GCA

Geotechnical Consultants Australia

Kirribilli Capital Pty Ltd

Preliminary Site Investigation

Proposed Development at:

5 Mary Street

Northmead NSW 2152

Lot 43/-/DP8884

E2388-1

18th May 2023

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Report Distribution

Preliminary Site Investigation

Address: 5 Mary Street Northmead NSW 2152

GCA Report No.: E2388-1

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Executive Summary

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GCA understands that the proposed development for this site includes:

1) Demolition of existing onsite structures;
2) Excavation and construction of a lower ground floor for carparking; and
3) Construction of a childcare centre facility.

The objective of this PSI was to provide a preliminary assessment of potentially contaminating activities which may have impacted the site. The scope of work undertaken includes:

- A site inspection to identify potential sources of contamination;
- Soil sampling to identify any contaminants (if present);
- Review of historical investigations relating to the site (if any);
- Review of local Council records and planning certificates;
- Review of the NSW Environment Protection Authority (EPA) environmental contaminated lands register, Protection of the Environment Operations (POEO) Act public register and PFAS Investigation Program map;
- Dial-Before-You-Dig enquiry for an evaluation into local underground services and assets;
- Review of local geological and hydrogeological information, including an evaluation of the WaterNSW registered groundwater bore database;
- Review of Acid Sulphate Soils (ASS) data maps;
- Establish whether data gaps may exist within the investigation;
- Development of a Conceptual Site Model (CSM) to identify the connections between potential sources of contamination, exposure pathways, and human/ecological receptors; and
- Recommendations for additional investigations (if any), based on the identified data gaps and findings of the PSI.

A site investigation was undertaken on the 9th May 2023 by GCA environmental division. During the site inspection, a soil investigation program was undertaken with a judgemental approach in accessing locations across the site to identify areas of contamination. Six (6) soil samples were obtained from the fill layer (0-0.15m) across the site. Additional samples were collected from each location in 500mL bags for Asbestos analysis.

The samples were submitted to a National Association of Testing Authorities, Australia (NATA) accredited laboratories for analysis of Chemicals of Potential Concern (CoPC) that may have impacted the site during historical or present activities.

Analytical results indicate no exceedance of the NEPM 2013 Health and Ecological Assessment Criteria for Residential (A) sites, with the exception of Asbestos detected in sample TP2 in exceedance of the NEPM 2013 Health Screening Level (HSL-A) for Residential (A) sites.

Overall, this site is considered to have a low risk of subsurface contamination. Based on visual observations, the Asbestos contamination is potentially derived from the fibrocement sheds within the site. Therefore, GCA recommends that a *Hazardous Materials Survey (HMS)* is completed for the site structures. This HMS will then recommend site demolition processes and Asbestos removal requirements.

Following demolition of onsite structures and removal of hardstands, a *Detailed Site Investigation (DSI)* should be undertaken for the site with Asbestos sampling collected at double density of the requirements for Table 2 of the NSW EPA, *Contaminated Land Guidelines*, *Sampling Design Part 1 – Application*, 2022.

Finally, an Asbestos Clearance Certificate (issued by a Licenced Asbestos Assessor) will be required to confirm the successful removal of all Asbestos containing material from the site.

Therefore, based on the site investigation and analytical results, GCA considers that the potential for significant contamination of onsite soil to be low and finds that the site can be made suitable for the proposed development and land use (Residential A), provided the recommendations within Section 14 are undertaken.

1. Introduction

Geotechnical Consultants Australia Pty Ltd (GCA) were appointed by Mr. Corey Kavanagh of Kirribilli Capital Pty Ltd (the client) to undertake a Preliminary Site Investigation (PSI) for the site located at No. 5 Mary Street Northmead NSW 2152 (the site). The site is legally identified as Lot 43/-/DP8884 and has an area of approximately 1,322m^2. The site is currently zoned as R2 - Low Density Residential.

GCA understands that the proposed development for this site includes:

1) Demolition of existing onsite structures;
2) Excavation and construction of a lower ground floor for carparking; and
3) Construction of a childcare centre facility.

This PSI report was aimed to provide a preliminary assessment of potentially contaminating activities which may have impacted the site. This report is prepared in accordance with the State Environmental Planning Policy (Resilience and Hazard) 2021 and follows the format outlined in NSW EPA "*Consultants Reporting on Contaminated Lands: Contaminated Land Guidelines*" (2020). In addition, GCA will provide recommendations if further investigation on site is required.

A site inspection was undertaken on 9th May 2023. A soil sampling program, reporting and site photographs were conducted on this day with reference to the relevant regulatory criteria. Further information of the inspection is described in Section 4 of this report.

2. Scope of Work

The PSI has been prepared in general accordance with the following regulatory framework:

- NSW Environmental Protection Authority (EPA) "Consultants Reporting on Contaminated Lands: *Contaminated Land Guidelines*" (2020);
- NSW EPA, *Contaminated Land Guidelines*, *Sampling Design Part 1 – Application*, 2022;
- NSW EPA, *Contaminated Land Guidelines*, *Sampling Design Part 2 – Interpretation*, 2022;
- State Environment Protection Policy (Resilience and Hazard) 2021; and
- National Environmental Protection (Assessment of Site Contamination) Measure – National Environmental Protection Council 2013.

The scope of works required to complete the PSI includes:

- A site inspection for evidence of sources of potential contamination onsite and neighbouring properties;
- Soil sampling to identify any contaminants (if present);
- Review of historical investigations relating to the site (if any);
- Review of local Council records and planning certificates;
- Review of the NSW Environment Protection Authority (EPA) environmental contaminated lands register, Protection of the Environment Operations (POEO) Act public register and PFAS Investigation Program map;
- Dial-Before-You-Dig enquiry for an evaluation into local underground services and assets;
- Review of local geological and hydrogeological information, including an evaluation of the WaterNSW registered groundwater bore database;
- Review of Acid Sulphate Soils (ASS) data maps;
- Establish whether data gaps may exist within the investigation;
- Development of a Conceptual Site Model (CSM) to identify the connections between potential sources of contamination, exposure pathways, and human/ecological receptors; and
- Recommendations for additional investigations (if any), based on the identified data gaps and findings of the PSI.

3. Site Details

Table 1. Site Details

Address	5 Mary Street Northmead NSW 2152
Deposited Plan	Lot 43/-/DP8884
Zoning	R2 - Low Density Residential
Locality Map	**Figure 1**
Site Plan	**Figure 2**
Area (approx.)	1,322m^2

Table 2. Surrounding Land Use

Direction from Site	Land Use
North	Residential properties
East	Mary Street
South	Residential properties
West	Residential properties

4. Site Condition

A qualified environmental consultant inspected the site on the 9th May 2023. Site photographs are provided in **Appendix A**. Observations noted during the inspection are summarised below:

- The site consisted of a residential lot featuring:
  - A weatherboard residential dwelling within front portion;
  - A fibrocement shed within the eastern portion;
  - A fibrocement shed and a metal shed within the western portion;
  - A metal shed within north-western portion;
  - Stockpile of timber and metal within north-western portion;
  - Garden area with mature banana trees within northern portion;
  - Lawn areas within the front and rear portions.
- The soil underlying the site consisted of a silty clay fill layer;
- There was no distinct change in elevation across the site area.

The sensitive receptors surrounding the site include low density residential properties, Northmead Reserve (approx. 200m SE), John Curtin Reserve (approx. 500m W). and Smith's Creek (approx. 600m S).

5. Site History

5.1 Review of Historical Aerial Photographs

A review of available historical aerial images indicates the site was vacant prior to at least 1955. Since at least 1965 the site has been used for residential purposes.

Historical Aerial Photographs are provided in **Appendix A**.

Table 3. Historical Aerial Photographs

Year	Site and Surrounding Area
1943-1955	The site was free of structures. The surrounding area was comprised residential properties and vacant lots.
1965	The site was contained a residential dwelling within the southern portion and a shed within north-western portion. The surrounding area was increased in residential developments.
1986	A new shed had been built within north-eastern portion of the site. A garden bed can be observed within central portion of the site. The surrounding area was increased further in residential developments
1991	Small scale agricultural activities can be observed within central portion of the site. The surrounding area was increased further in residential developments.
2005	No agricultural activities can be observed within the site. The surrounding area was largely unchanged.
2023	Two new structures can be observed within central portion of the site near eastern and western boundaries. surrounding area remain unchanged.

5.2 Section 10.7 (2) Planning Certificate

A Section 10.7 Planning Certificate describes how a property may be used and the restrictions on development. The Planning Certificate is issued under Section 149 of the Environmental Planning and Assessment Act 1979. At the time of reporting, GCA could not get access to the Planning Certificate.

5.3 NSW EPA Contaminated Land Register

A search within the NSW EPA contaminated land register was undertaken for the subject site. No results were identified for this site or within 500m of the site.

5.4 Protection of the Environment Operations Act (POEO) Public Register

A search within the NSW EPA contaminated land register was undertaken for the subject site. No active results were identified for this site or within 500m of the site.

5.5 SafeWork NSW Hazardous Goods

A SafeWork search was not undertaken for the site.

5.6 Product Spill and Loss History

The site inspection carried out found no evidence to suggest major chemical contamination impact on the site.

5.7 Dial Before You Dig

A Dial-Before-You-Dig request suggests the potential for underground services and assets to be impacted or act as a portal to transport contamination offsite (**Appendix D**).

5.8 PFAS Investigation Program

The NSW Government PFAS Investigation Program map indicates the site is not currently listed or located within 1km of a listed site for PFAS contamination investigation and management programs.

6. Environmental setting

6.1 Local Geology

Data obtained from the Geological Survey of NSW and the Geoscience Australia Stratigraphic Units Database indicate the site is underlain by Ashfield Shale of Wianamatta Group, consisted of dark grey to black claystone-siltstone and fine sandstone-siltstone laminite.

6.2 Soil Landscape

A review of the regional maps by the NSW Department of Planning, Industry and Environment indicates the site is generally located within the Glenorie soil landscape. This landscape is normally recognised by undulating to rolling low hills on Wianamatta Group shales. Local relief of this landscape is typically 50-80m, with slopes of usually less than 5-20%.

Soils of this landscape is generally consisting of shallow to moderately deep (<100cm) Red Podzolic Soils on crests, moderately deep (70–150cm) Red and Brown Podzolic Soils on upper slopes; deep (>200cm) Yellow Podzolic Soils and Gleyed Podzolic Soils along drainage lines.

