170	6	<90	<100	0	380	490	25
	C34-C40	mg/kg	120													<120	<100	0	<120	<100	0	<120	130	8
	C10 - C40 (Sum of total)	mg/kg	210													<210	170	0	<210	<100	0	440	695	45
	F1: C6-C10 less BTEX	mg/kg	25													<25	<20	0	<25	<20	0	<25	<20	0
	F2: >C10-C16 less Naphthalene	mg/kg	25																<25	<50	0	63	75	17
PAH	1-Methylnaphthalene	mg/kg	0.1																<0.1			0.5		
	2-methylnaphthalene	mg/kg	0.1																<0.1			0.4		
	Acenaphthene	mg/kg	0.1																<0.1	<0.5	0	<0.1	<0.5	0
	Acenaphthylene	mg/kg	0.1																<0.1	<0.5	0	<0.1	<0.5	0
	Anthracene	mg/kg	0.1																<0.1	<0.5	0	0.1	<0.5	0
	Benz(a)anthracene	mg/kg	0.1																<0.1	<0.5	0	0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.1																<0.1	<0.5	0	0.6	<0.5	18
	Benzo(b+j)fluoranthene	mg/kg	0.1																<0.1	<0.5	0	0.7	<0.5	33
	Benzo(k)fluoranthene	mg/kg	0.1																<0.1	<0.5	0	0.2	<0.5	0
	Benzo(g,h,i)perylene	mg/kg	0.1																<0.1	<0.5	0	0.5	<0.5	0
	Chrysene	mg/kg	0.1																<0.1	<0.5	0	0.5	0.6	18
	Dibenz(a,h)anthracene	mg/kg	0.1																<0.1	<0.5	0	0.1	<0.5	0
	Fluoranthene	mg/kg	0.1																0.2	<0.5	0	0.7	0.6	15
	Fluorene	mg/kg	0.1																<0.1	<0.5	0	<0.1	<0.5	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.1																<0.1	<0.5	0	0.5	<0.5	0
	Naphthalene	mg/kg	0.1																<0.1	<0.5	0	0.2	<0.5	0
	PAHs (Sum of total)	mg/kg	0.8																<0.8	<0.5	0	6.9	1.2	141
	Phenanthrene	mg/kg	0.1																<0.1	<0.5	0	0.8	<0.5	46
	Pyrene	mg/kg	0.1																0.1	<0.5	0	0.7	<0.5	33
Metals	Arsenic	mg/kg	1																1	<2	0	5	6.1	20
	Cadmium	mg/kg	0.3																<0.3	<0.4	0	0.3	<0.4	0
	Chromium (III+VI)	mg/kg	0.5																4.1	<5	0	11	13	17
	Copper	mg/kg	0.5																2.2	<5	0	19	19	0
	Lead	mg/kg	1	460	460	0	240	260	8	120	110	9	190	280	38	300	420	33	10	11	10	380	320	17
	Mercury	mg/kg	0.05																<0.05	<0.1	0	0.06	<0.1	0
	Nickel	mg/kg	0.5																1.4	<5	0	11	10	10
	Zinc	mg/kg	2	200	200	0	170	180	6	160	160	0	170	210	21	210	240	13	5.2	<5	4	260	250	4
Organochlorine Pesticides	Vic EPA IWRG 621 OCP (Total)*	mg/kg	1																<1	<0.1	0	<1	<1	0
	2,4-DDT	mg/kg	0.1																<0.1			<0.1		
	4,4-DDE	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	a-BHC	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Aldrin	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	b-BHC	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Chlordane (cis)	mg/kg	0.1																<0.1			<0.1		
	gamma-Chlordane	mg/kg	0.1																<0.1			<0.1		
	d-BHC	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	DDD	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	DDT	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Dieldrin	mg/kg	0.2																<0.2	<0.05	0	0.6	<0.5	18
	Endosulfan I	mg/kg	0.2																<0.2	<0.05	0	<0.2	<0.5	0
	Endosulfan II	mg/kg	0.2																<0.2	<0.05	0	<0.2	<0.5	0
	Endosulfan sulphate	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Endrin	mg/kg	0.2																<0.2	<0.05	0	<0.2	<0.5	0
	Endrin aldehyde	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Endrin ketone	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	g-BHC (Lindane)	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Heptachlor	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Heptachlor epoxide	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Hexachlorobenzene	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	Methoxychlor	mg/kg	0.1																<0.1	<0.05	0	<0.1	<0.5	0
	o,p-DDD	mg/kg	0.1																<0.1			<0.1		
	o,p'-DDE	mg/kg	0.1																<0.1			<0.1		
	trans-Nonachlor	mg/kg	0.1																<0.1			<0.1		
Organophosphorous Pesticides	Azinophos methyl	mg/kg	0.2																<0.2	<0.2	0	<0.2	<0.5	0
	Bromophos-ethyl	mg/kg	0.2																<0.2			<0.2		
	Chlorpyrifos	mg/kg	0.2																<0.2	<0.2	0	<0.2	<0.5	0
	Diazinon	mg/kg	0.5																<0.5	<0.2	0	<0.5	<0.5	0
	Dichlorvos	mg/kg	0.5																<0.5	<0.2	0	<0.5	<0.5	0
	Dimethoate	mg/kg	0.5																<0.5	<0.2	0	<0.5	<0.5	0
	Ethion	mg/kg	0.2																<0.2	<0.2	0	<0.2	<0.5	0
	Fenitrothion	mg/kg	0.2																<0.2	<0.2	0	<0.2	<0.5	0
	Malathion	mg/kg	0.2																<0.2	<0.2	0	<0.2	<0.5	0
	Methidathion	mg/kg	0.5																<0.5			<0.5		
Pesticides	Isodrin	mg/kg	0.1																<0.1			<0.1		
	Mirex	mg/kg	0.1																<0.1			<0.1		
	Parathion	mg/kg	0.2																<0.2	<0.2	0	<0.2	<0.5	0
Other	Estimated Fibres	mg/kg	100																					
Polychlorinated Biphenyls	Arochlor 1016	mg/kg	0.2																<0.2	<0.1	0	<0.2	<1	0
	Arochlor 1221	mg/kg	0.2																<0.2	<0.1	0	<0.2	<1	0
	Arochlor 1232	mg/kg	0.2																<0.2	<0.1	0	<0.2	<1	0
	Arochlor 1242	mg/kg	0.2																<0.2	<0.1	0	<0.2	<1	0
	Arochlor 1248	mg/kg	0.2																<0.2	<0.1	0	<0.2	<1	0
	Arochlor 1254	mg/kg	0.2																<0.2	<0.1	0	<0.2	<1	0
	Arochlor 1260	mg/kg	0.2																<0.2	<0.1	0	<0.2	<1	0
	Arochlor 1268	mg/kg	0.2																<0.2			<0.2		
	Aroclor 1262	mg/kg	0.2																<0.2			<0.2		
	PCBs (Sum of total)	mg/kg	1																<1	<0.1	0	<1	<1	0