6.3 Hydrogeology and Groundwater

The site is located within Glenhaven Hydrogeological Landscape (HGL). This HGL is characterised by undulating hills on Triassic Ashfield Shale over Hawkesbury Sandstone at Glenhaven, Eastwood, Roselea, Denistone West, Epping and West Ryde. It is an area of moderate to high rainfall (900-1200 mm) located in the north of the Sydney Metropolitan region, bordering the Hawkesbury Sandstone units on the Hornsby Plateau. It is found in both Hawkesbury-Nepean and Sydney Metropolitan catchments.

Water infiltrates through the steep hills and flows downslope laterally along clay rich layers within the soil material and also vertically through the underlying shales within the matrix and preferentially along fractures and bedding plains. The lateral movement of subsurface waters may be impeded by a soil texture change (lithic gravels and sands to sandy clay) at the change in slope.

Groundwater systems are local with short flow lengths and are loosely defined by topographic catchments. Water quality within these systems is fresh. Water table depths are intermediate to deep (2–>8 m).

A groundwater bore search was conducted on 17th May 2023 and four (4) bores (GW110254, GW110251, GW110253, GW110252) were identified 100m north of the site. The meaured standing water level of these wells was around 6m. GW110254 had the following material:

Table 4. GW110254 Drillers Log

From (m bgl)	To (m bgl)	Thickness (m)	Drillers Description	Geological Material
0.00	0.70	0.70	FILL, GREY AND BROWN GRAVEL, SANDY CLAY	Fill
0.70	10.00	9.30	SHALE, GREY, RED AND BLACK, WEATHERED	Shale

It was beyond the scope of works to study the groundwater flow direction. However, based on the regional topography, groundwater is expected to flow towards Smith's Creek (approx. 600m S).

6.4 Topography

The regional topography surrounding the site has a gentle sloping (5-10%) towards south.

6.5 Site Drainage

Site drainage is likely to be consistent with the local topography. Stormwater is likely collected by pit and pipe drainage flowing into the municipal stormwater system, which likely flows Smith's Creek (approx. 600m S). Additionally, large portions of the site consist of accessible soils, which allow for direct infiltration into the sub-soil.

6.6 Acid Sulphate Soils

To determine whether there is a potential for ASS to be present at the site, information was reviewed utilising the NSW Department of Planning, Industry and Environment eSPADE map viewer. The ASS risk maps show the chance of acid sulphate soil occurrence.

This search indicated that there is "no known occurrence" of ASS underlying the soil at this site.

7. Areas of Environmental Concern

Based on the above information, the potential Areas of Environmental Concern (AEC) and their associated Contaminants of Potential Concern (CoPC) for the site were identified.

Table 5. AEC and Associated CoPC

AEC	Potentially Contaminating/ Hazardous Activity	CoPC	Likelihood of Site Impact	Comments
Entire site	Importation of fill material from unknown origin. Small scale agricultural activities. Onsite car parking.	Metals, TRH, BTEX, PAH, OCPs, OPPs, Asbestos	Low	Based on site observations, the presence of imported fill material is possible. Historical operations may have given rise to contamination event/s.
Onsite structures	Hazardous materials	ACM, SMF, ODS, Lead (paint and/or dust), PCBs	High	A HMS should be carried out to determine the presence or absence of these materials.

Abbreviations: Asbestos Containing Materials (ACM), Hazardous Materials Survey (HMS), Benzene Toluene Ethylbenzene and Xylene (BTEX), Ozone Depleting Substances (ODS), Polychlorinated Biphenyls (PCBs), Total Recoverable Hydrocarbons (TRH), Synthetic Mineral Fibres (SMF), Polycyclic Aromatic Hydrocarbons (PAH), Organochlorine Pesticides (OCPs), Organophosphorus Pesticides (OPPs).

8. Conceptual Site Model

A Conceptual Site Model (CSM) has been developed and presented below and provides a representation of the potential risks associated with the connections between the following elements:

- Potential contamination sources and their associated CoPCs;
- Potential human receptors that may be impacted by the site contamination are current and future site users including occupants to the dwellings/infrastructures onsite, site workers and the general public within the immediate vicinity of the site;
- Potential environmental receptors to the site including but not limited to: groundwater and surface water bodies, residual soils at and/or nearby the site.
- Potential exposure pathways; and
- Whether source-pathway-receptor connections are complete based on current and future site conditions.

Table 6. Conceptual Site Model

Potential Sources	Potential Receptor	Potential Exposure Pathway	Complete Connection	Risk	Justification/Control Measures
Contaminated soil from importation of uncontrolled fill across the site. Small scale agricultural activities Onsite car parking ACM, lead-based paint and other trace metals in onsite residential dwellings and sheds.	Site occupants, workers, general public	Dermal contact, inhalation/ ingestion of fibres/ particulates, vapour intrusion.	Complete (current)	Moderate	Exposure to potentially contaminated soils is likely due to unsealed surfaces.
			Complete (future)	Low	If present, impacted soils are likely to be disposed of offsite.
	Natural soils	Migration of contamination from fill layer/ topsoil to underlying natural soils.	Complete (current)	Low	Migration through fill layer to natural soils is possible.
			Complete (future)	Low	If present, impacted soils are likely to be disposed of offsite.
	Smith's Creek (approx. 600m S)	Migration of impacted groundwater and surface water run-off.	Complete (current)	Low	The local topography surrounding the site falls towards Smith's Creek (approx. 600m S). It is possible surface waters from the site reach this waterway.
			Complete (future)	Low	If present, contaminated soils and groundwater are likely to be remediated.
	Underlying aquifer	Leaching and migration of contaminants through groundwater infiltration.	Complete (current)	Low	Due to existing unsealed surfaces, leachability of CoPC is possible.
			Complete (future)	Low	If present, contaminated soil and/or groundwater is likely to be remediated.

9. Assessment Criteria

The following soil assessment criteria were adopted for the investigation.

9.1 NEPM Health Investigation Level A (HIL-A) – Residential

HILs are scientific, risk-based guidance levels to be used as in the primary stage of assessing soil contamination to evaluate the potential risks to human health from chronic exposure to contaminants. HILs are applicable to a broad range of metals and organic substances, and generally apply to depths up to 3m below the surface for residential use. Tier 1 HILs are divided into sub-criteria. The sub-criteria appropriate to the site is HIL A – residential with garden/accessible soils.

Table 7. HIL-A

Assessment Criteria	NEPM 2013 Soil HIL-A, mg/kg
Pesticides	
HCB	10
Heptachlor	6
Chlordane	50
Aldrin & Dieldrin	6
Endrin	10
DDD+DDE+DDT	240
Endosulfan	270
Methoxychlor	300
Mirex	10
Metals	
Arsenic, As	100
Cadmium, Cd	20
Chromium, Cr	100
Copper, Cu	6,000
Lead, Pb	300
Nickel, Ni	400
Zinc, Zn	7,400
Mercury, Hg	40
Polycyclic Aromatic Hydrocarbons	
Carcinogenic PAH (as BaP TEQ)	3
Total PAH (18)	300

9.2 NEPM Health Screening Level A (HSL-A) – Residential

HSLs have been developed for selected petroleum compounds and fractions and are used for the assessment of potential risks to human health from chronic inhalation and direct contact pathways of petroleum vapour emanating off petroleum contaminated soils (Vapour Risk). HSLs are guided by land-use scenarios, specific soil physicochemical properties and generally apply to depths below surface to >4m. Tier 1 HSLs are divided into sub-criteria. The sub-criteria appropriate to the site is HSL A – residential with garden/accessible soils.

Table 8. HSL-A

Assessment Criteria	NEPM 2013 Soil HSL-A for Vapour Intrusion, 0-<1m Depth, Clay, mg/kg	NEPM 2013 Soil HSL-A for Vapour Intrusion, >1-2m Depth, Clay, mg/kg
Monocyclic Aromatic Hydrocarbons		
Benzene	0.7	1
Toluene	480	NL
Ethylbenzene	NL	NL
Xylenes	110	310
Polycyclic Aromatic Hydrocarbons		
Naphthalene	5	NL
Total Recoverable Hydrocarbons		
TRH C6-C10 - BTEX (F1)	50	90
TRH >C10-C16 - N (F2)	280	NL

9.3 NEPM Ecological Investigation Level (EIL) – Urban Residential and Public Open Space

Ecological investigation levels (EILs) have been developed to assess the risk for the presence of metals and organic substance in a terrestrial ecosystem. EILs are guided by land-use scenarios, specific soil physicochemical properties and generally apply to the top 2m of soil.

EILs can be applied for arsenic (As), copper (Cu), chromium III (Cr(III)), dichlorodiphenyltrichloroethane (DDT), naphthalene, nickel (Ni), lead (Pb) and zinc (Zn). The NEPM Soil Quality Guidelines (SQG) for EILs are calculated using the Added Contamination Limit (ACL) to determine the amount of contamination that had to be added to the soil to cause toxicity, including ambient background concentration (ABC).

Table 9. Generic EIL

Assessment Criteria	NEPM 2013 Soil Generic EIL for Urban Residential and Public Open Space, mg/kg
Metals	
Arsenic, As	100
Lead, Pb	1100
Pesticides	
DDT	180
Polycyclic Aromatic Hydrocarbons	
Naphthalene	170

9.4 NEPM Ecological Screening Level (ESL) – Urban Residential and Public Open Space

ESLs have been developed for selected petroleum hydrocarbons (BTEX, benzo(a)pyrene, TRH F1 and F2) in soil, based on fresh contamination. These parameters are applicable to coarse and fine-grained soil and apply from the surface of the soil to 2m below ground level, which corresponds with the root and habitat zone for many species.

Table 10. ESL

Assessment Criteria	NEPM 2013 Soil ESL for Urban, Residential and Public Open Spaces, Fine-Grained Soil, mg/kg
Monocyclic Aromatic Hydrocarbons	
Benzene	65
Toluene	105
Ethylbenzene	125
Xylenes	45
Polycyclic Aromatic Hydrocarbons	
BaPyr (BaP)	0.7
Total Recoverable Hydrocarbons	
TRH C6-C10	180
TRH >C10-C16	120
TRH >C16-C34 (F3)	1,300
TRH >C34-C40 (F4)	5,600

9.5 NEPM Management Limits – Residential, Parkland and Public Open Space

Management Limits for petroleum have been developed for prevention of explosive vapour accumulation, prevention of the formation of observable Light Non-Aqueous Phase Liquids (LNAPL) and protection against effects on buried infrastructure. Residential, parkland and public open space limits have been adopted based on the proposed land use.

Table 11. Management Limits

Assessment Criteria	NEPM 2013 Management Limits for Residential, Parkland and Public Open Space, Fine-Grained Soil, mg/kg
Total Recoverable Hydrocarbons	
TRH C6-C10	800
TRH >C10-C16	1,000
TRH >C16-C34 (F3)	3,500
TRH >C34-C40 (F4)	10,000

9.6 NEPM Health Screening Level A (HSL-A) – Residential for Asbestos

The assessed soil must not contain Asbestos Containing Materials (ACM) in the excess of 0.01%w/w and Asbestos Fines (AF) and Fibrous Asbestos (FA) in excess of 0.001%w/w. Moreover, surface soil within the site must be free of visible ACM, Asbestos Fines (AF) and Fibrous Asbestos (FA).

Table 12. HSL-A for Asbestos

Assessment Criteria	Health Screening Level (%w/w) Residential (A)
Asbestos	
ACM	0.01%
FA and AF (friable asbestos)	0.001%
All forms of asbestos	No visible asbestos for surface soils

10. Sampling and Analysis Plan

10.1 Sampling Rationale

Table 13. Sampling Rationale

Sampling Criteria	**Chosen Approach**	**Justification**
Sampling Pattern	Judgemental sampling pattern within accessible areas	This pattern was selected due to the area of the site, access to underlying soil, the AEC and CoPC as well as the potential heterogeneity of any contamination.
Sampling Density	Six (6) soil samples	This sampling density was selected based on the extent of the potential contaminated area to be detected, feasibility, the site history, distribution of current and historical uses on site, location and condition of structures
Sampling Depths	0-0.15m	These depths were selected in compliment with sampling density and to target depths of potential contaminants.

10.2 Field Sampling Methodology

Test pits were excavated with a shovel to a depth of 0.3m below ground level (bgl). Soil was scraped from the freshly cut cross section for sample collection. The shovel was decontaminated with detergent and deionised water between test pits. Additional surface samples were collected in 500ml zip bags for analysis of Asbestos. PID screening was undertaken on all soil samples. Samples were stored on ice in an esky while onsite and in transit to a NATA accredited laboratory for the analysis of the CoPC under Chain of Custody (COC) documentation.

Table 14. Sample Details

Sample	Depth (m)	Sample Description	Matrix	PID (ppm)
TP1	0.15	Silty CLAY, dark brown, moist, medium to high plasticity, plant roots	Fill	0.0
TP2	0.15	Silty CLAY, dark brown, moist, medium to high plasticity, plant roots	Fill	0.0
TP3	0.15	Silty CLAY, dark brown, moist, medium to high plasticity, plant roots	Fill	0.0
TP4	0.15	Silty CLAY, dark brown, moist, medium to high plasticity, plant roots	Fill	0.0
TP5	0.15	Silty CLAY, dark brown, moist, medium to high plasticity, plant roots	Fill	0.0
TP6	0.15	Silty CLAY, dark brown, moist, medium to high plasticity, plant roots	Fill	0.0

11. Investigation Results

Analytical results indicate no exceedance of the NEPM 2013 Health and Ecological Assessment Criteria for Residential (A) sites, with the exception of Asbestos detected in sample TP2 in exceedance of the NEPM 2013 Health Screening Level (HSL-A) for Residential (A) sites.

Elevated concentrations of TRH, PAH and metals were detected above Laboratory Limit of Reporting (LOR) but at concentrations below the NEPM 2013 Health and Ecological Assessment Criteria for Residential (A) sites.

Soil analytical results are provided in **Appendix C**.

12. Data Gaps

- Hazardous materials in onsite structures.
- Condition of the soils beneath concrete slabs and onsite structures; and
- Groundwater condition. Contamination is likely to be restricted to fill or shallow surface soils. Potential impacts to groundwater are considered minimal.

13. Conclusion

Overall, this site is considered to have a low risk of subsurface contamination. Analytical results indicated no exceedance of the NEPM Health and Ecological assessment criteria for Residential (A) sites, with the exception of Asbestos in one location (TP2).

Based on visual observations, the Asbestos contamination is potentially derived from the fibrocement sheds within the site. Therefore, GCA recommend that a *Hazardous Materials Survey (HMS)* is completed for the onsite structures. This HMS will then recommend site demolition processes and Asbestos removal requirements.

Following demolition of onsite structures and removal of hardstands, a *Detailed Site Investigation (DSI)* should be undertaken for the site with Asbestos sampling collected at double density of the requirements for Table 2 of the NSW EPA, *Contaminated Land Guidelines*, *Sampling Design Part 1 – Application*, 2022. Finally, an Asbestos Clearance Certificate (issued by a Licenced Asbestos Assessor) will be required confirming the successful removal of all Asbestos containing material from the site.

Based on the site investigation and analytical results, GCA considers that the potential for significant contamination of onsite soil to be low and finds that the site can be made suitable for the proposed development and land use (Residential A), provided the recommendations within Section 14 are undertaken.

14. Recommendations

Based on the information collected and available during this investigation, the following recommendations have been made:

- All structures onsite should have a Hazardous Materials Survey (HMS) conducted by a qualified occupational hygienist and/or environmental consultant for the site prior to any demolition or renovation works in accordance with relevant Australian Standards, SafeWork NSW codes of practice and any other applicable requirements; If ACM is confirmed by the HMS, then the following will be required:
    - An Asbestos Removal Management Plan (ARMP);
    - The removal works will require a Class B licensed removal contractor;
    - Reporting on transport and management of Asbestos waste in accordance with EPA Part 7 of the Protection of the Environment Waste Regulation 2017; and
    - An Asbestos Clearance Inspection and Clearance Certificate is required post demolition to be undertaken by a Licensed Asbestos Assessor as per clauses 473 & 474 of NSW Work Health and Safety Regulations 2017.
- The demolition of structures and excavation activity on site be undertaken in accordance with relevant Australian Standards, SafeWork NSW codes of practice and any other applicable requirements;
- Undertake a *Detailed Site Investigation (DSI)* for the site with Asbestos sampling collected at double density of the requirements for Table 2 of the NSW EPA, *Contaminated Land Guidelines*, *Sampling Design Part 1 – Application*, 2022. Asbestos sampling should be undertaken as guided by the NEPM 2013 (WA DoH method, considered industry best practice).
- If any CoPCs are detected in the post demolition sampling, then validation of the underlying natural soils may also be required;
- Any soils requiring excavation, onsite reuse and/or removal must be classified in accordance with "Waste Classification Guidelines Part 1: Classifying Waste" NSW EPA (2014); and
- A site specific 'Unexpected Finds Protocol' is to be made available for reference for all occupants and/or site workers in the event unanticipated contamination is discovered, including Asbestos.

References

Statutory Requirements

- National Environment Protection Council Act 1994;
- Protection of the Environment and Operation Act 1997;
- The Contaminated Land Management Act 1997;
- Work Health and Safety Act, 2011.

Regulatory Framework

- State Environmental Planning Policy (Resilience and Hazard) 2021;
- NSW EPA, *Contaminated Land Guidelines*, *Sampling Design Part 1 – Application*, 2022;
- NSW EPA, *Contaminated Land Guidelines*, *Sampling Design Part 2 – Interpretation*, 2022;
- NSW EPA, *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act*, 1997;
- NSW EPA, *Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation, 2014*;
- NSW EPA, *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines,* 2020;
- NSW EPA, *Contaminated Land Management, Guidelines for the NSW Site Auditor Scheme,* 2017 (3rd Edition);
- NSW EPA, *Waste Classification Guidelines Part 1: Classifying Waste,* 2014;
- NEPC, National Environment Protection (Assessment of Site Contamination) Measures (NEPM), 2013;
- HEPA, PFAS National Environmental Management Plan, Version 2.0, 2020;
- The National Remediation Framework, CRC Care, 2019;
- Protection of the Environment Operations (Waste) Regulations, 2005;
- SafeWork NSW, *Managing Asbestos in or On Soil*, 2014; and
- Work Health and Safety Regulation, 2011.

Limitations

The findings of this report are based on the scope of work outlined in Section 2. GCA performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental consulting profession. No warranties, express or implied are made.

The results of this assessment are based upon the information documented and presented in this report. All conclusions and recommendations regarding the site are the professional opinions of GCA personnel involved with the project, subject to the qualifications made above. While normal assessments of data reliability have been made, GCA assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements from sources outside of GCA, or developments resulting from situations outside the scope of this project.

The results of this assessment are based on the site conditions identified at the time of the site inspection and validation sampling. GCA will not be liable to revise the report to account for any changes in site characteristics, regulatory requirements, assessment criteria or the availability of additional information, subsequent to the issue date of this report.

GCA is not engaged in environmental consulting and reporting for the purpose of advertising sales promoting, or endorsement of any client interests, including raising investment capital, recommending investment decisions, or other publicity purposes.

Geotechnical Consultants Australia Pty Ltd (GCA)

Prepared by:

Ehsan Zare
Environmental Consultant

Reviewed by:

Nick Caltabiano
Project Manager

APPENDIX A

Figures and Site Photographic Log

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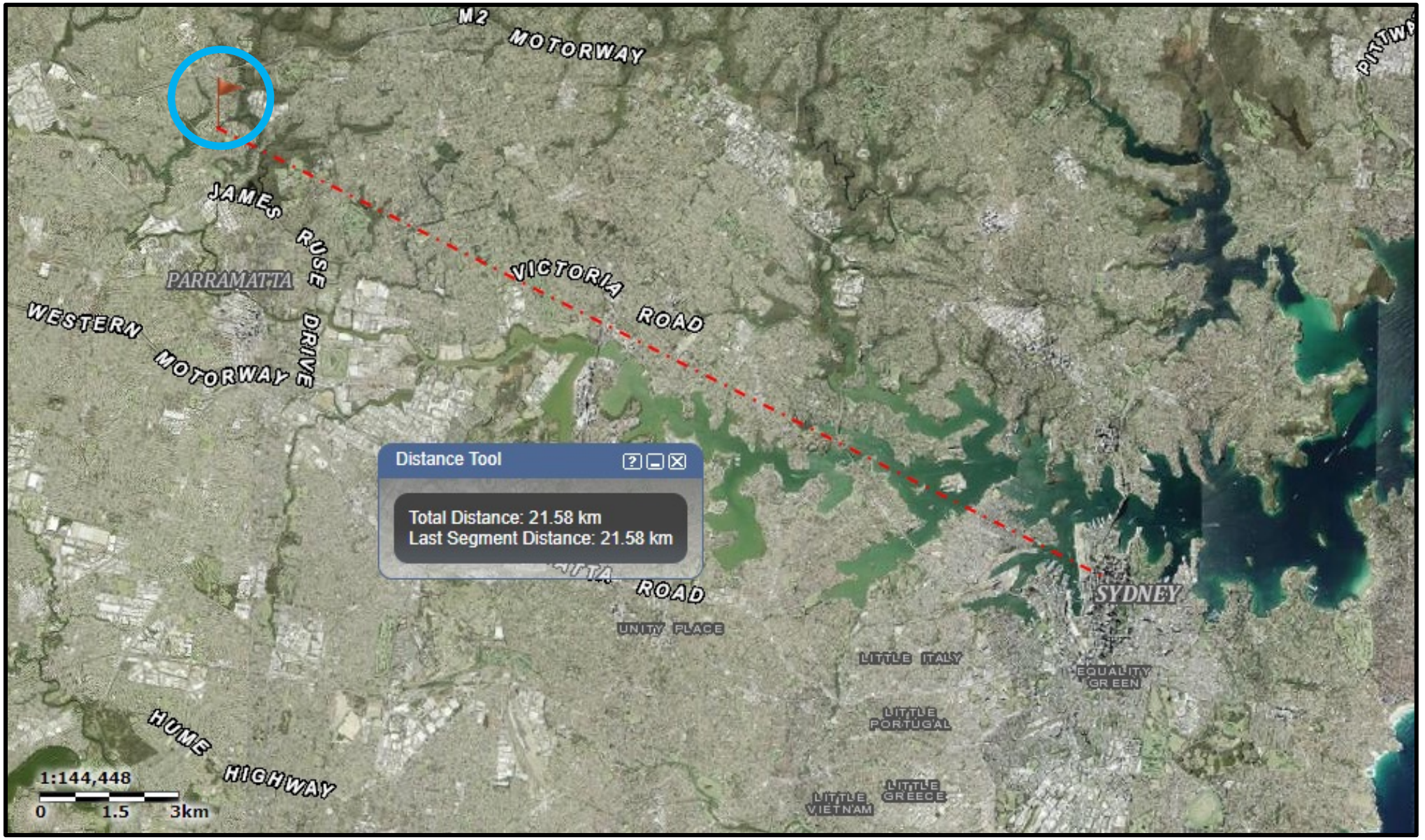
Figure 1. The site is located approximately 21km north-west of Sydney CBD.



Site location

Source: Six Maps 2023

Figure 1	Locality Map
Project	5 Mary Street, Northmead NSW 2152

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Figure 2. The approximate area of the site is 1,322m^2. Six (6) soil samples were obtained from six (6) test pits across the site.

⊗ Soil Sample Location

Source: Nearmap 2023

Figure 2	Site Area
Project	5 Mary Street, Northmead NSW 2152

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Figure 3. Aerial image of the site and surrounding area 1943. The site was free of structures. The surrounding area was comprised of residential properties and vacant lots.

Figure 3	Aerial Image 1943
Project	5 Mary Street, Northmead NSW 2152

Source: NSW Historical Imagery 2023

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Figure 4. Aerial image of the site and surrounding area 1965. The site contained a residential dwelling within the southern portion and a shed within north-western portion. The surrounding area was increased in residential developments.

Source: NSW Historical Imagery 2023

Figure 4	Aerial Image 1965
Project	5 Mary Street, Northmead NSW 2152

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Figure 5. Aerial image of the site and surrounding area 1986. A new shed had been built within north-eastern portion of the site. A garden bed can be observed within central portion of the site. The surrounding area increased further in residential developments.

Source: NSW Historical Imagery 2023

Figure 5	Aerial Image 1986
Project	5 Mary Street, Northmead NSW 2152

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Figure 6. Aerial image of the site and surrounding area in 1991. Small scale agricultural activities can be observed within central portion of the site. The surrounding area increased further in residential developments.

Source: Nearmap 2023

Figure 6	Aerial Images: 1991
Project	5 Mary Street, Northmead NSW 2152

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Figure 7. Aerial image of the site and surrounding area in 2005. No agricultural activities can be observed within the site. The surrounding area was largely unchanged.

Source: Nearmap 2023

Figure 7	Aerial Images: 2005
Project	5 Mary Street, Northmead NSW 2152

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Figure 8. Aerial image of the site and surrounding area in 2023. Two new structures can be observed within central portion of the site near eastern and western boundaries. The surrounding area remain unchanged.

Source: Nearmap 2023

Figure 8	Aerial Images: 2023
Project	5 Mary Street, Northmead NSW 2152

Figure 9. Overall view of the site.

Figure 10. Rear view of the weatherboard dwelling within the site.

Figure 11. Fibrocement shed and swear pluming air vent within the western portion of the site.

Figure 12. Fibrocement building within eastern portion of the site.

Figure 13. Garden area within the northern portion of the site.

Figure 14. Metal shed within north-western potion of the site.

Figure 15. Timber stockpile within north-eastern portion of the site.

Figure 16. Storage of metal sheets within north-eastern portion of the site

Figure 17. TP3 test pit excavation and sampling.

Figure 18. TP4 test pit excavation and sampling.

APPENDIX B

Data Quality Objectives

Data Quality Objectives (DQOs)

The DQOs have been developed in accordance with the NEPM Appendix B of Schedule B2 and provide the type, quantity and quality of data to support decisions regarding the environmental conditions of this site.

Table 15. DQOs

Step 1: State the problem	GCA have identified the following risks to human and environmental receptors: - The proposed development includes the construction of a childcare centre. All stages of potential future development may give rise to contamination events. Additionally, the intended future use of the site is considered a sensitive human health risk setting.
Step 2: Identify the decision/goal of the study	GCA considered the site history, the use of this site, and the NEPM Guidelines, when identifying the decisions required for the site to be considered suitable for its continued land use. The decisions required to meet these decisions are as follows: - Was the sampling, analysis and quality plan designed appropriate to achieve the aim of the report? - If present, is on-site contamination capable of migrating off-site? - Are there any unacceptable risks to the future on site or off-site receptors in the soil or groundwater? - Is the site suitable for its continued land use?
Step 3: Identify the information inputs	GCA has identified issues of potential environmental concern; - Appropriate identification of COPC; - Soil sampling and analysis programs across the site; - Appropriate quality assurance/quality control to enable an evaluation of the reliability of the analytical data; and - Screening sampler analytical results against appropriate assessment criteria for the intended land use.
Step 4: Define the boundaries of the study	The study boundaries are: - Lateral boundary: The legally defined area of the site; - Vertical boundary: The soil interface to the maximum depth reached during soil sampling; and - Temporal boundary: Constrained to a single visit to the site.
Step 5: Develop the analytical approach	Here, GCA integrate the information from steps 1 – 4 to support and justify our proposed analytical approach. Our aim is to confirm if the site is suitable for the proposed development. If the findings of the SAQP identify; - Any exceedance of the adopted assessment criteria for soil;

	- Professional opinion that further assessment is required; and/or - Adopted RPD for QC data not met. Further assessment may be required to confirm suitability of the site in the form of; Data Gap investigation, Remediation Action Plan and Site Validation.
Step 6: Specify performance or acceptance criteria	For judgemental soil sampling the data must meet the following qualifiers; - Acceptable recovery on all surrogate spikes used in laboratory analyses; - Acceptable analytical method to ensure detection limit appropriate for all analytes; If these conditions are not met, then chemical analysis will require re-testing for all samples with fresh aliquot.
Step 7: Optimise the design for obtaining data	Judgemental sampling pattern within the AEC will provide suitable coverage of the site to produce reliable data in alignment with the Data Quality Indicators (DQIs) to cover precision, accuracy, representativeness, completeness and comparability (PARCC). This sampling pattern will ensure that critical locations are assessed and analysed appropriately for COPC.

APPENDIX C

Laboratory Results and Chain of Custody (NATA)

Table 16. Total Recoverable Hydrocarbon (TRH) analytical results. Values are presented as mg/kg. NL = Not Limiting.

Assessment Criteria		TRH C_6-C_{10}	TRH C_6-C_{10} - BTEX (F1)	TRH >C_{10}-C_{16}	TRH >C_{10}-C_{16} - N (F2)	TRH >C_{16}-C_{34} (F3)	TRH >C_{34}-C_{40} (F4)
NEPM 2013 Residential Soil HSL-A for Vapour Intrusion, 0-<1m depth, Clay, mg/kg			50		280		
NEPM 2013 Soil Generic ESL for Urban, Residential and Public Open Spaces, fine-grained soil, mg/kg		180		120		1300	5600
NEPM 2013 Management Limits for Residential, Parkland and Public Open Space, fine-grained soil, mg/kg		800		1000		3500	10 000
Sample	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TP1	0-0.15	<25	<25	<25	<25	**100**	<120
TP2	0-0.15	<25	<25	<25	<25	**100**	<120
TP3	0-0.15	<25	<25	<25	<25	**93**	<120
TP4	0-0.15	<25	<25	<25	<25	<90	<120
TP5	0-0.15	<25	<25	<25	<25	<90	<120
TP6	0-0.15	<25	<25	<25	<25	<90	<120

Table 17. Benzene, Toluene, Ethylbenzene and Xylene (BTEX) analytical results. Values are presented as mg/kg. NL = Not Limiting.

Assessment Criteria		Benzene	Toluene	Ethylbenzene	Xylenes
NEPM 2013 Residential Soil HSL-A for Vapour Intrusion, 0-<1m depth, Clay, mg/kg		0.7	480	NL	110
NEPM 2013 Soil ESL for Urban, Residential and Public Open Spaces, fine-grained soil, mg/kg		65	105	125	45
Sample	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg
TP1	0-0.15	<0.1	<0.1	<0.1	<0.3
TP2	0-0.15	<0.1	<0.1	<0.1	<0.3
TP3	0-0.15	<0.1	<0.1	<0.1	<0.3
TP4	0-0.15	<0.1	<0.1	<0.1	<0.3
TP5	0-0.15	<0.1	<0.1	<0.1	<0.3
TP6	0-0.15	<0.1	<0.1	<0.1	<0.3

Table 18. Polycyclic Aromatic Hydrocarbon (PAH) analytical results.

Assessment Criteria		Naphthalene	Benzo(a)pyrene	Carcinogenic PAH (as BaP TEQ)	Total PAH (18)
NEPM 2013 Residential Soil HSL-A for Vapour Intrusion, 0-<1m depth, Clay, mg/kg		5			
NEPM 2013 Soil Generic EIL for Urban Residential and Public Open Space, mg/kg		170			
Soil ESL for Urban, Residential and Public Open Spaces, fine-grained soil, mg/kg			0.7		
NEPM 2013 Residential Soil HIL-A, mg/kg			1.00 TEF	3	300
Sample	Depth (m)	mg/kg	mg/kg	TEQ (mg/kg)	mg/kg
TP1	0-0.15	<0.1	**0.2**	**0.3**	**1.6**
TP2	0-0.15	<0.1	**0.2**	**0.3**	**1.6**
TP3	0-0.15	<0.1	<0.1	<0.3	<0.8
TP4	0-0.15	<0.1	**0.1**	**0.3**	**1.5**
TP5	0-0.15	<0.1	**0.1**	<0.3	**1.0**
TP6	0-0.15	<0.1	<0.1	<0.3	<0.8

Table 19. Heavy Metal analytical results. Values are presented as mg/kg.

Assessment Criteria		Arsenic, As	Cadmium, Cd	Chromium, Cr	Copper, Cu	Lead, Pb	Nickel, Ni	Zinc, Zn	Mercury, Hg
NEPM 2013 Residential Soil HIL-A, mg/kg		100	20	100	6000	300	400	7400	40
NEPM 2013 Soil Generic EIL for Urban Residential and Public Open Space, mg/kg		100				1100			
Sample	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TP1	0-0.15	**8**	<0.3	**26**	**25**	**58**	**5.1**	**95**	**0.13**
TP2	0-0.15	**7**	**0.3**	**13**	**87**	**57**	**6.0**	**270**	**0.05**
TP3	0-0.15	**5**	**0.3**	**19**	**71**	**49**	**4.0**	**210**	**0.07**
TP4	0-0.15	**7**	<0.3	**23**	**29**	**42**	**3.4**	**100**	**0.07**
TP5	0-0.15	**9**	**0.3**	**12**	**33**	**120**	**4.1**	**210**	**0.05**
TP6	0-0.15	**5**	**0.4**	**13**	**45**	**42**	**4.3**	**190**	**0.05**

Table 20. Pesticides analytical results. Values are presented as mg/kg.

Assessment Criteria		HCB	Heptachlor	Chlordane	Aldrin & Dieldrin	Endrin	DDT	DDD+DDE +DDT	Endosulfan	Methoxychlor	Mirex
NEPM 2013 Residential Soil HIL-A, mg/kg		10	6	50	6	10		240	270	300	10
NEPM 2013 Soil Generic EIL for Urban Residential and Public Open Space, mg/kg							180				
Sample	Depth (m)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TP1	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
TP2	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
TP3	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
TP4	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1
TP5	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	**0.2**	**0.6**	<0.5	<0.1	<0.1
TP6	0-0.15	<0.1	<0.2	<0.2	<0.3	<0.2	<0.2	<0.6	<0.5	<0.1	<0.1

Table 21. Asbestos analytical results.

Assessment Criteria		Asbestos		
NEPM 2013 Residential Soil HSL-A, mg/kg		Detected	Bonded ACM	FA and AF
			0.01%w/w	0.001%w/w
Sample	Depth (m)	Yes/No	%w/w	%w/w
TP1	0-0.15	No	<0.01	<0.001
TP2	0-0.15	**Yes**	<0.01	**0.009**
TP3	0-0.15	No	<0.01	<0.001
TP4	0-0.15	No	<0.01	<0.001
TP5	0-0.15	No	<0.01	<0.001
TP6	0-0.15	No	<0.01	<0.001

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Admin
Client	NEO CONSULTING PTY LTD
Address	PO BOX 279 RIVERSTONE NSW 2765
Telephone	0416 680 375
Facsimile	(Not specified)
Email	admin@neoconsulting.com.au
Project	**N6431**
Order Number	**N6431**
Samples	6

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE247176 R0**
Date Received	9/5/2023
Date Reported	16/5/2023

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 #2: Asbestos found as approx 10x5x2mm cement sheet fragments x3.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

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Chemist

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
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Hygiene Team Leader

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VOC's in Soil [AN433] Tested: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
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

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1
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: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
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: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	**55**	**52**	<45	<45
TRH C29-C36	mg/kg	45	**88**	**61**	**55**	<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	**100**	**100**	**93**	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	**120**	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	45	<45
TRH C29-C36	mg/kg	45	<45
TRH C37-C40	mg/kg	100	<100
TRH >C10-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120
TRH C10-C36 Total	mg/kg	110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
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	0.2	0.2	<0.1	0.2	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.3	0.3	<0.1	0.3	0.2
Pyrene	mg/kg	0.1	0.3	0.4	<0.1	0.3	0.2
Benzo(a)anthracene	mg/kg	0.1	0.2	0.2	<0.1	0.2	0.1
Chrysene	mg/kg	0.1	0.2	0.2	<0.1	0.1	0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	0.2	<0.1	0.2	0.2
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	0.2	0.2	<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	0.3	0.3	<0.2	0.2	0.2
Total PAH (18)	mg/kg	0.8	1.6	1.6	<0.8	1.5	1.0
Total PAH (NEPM/WHO 16)	mg/kg	0.8	1.6	1.6	<0.8	1.5	1.0

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
Naphthalene	mg/kg	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1
Pyrene	mg/kg	0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
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	**0.4**
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	**0.2**
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: 9/5/2023 (continued)

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
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: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
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	TP6 SOIL - 9/5/2023 SE247176.006
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

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
Arsenic, As	mg/kg	1	8	7	5	7	9
Cadmium, Cd	mg/kg	0.3	<0.3	0.3	0.3	<0.3	0.3
Chromium, Cr	mg/kg	0.5	26	13	19	23	12
Copper, Cu	mg/kg	0.5	25	87	71	29	33
Lead, Pb	mg/kg	1	58	57	49	42	120
Nickel, Ni	mg/kg	0.5	5.1	6.0	4.0	3.4	4.1
Zinc, Zn	mg/kg	2	95	270	210	100	210

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
Arsenic, As	mg/kg	1	5
Cadmium, Cd	mg/kg	0.3	0.4
Chromium, Cr	mg/kg	0.5	13
Copper, Cu	mg/kg	0.5	45
Lead, Pb	mg/kg	1	42
Nickel, Ni	mg/kg	0.5	4.3
Zinc, Zn	mg/kg	2	190

Mercury in Soil [AN312] Tested: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
Mercury	mg/kg	0.05	0.13	0.05	0.07	0.07	0.05

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
Mercury	mg/kg	0.05	0.05

Moisture Content [AN002] Tested: 9/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
% Moisture	%w/w	1	16.0	29.0	28.3	15.1	15.1

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
% Moisture	%w/w	1	15.1

Fibre Identification in soil [AS4964/AN602] Tested: 12/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
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	TP6 SOIL - 9/5/2023 SE247176.006
Asbestos Detected	No unit	-	No
Estimated Fibres*	%w/w	0.01	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 12/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
Total Sample Weight*	g	1	**712**	**677**	**519**	**657**	**633**
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	**0.0597**	<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	**0.009**	<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	**0.009**	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	Chrysotile	NAD	NAD	NAD

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
Total Sample Weight*	g	1	**728**
Bonded ACM in >7mm Sample*	g	0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001
Fibre Type*	No unit	-	NAD

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.
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/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

*	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.

STATEMENT OF QA/QC PERFORMANCE

SE247176 R0

CLIENT DETAILS

Contact	Admin
Client	NEO CONSULTING PTY LTD
Address	PO BOX 279 RIVERSTONE NSW 2765
Telephone	0416 680 375
Facsimile	(Not specified)
Email	admin@neoconsulting.com.au
Project	**N6431**
Order Number	**N6431**
Samples	6

LABORATORY DETAILS

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SGS Reference	**SE247176 R0**
Date Received	09 May 2023
Date Reported	16 May 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
	TRH (Total Recoverable Hydrocarbons) in Soil	4 items

SAMPLE SUMMARY

Sample counts by matrix	6 Soil	Type of documentation received	COC
Date documentation received	9/5/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	6.7°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		

HOLDING TIME SUMMARY

SE247176 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Fibre Identification in soil

Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB279357	09 May 2023	09 May 2023	08 May 2024	12 May 2023	08 May 2024	16 May 2023
TP2	SE247176.002	LB279357	09 May 2023	09 May 2023	08 May 2024	12 May 2023	08 May 2024	16 May 2023
TP3	SE247176.003	LB279357	09 May 2023	09 May 2023	08 May 2024	12 May 2023	08 May 2024	16 May 2023
TP4	SE247176.004	LB279357	09 May 2023	09 May 2023	08 May 2024	12 May 2023	08 May 2024	16 May 2023
TP5	SE247176.005	LB279357	09 May 2023	09 May 2023	08 May 2024	12 May 2023	08 May 2024	16 May 2023
TP6	SE247176.006	LB279357	09 May 2023	09 May 2023	08 May 2024	12 May 2023	08 May 2024	16 May 2023

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB279357	09 May 2023	09 May 2023	05 Nov 2023	12 May 2023	05 Nov 2023	16 May 2023
TP2	SE247176.002	LB279357	09 May 2023	09 May 2023	05 Nov 2023	12 May 2023	05 Nov 2023	16 May 2023
TP3	SE247176.003	LB279357	09 May 2023	09 May 2023	05 Nov 2023	12 May 2023	05 Nov 2023	16 May 2023
TP4	SE247176.004	LB279357	09 May 2023	09 May 2023	05 Nov 2023	12 May 2023	05 Nov 2023	16 May 2023
TP5	SE247176.005	LB279357	09 May 2023	09 May 2023	05 Nov 2023	12 May 2023	05 Nov 2023	16 May 2023
TP6	SE247176.006	LB279357	09 May 2023	09 May 2023	05 Nov 2023	12 May 2023	05 Nov 2023	16 May 2023

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278969	09 May 2023	09 May 2023	06 Jun 2023	09 May 2023	06 Jun 2023	11 May 2023
TP2	SE247176.002	LB278969	09 May 2023	09 May 2023	06 Jun 2023	09 May 2023	06 Jun 2023	11 May 2023
TP3	SE247176.003	LB278969	09 May 2023	09 May 2023	06 Jun 2023	09 May 2023	06 Jun 2023	11 May 2023
TP4	SE247176.004	LB278969	09 May 2023	09 May 2023	06 Jun 2023	09 May 2023	06 Jun 2023	11 May 2023
TP5	SE247176.005	LB278969	09 May 2023	09 May 2023	06 Jun 2023	09 May 2023	06 Jun 2023	11 May 2023
TP6	SE247176.006	LB278969	09 May 2023	09 May 2023	06 Jun 2023	09 May 2023	06 Jun 2023	11 May 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278959	09 May 2023	09 May 2023	23 May 2023	09 May 2023	14 May 2023	11 May 2023
TP2	SE247176.002	LB278959	09 May 2023	09 May 2023	23 May 2023	09 May 2023	14 May 2023	11 May 2023
TP3	SE247176.003	LB278959	09 May 2023	09 May 2023	23 May 2023	09 May 2023	14 May 2023	11 May 2023
TP4	SE247176.004	LB278959	09 May 2023	09 May 2023	23 May 2023	09 May 2023	14 May 2023	11 May 2023
TP5	SE247176.005	LB278959	09 May 2023	09 May 2023	23 May 2023	09 May 2023	14 May 2023	11 May 2023
TP6	SE247176.006	LB278959	09 May 2023	09 May 2023	23 May 2023	09 May 2023	14 May 2023	11 May 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	11 May 2023
TP2	SE247176.002	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	11 May 2023
TP3	SE247176.003	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	11 May 2023
TP4	SE247176.004	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	11 May 2023
TP5	SE247176.005	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	11 May 2023
TP6	SE247176.006	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	11 May 2023

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP2	SE247176.002	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP3	SE247176.003	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP4	SE247176.004	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP5	SE247176.005	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP6	SE247176.006	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP2	SE247176.002	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP3	SE247176.003	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP4	SE247176.004	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP5	SE247176.005	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP6	SE247176.006	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref

HOLDING TIME SUMMARY

SE247176 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278950	09 May 2023	09 May 2023	05 Nov 2023	09 May 2023	05 Nov 2023	11 May 2023
TP2	SE247176.002	LB278950	09 May 2023	09 May 2023	05 Nov 2023	09 May 2023	05 Nov 2023	11 May 2023
TP3	SE247176.003	LB278950	09 May 2023	09 May 2023	05 Nov 2023	09 May 2023	05 Nov 2023	11 May 2023
TP4	SE247176.004	LB278950	09 May 2023	09 May 2023	05 Nov 2023	09 May 2023	05 Nov 2023	11 May 2023
TP5	SE247176.005	LB278950	09 May 2023	09 May 2023	05 Nov 2023	09 May 2023	05 Nov 2023	11 May 2023
TP6	SE247176.006	LB278950	09 May 2023	09 May 2023	05 Nov 2023	09 May 2023	05 Nov 2023	11 May 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP2	SE247176.002	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP3	SE247176.003	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP4	SE247176.004	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP5	SE247176.005	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023
TP6	SE247176.006	LB278945	09 May 2023	09 May 2023	23 May 2023	09 May 2023	18 Jun 2023	12 May 2023

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP2	SE247176.002	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP3	SE247176.003	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP4	SE247176.004	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP5	SE247176.005	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP6	SE247176.006	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP1	SE247176.001	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP2	SE247176.002	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP3	SE247176.003	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP4	SE247176.004	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP5	SE247176.005	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023
TP6	SE247176.006	LB278956	09 May 2023	09 May 2023	23 May 2023	09 May 2023	23 May 2023	11 May 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	TP1	SE247176.001	%	60 - 130%	88
	TP2	SE247176.002	%	60 - 130%	97
	TP3	SE247176.003	%	60 - 130%	98
	TP4	SE247176.004	%	60 - 130%	98
	TP5	SE247176.005	%	60 - 130%	97
	TP6	SE247176.006	%	60 - 130%	90

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	TP1	SE247176.001	%	60 - 130%	88
	TP2	SE247176.002	%	60 - 130%	89
	TP3	SE247176.003	%	60 - 130%	88
	TP4	SE247176.004	%	60 - 130%	90
	TP5	SE247176.005	%	60 - 130%	88
	TP6	SE247176.006	%	60 - 130%	87
d14-p-terphenyl (Surrogate)	TP1	SE247176.001	%	60 - 130%	95
	TP2	SE247176.002	%	60 - 130%	96
	TP3	SE247176.003	%	60 - 130%	93
	TP4	SE247176.004	%	60 - 130%	96
	TP5	SE247176.005	%	60 - 130%	95
	TP6	SE247176.006	%	60 - 130%	94

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	TP1	SE247176.001	%	70 - 130%	88
	TP2	SE247176.002	%	70 - 130%	89
	TP3	SE247176.003	%	70 - 130%	88
	TP4	SE247176.004	%	70 - 130%	90
	TP5	SE247176.005	%	70 - 130%	88
	TP6	SE247176.006	%	70 - 130%	87
d14-p-terphenyl (Surrogate)	TP1	SE247176.001	%	70 - 130%	95
	TP2	SE247176.002	%	70 - 130%	96
	TP3	SE247176.003	%	70 - 130%	93
	TP4	SE247176.004	%	70 - 130%	96
	TP5	SE247176.005	%	70 - 130%	95
	TP6	SE247176.006	%	70 - 130%	94
d5-nitrobenzene (Surrogate)	TP1	SE247176.001	%	70 - 130%	90
	TP2	SE247176.002	%	70 - 130%	92
	TP3	SE247176.003	%	70 - 130%	91
	TP4	SE247176.004	%	70 - 130%	92
	TP5	SE247176.005	%	70 - 130%	90
	TP6	SE247176.006	%	70 - 130%	90

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	TP1	SE247176.001	%	60 - 130%	83
	TP2	SE247176.002	%	60 - 130%	73
	TP3	SE247176.003	%	60 - 130%	76
	TP4	SE247176.004	%	60 - 130%	77
	TP5	SE247176.005	%	60 - 130%	82
	TP6	SE247176.006	%	60 - 130%	79
d4-1,2-dichloroethane (Surrogate)	TP1	SE247176.001	%	60 - 130%	79
	TP2	SE247176.002	%	60 - 130%	70
	TP3	SE247176.003	%	60 - 130%	73
	TP4	SE247176.004	%	60 - 130%	77
	TP5	SE247176.005	%	60 - 130%	74
	TP6	SE247176.006	%	60 - 130%	78
d8-toluene (Surrogate)	TP1	SE247176.001	%	60 - 130%	94
	TP2	SE247176.002	%	60 - 130%	81
	TP3	SE247176.003	%	60 - 130%	83
	TP4	SE247176.004	%	60 - 130%	87
	TP5	SE247176.005	%	60 - 130%	93

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued) — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	TP6	SE247176.006	%	60 - 130%	91

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	TP1	SE247176.001	%	60 - 130%	83
	TP2	SE247176.002	%	60 - 130%	73
	TP3	SE247176.003	%	60 - 130%	76
	TP4	SE247176.004	%	60 - 130%	77
	TP5	SE247176.005	%	60 - 130%	82
	TP6	SE247176.006	%	60 - 130%	79
d4-1,2-dichloroethane (Surrogate)	TP1	SE247176.001	%	60 - 130%	79
	TP2	SE247176.002	%	60 - 130%	70
	TP3	SE247176.003	%	60 - 130%	73
	TP4	SE247176.004	%	60 - 130%	77
	TP5	SE247176.005	%	60 - 130%	74
	TP6	SE247176.006	%	60 - 130%	78
d8-toluene (Surrogate)	TP1	SE247176.001	%	60 - 130%	94
	TP2	SE247176.002	%	60 - 130%	81
	TP3	SE247176.003	%	60 - 130%	83
	TP4	SE247176.004	%	60 - 130%	87
	TP5	SE247176.005	%	60 - 130%	93
	TP6	SE247176.006	%	60 - 130%	91

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB278969.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB278945.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	82

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB278945.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	89
		d14-p-terphenyl (Surrogate)	%	-	97

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB278945.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB278945.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	92
		2-fluorobiphenyl (Surrogate)	%	-	89
		d14-p-terphenyl (Surrogate)	%	-	97

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB278950.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result
LB278945.001		TRH C10-C14	mg/kg	20	<20
		TRH C15-C28	mg/kg	45	<45
		TRH C29-C36	mg/kg	45	<45
		TRH C37-C40	mg/kg	100	<100
		TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB278956.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	80
		d8-toluene (Surrogate)	%	-	101
		Bromofluorobenzene (Surrogate)	%	-	86
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB278956.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	80

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.004	LB278969.014	Mercury	mg/kg	0.05	<0.05	<0.05	142	0
SE247177.011	LB278969.022	Mercury	mg/kg	0.05	<0.05	<0.05	140	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.004	LB278959.011	% Moisture	%w/w	1	17.1	16.7	36	3
SE247177.012	LB278959.020	% Moisture	%w/w	1	<1	<1	200	0

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.004	LB278945.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.14	30	4
SE247177.008	LB278945.024		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.008	LB278945.024		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	30	1

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.004	LB278945.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.6	30	23
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	4
SE247177.010	LB278945.024		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may give a different calculated RPD.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.010	LB278945.024	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	17
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.011	LB278950.022		Arsenic, As	mg/kg	1	5	3	53	40
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	15	15	33	1
			Copper, Cu	mg/kg	0.5	29	29	32	1
			Nickel, Ni	mg/kg	0.5	9.4	8.1	36	15
			Lead, Pb	mg/kg	1	46	59	32	25
			Zinc, Zn	mg/kg	2	67	55	33	19

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.004	LB278945.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE247177.010	LB278945.024		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.007	LB278956.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.8	7.9	50	2
			d8-toluene (Surrogate)	mg/kg	-	8.7	9.0	50	3
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.0	7.7	50	10
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE247177.007	LB278956.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.8	7.9	30	2
			d8-toluene (Surrogate)	mg/kg	-	8.7	9.0	30	3
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.0	7.7	30	10
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278969.002	Mercury	mg/kg	0.05	0.22	0.2	80 - 120	109

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278945.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	81
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	86
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	81
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	83
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	94
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	100
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	87

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278945.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	89
		Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	86
		Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	73
		Ethion	mg/kg	0.2	1.6	2	60 - 140	81
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278945.002		Naphthalene	mg/kg	0.1	3.3	4	60 - 140	84
		Acenaphthylene	mg/kg	0.1	3.6	4	60 - 140	89
		Acenaphthene	mg/kg	0.1	3.7	4	60 - 140	91
		Phenanthrene	mg/kg	0.1	3.6	4	60 - 140	91
		Anthracene	mg/kg	0.1	3.5	4	60 - 140	88
		Fluoranthene	mg/kg	0.1	3.4	4	60 - 140	86
		Pyrene	mg/kg	0.1	3.8	4	60 - 140	96
		Benzo(a)pyrene	mg/kg	0.1	3.6	4	60 - 140	89
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	91
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278950.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	106
	Cadmium, Cd	mg/kg	0.3	4.2	4.81	70 - 130	87
	Chromium, Cr	mg/kg	0.5	40	38.31	80 - 120	106
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	108
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	103
	Lead, Pb	mg/kg	1	93	89.9	80 - 120	104
	Zinc, Zn	mg/kg	2	280	273	80 - 120	102

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278945.002		TRH C10-C14	mg/kg	20	50	40	60 - 140	124
		TRH C15-C28	mg/kg	45	48	40	60 - 140	120
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	88
	TRH F Bands	TRH >C10-C16	mg/kg	25	49	40	60 - 140	123
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	108
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	90

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278956.002	Monocyclic	Benzene	mg/kg	0.1	5.2	5	60 - 140	104
	Aromatic	Toluene	mg/kg	0.1	4.6	5	60 - 140	92
		Ethylbenzene	mg/kg	0.1	4.5	5	60 - 140	90
		m/p-xylene	mg/kg	0.2	8.7	10	60 - 140	87
		o-xylene	mg/kg	0.1	4.6	5	60 - 140	93
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	10	70 - 130	83

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278956.002	Surrogates	d8-toluene (Surrogate)	mg/kg	-	9.5	10	70 - 130	95
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.0	10	70 - 130	90

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB278956.002		TRH C6-C10	mg/kg	25	100	92.5	60 - 140	111
		TRH C6-C9	mg/kg	20	89	80	60 - 140	111
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	10	70 - 130	83
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.0	10	70 - 130	90
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	75	62.5	60 - 140	120

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278969.004	Mercury	mg/kg	0.05	0.32	0.13	0.2	93

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278945.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	75
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	82
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	77
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	78
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	89
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	96
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	<1	<1	-	-
			Total OC VIC EPA	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.13	-	85

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278945.004		Azinphos-methyl (Guthion)	mg/kg	0.2	2.1	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	<0.2	2	90
			Diazinon (Dimpylate)	mg/kg	0.5	1.8	<0.5	2	88
			Dichlorvos	mg/kg	0.5	1.5	<0.5	2	76
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.8	<0.2	2	89
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	9.0	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	89
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	95

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278945.004	Naphthalene	mg/kg	0.1	3.9	<0.1	4	99
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.2	<0.1	4	103
		Acenaphthene	mg/kg	0.1	4.3	<0.1	4	106
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278945.004		Phenanthrene	mg/kg	0.1	4.3	0.2	4	101
			Anthracene	mg/kg	0.1	4.1	<0.1	4	100
			Fluoranthene	mg/kg	0.1	4.1	0.3	4	95
			Pyrene	mg/kg	0.1	4.6	0.3	4	107
			Benzo(a)anthracene	mg/kg	0.1	0.1	0.2	-	-
			Chrysene	mg/kg	0.1	<0.1	0.2	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.1	0.2	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	4.2	0.2	4	100
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.2	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.2	0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.3	0.3	-	-
			Total PAH (18)	mg/kg	0.8	34	1.6	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	91
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	89
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	95

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278950.004	Arsenic, As	mg/kg	1	54	8	50	92
		Cadmium, Cd	mg/kg	0.3	38	<0.3	50	75
		Chromium, Cr	mg/kg	0.5	69	26	50	85
		Copper, Cu	mg/kg	0.5	66	25	50	81
		Nickel, Ni	mg/kg	0.5	51	5.1	50	91
		Lead, Pb	mg/kg	1	92	58	50	67 ⑨
		Zinc, Zn	mg/kg	2	130	95	50	66 ⑨

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278945.004		TRH C10-C14	mg/kg	20	60	<20	40	142 ⑨
			TRH C15-C28	mg/kg	45	130	<45	40	207 ⑨
			TRH C29-C36	mg/kg	45	110	88	40	68
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	300	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	230	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	61	<25	40	144 ⑨
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	61	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	170	100	40	168 ⑨
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278956.004	Monocyclic	Benzene	mg/kg	0.1	5.5	<0.1	5	109
		Aromatic	Toluene	mg/kg	0.1	5.4	<0.1	5	107
			Ethylbenzene	mg/kg	0.1	5.2	<0.1	5	103
			m/p-xylene	mg/kg	0.2	9.9	<0.2	10	99
			o-xylene	mg/kg	0.1	5.2	<0.1	5	104
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.0	7.9	10	80
			d8-toluene (Surrogate)	mg/kg	-	9.6	9.4	10	96
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.3	10	87
		Totals	Total BTEX*	mg/kg	0.6	31	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	15	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278956.004		TRH C6-C10	mg/kg	25	110	<25	92.5	114
			TRH C6-C9	mg/kg	20	93	<20	80	116
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.0	7.9	10	80
			d8-toluene (Surrogate)	mg/kg	-	9.6	9.4	10	96

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433**

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE247176.001	LB278956.004	Surrogates	Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.3	-	87
		VPH F	Benzene (F0)	mg/kg	0.1	5.5	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	77	<25	62.5	119

MATRIX SPIKE DUPLICATES

SE247176 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

id samples expressed on a dry weight basis.

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

*	NATA accreditation does not cover the performance of this service .
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Admin
Client	NEO CONSULTING PTY LTD
Address	PO BOX 279 RIVERSTONE NSW 2765
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Facsimile	(Not specified)
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Project	**N6431**
Order Number	**N6431**
Samples	6

LABORATORY DETAILS

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SGS Reference	**SE247176 R0**
Date Received	09 May 2023
Date Reported	16 May 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 #2: Asbestos found as approx 10x5x2mm cement sheet fragments x3.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE247176.001	TP1	Soil	712g Clay, Sand, Soil, Rocks	09 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE247176.002	TP2	Soil	677g Clay, Sand, Soil, Rocks	09 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE247176.003	TP3	Soil	519g Clay, Sand, Soil, Rocks	09 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE247176.004	TP4	Soil	657g Clay, Sand, Soil, Rocks	09 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE247176.005	TP5	Soil	633g Clay, Sand, Soil, Rocks	09 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE247176.006	TP6	Soil	728g Clay, Sand, Soil, Rocks	09 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 12/5/2023

PARAMETER	UOM	LOR	TP1 SOIL - 9/5/2023 SE247176.001	TP2 SOIL - 9/5/2023 SE247176.002	TP3 SOIL - 9/5/2023 SE247176.003	TP4 SOIL - 9/5/2023 SE247176.004	TP5 SOIL - 9/5/2023 SE247176.005
Total Sample Weight*	g	1	**712**	**677**	**519**	**657**	**633**
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	**0.0597**	<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	**0.009**	<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	**0.009**	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	Chrysotile	NAD	NAD	NAD

PARAMETER	UOM	LOR	TP6 SOIL - 9/5/2023 SE247176.006
Total Sample Weight*	g	1	**728**
Bonded ACM in >7mm Sample*	g	0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001
Fibre Type*	No unit	-	NAD

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable ’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

FOOTNOTES

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

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

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

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

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

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

CHAIN OF CUSTODY & ANALYSIS REQUEST

SGS Environmental Services Sydney
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplereceipt.sydney@sgs.com

Lab ID Number: *(please quote on correspondence)*

Company Name:	Neo Consulting Pty Ltd	Project Name/No:	N6431
Address:	186 Riverstone Parade	Purchase Order No:	**QUOTE NUMER: 322722**
	Riverstone NSW 2765	Results Required Date:	Next Day/3 days/**Standard**
		Telephone:	0416680375 Fax:
Contact Name:	Nick Caltabiano	Email Results and invoices to :	nick@neoconsulting, admin@neoconsulting, oskar@neoconsulting, sarah@neoconsulting, eshan@neoconsulting
Quotation No:			

SGS ID	Client Sample ID	Sampling Date/ Time	Matrix (Tick as appropriate): Soil Sample	Water Sample	Other	NO. OF CONTAINERS	ANALYSIS REQUESTED: NEO 1	NEO 2	NEO 3	NEO 4	Asbestos NEPM	Asbestos ID
1	TP1	09/05/2023	x			2		x			x	
2	TP 2	09/05/2023	x			2		x			x	
3	TP 3	09/05/2023	x			2		x			x	
4	TP 4	09/05/2023	x			2		x			x	
5	TP 5	09/05/2023	x			2		x			x	
6	TP 6	09/05/2023	x			2		x			x	

Additional Report Formats

- ☐ NEPM
- ☐ CSV
- ☐ ESDAT
- ☐ DQO
- ☐ GO, Guidelines --------
- ☐ Others _____

Notes/Guidelines/LOR/ Special instructions

SGS EHS Sydney COC
SE247176

Relinquished By: Ehsan Zare	Date/Time: **09/05/2023**	Received By: B Rubarey	Date/Time: 09/05/23 @ 3:20
Relinquished By:	Date/Time:	Received By:	Date/Time:
Samples Intact: Yes / No	Temperature: °C	Sample Security Sealed: *Yes / No*	Hazards: *e.g. may contain Asbestos*
Comments / Subcontracting details:			

SAMPLE RECEIPT ADVICE

SE247176

CLIENT DETAILS

Contact	Admin
Client	NEO CONSULTING PTY LTD
Address	PO BOX 279 RIVERSTONE NSW 2765
Telephone	0416 680 375
Facsimile	(Not specified)
Email	admin@neoconsulting.com.au
Project	**N6431**
Order Number	**N6431**
Samples	6

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Tue 9/5/2023
Report Due	Tue 16/5/2023
SGS Reference	**SE247176**

SUBMISSION DETAILS

This is to confirm that 6 samples were received on Tuesday 9/5/2023. Results are expected to be ready by COB Tuesday 16/5/2023. Please quote SGS reference SE247176 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	6 Soil	Type of documentation received	COC
Date documentation received	9/5/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	6.7°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

SAMPLE RECEIPT ADVICE

SE247176

CLIENT DETAILS

Client NEO CONSULTING PTY LTD

Project N6431

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	TP1	30	14	26	7	10	11	7
002	TP2	30	14	26	7	10	11	7
003	TP3	30	14	26	7	10	11	7
004	TP4	30	14	26	7	10	11	7
005	TP5	30	14	26	7	10	11	7
006	TP6	30	14	26	7	10	11	7

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE247176

CLIENT DETAILS

Client NEO CONSULTING PTY LTD

Project N6431

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Gravimetric Determination of Asbestos in Soil	Mercury in Soil	Moisture Content
001	TP1	2	9	1	1
002	TP2	2	9	1	1
003	TP3	2	9	1	1
004	TP4	2	9	1	1
005	TP5	2	9	1	1
006	TP6	2	9	1	1

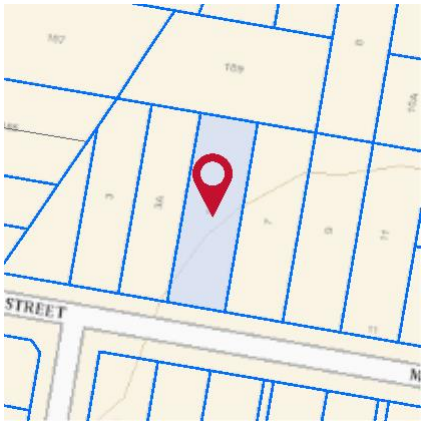
The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall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

APPENDIX D

Property Report and Relevant Information

Property Report

5 MARY STREET NORTHMEAD 2152



Property Details

Address:	5 MARY STREET NORTHMEAD 2152
Lot/Section /Plan No:	43/-/DP8884
Council:	CITY OF PARRAMATTA COUNCIL

Summary of planning controls

Planning controls held within the Planning Database are summarised below. The property may be affected by additional planning controls not outlined in this report. Please contact your council for more information.

Local Environmental Plans	Parramatta Local Environmental Plan 2023 (pub. 3-3-2023)
Land Zoning	R2 - Low Density Residential: (pub. 3-3-2023)
Height Of Building	9 m
Floor Space Ratio	0.5:1
Minimum Lot Size	700 m²
Heritage	NA
Land Reservation Acquisition	NA
Foreshore Building Line	NA
Local Provisions	30 km
	Dual Occupancy Subdivision Prohibited

Detailed planning information

State Environmental Planning Policies which apply to this property

State Environmental Planning Policies can specify planning controls for certain areas and/or types of development. They can also identify the development assessment system that applies and the type of environmental assessment that is required.

- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Excluded (pub. 21-10-2022)
- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Subject Land (pub. 2-12-2021)
- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Sydney Harbour Catchment (pub. 21-10-2022)
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004: Land Application (pub. 25-6-2004)
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008: Land Application (pub. 12-12-2008)
- State Environmental Planning Policy (Housing) 2021: Land Application (pub. 26-11-2021)
- State Environmental Planning Policy (Industry and Employment) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Planning Systems) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Primary Production) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Resilience and Hazards) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Resources and Energy) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Transport and Infrastructure) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development: Land Application (pub. 26-7-2002)

Other matters affecting the property

Information held in the Planning Database about other matters affecting the property appears below. The property may also be affected by additional planning controls not outlined in this report. Please speak to your council for more information

Local Aboriginal Land Council	DEERUBBIN
Regional Plan Boundary	Greater Sydney

5 Mary Street, Northmead

Proposed Child Care Centre

DRAWING SCHEDULE:

GENERAL NOTES

1. CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR PREPARING SHOP DRAWINGS. DO NOT SCALE FROM DRAWINGS.
2. ALL BUILDING WORKS SHALL BE IN ACCORDANCE WITH THE RELEVANT NATIONAL CONSTRUCTION CODE (NCC), BUILDING CODE OF AUSTRALIA (BCA), RELEVANT AUSTRALIAN STANDARDS (AS), INCLUDING AMENDMENTS AND THE REQUIREMENTS OF COUNCIL AND PRIVATE CERTIFIERS (PC) AND OTHER AUTHORITIES HAVING JURISDICTION.
3. THE ARCHITECTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONSULTANT DRAWINGS AND REPORTS FOR COORDINATION AND INFORMATION.
4. THRESHOLDS AND DOORWAYS ARE FLUSH FOR WHEELCHAIR ACCESS IN ACCORDANCE WITH AS1428.1 DESIGN FOR ACCESS AND MOBILITY. REFER TO ACCESS CONSULTANT REPORT FOR DISPENSATIONS AND POTENTIAL PERFORMANCE SOLUTION PROPOSED.
5. DRAWINGS ARE NOT COORDINATED BY JANSSEN DESIGNS. CONDITIONS AND DOCUMENTS NEED TO BE COORDINATED AND CHECKED TO CONFIRM THEY SATISFY THE AUSTRALIAN STANDARDS, SPECIALIST DISABILITY ACCOMMODATION, DESIGN FOR DISABILITY ACCOMMODATION, DEVELOPMENT APPLICATION REQUIREMENTS, THE NCC, BCA CODES AND CONTROLS THAT APPLY TO THIS PROJECT. A COORDINATED CONSTRUCTION SET MAY VARY FROM THE PRODUCED DRAWINGS. JANSSEN DESIGNS DOES NOT ACCEPT ANY LIABILITY, DIRECT OR INDIRECT, FOR ANY LOSS LIABILITY OR LOSS SUFFERED OR INCURRED BY ANY PERSON OR THIRD PARTY PLACING ANY RELIANCE ON THE SERVICES OR DOCUMENTS OR ADVICE ARISING IN CONNECTION WITH THE SERVICE.
6. ALL STRUCTURAL ELEMENTS ARE SHOWN INDICATIVELY AND ARE TO BE CONFIRMED WITH THE DESIGN, DETAIL AND SPECIFICATION OF THE STRUCTURAL ENGINEER.
7. ALL STRUCTURAL FRAMING, LOADING, BEARING, RETAINING AND FIXING OF ELEMENTS ARE TO THE DESIGN, DETAIL AND SPECIFICATION OF THE STRUCTURAL ENGINEER.
8. ALL SERVICES ELEMENTS INCLUDING HYDRAULICS, ELECTRICAL, MECHANICAL, FIRE AND COMMUNICATION SERVICES SHOWN ARE INDICATIVE ONLY. REFER TO SERVICES CONSULTANT SEPARATE DOCUMENTATION AND SPECIFICATION FOR DETAILED DESIGN.
9. ANY DISCREPANCIES BETWEEN ARCHITECTURAL CONSULTANT DOCUMENTATION ARE TO BE REPORTED TO THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.
10. ALL CONCRETE AND METALWORK ITEMS, SUCH AS SHOP DRAWINGS, TO BE ORGANISED AND REVIEWED BY THE CLIENT.
11. ALL SITE AND BUILDING GRID SET-OUT IS TO BE CONDUCTED AND VERIFIED BY A REGISTERED SURVEYOR BEFORE COMMENCEMENT OF CONSTRUCTION WITH ANY DISCREPANCIES NOTIFIED TO THE CLIENT FOR CLARIFICATION.

JANSSEN DESIGNS

info@janssendesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636

Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS

ISSUE:	DESCRIPTION	DATE:

Project Title:

Proposed Child Care Centre

DRAWING TITLE:

Cover Page

ADDRESS:

5 Mary Street, Northmead

CLIENT DETAILS:

Kirribilli Capital

LOCAL GOVERNMENT AREA:

Parramatta Council

Issue For:	Issue:		
DA	A		
Date:	**Scale:**	**Drawing #:**	**Project #:**
5.10.2022	1:100	A000	10198

COMPLIANCE TABLE

TOTAL SITE AREA	1,322.00m2

GROSS FLOOR AREA

LOWER GROUND FLOOR	XXXXm2
GROUND FLOOR	XXXXm2
FIRST FLOOR	XXXXm2
TOTAL GROSS FLOOR AREA	XXXXm2

MAX. REQUIRED FLOOR SPACE RATIO	661.00m2 | 0.5:1 (CHILD CARE DESIGN GUIDELINE)
PROPOSED FLOOR SPACE RATIO	XXXXm2 | XXXX - COMPLIES
MAX BUILDING HEIGHT	9M
PROPOSED BUILDING HEIGHT	XXXXM - COMPLIES
MIN. REQUIRED LANDSCAPED AREA	40% | 528.8m2
PROPOSED LANDSCAPED AREA	XXXXm2 | XX% - COMPLIES
MIN. REQUIRED DEEP SOIL AREA	30% | 396.6m2
PROPOSED DEEP SOIL AREA	XXXXm2 | XX% - REQUIRED

CHILDCARE

NUMBER OF CHILDREN:

0-2 YEARS - XX PLACES
2-3 YEARS - XX PLACES
3-6 YEARS - XX PLACES

TOTAL - XXX PLACES

NUMBER OF TEACHERS:

0-2 YEARS - XX TEACHERS @ 1:4 RATIO
2-3 YEARS - XX TEACHERS @ 1:5 RATIO
3-6 YEARS - XX TEACHERS @ 1:10 RATIO

INDOOR PLAY AREA:

0-2 YEARS - XXXm2 @ 3.25m2 / KID
2-3 YEARS - XXXm2 @ 3.25m2 / KID
3-6 YEARS - XXXm2 @ 3.25m2 / KID

OUTDOOR PLAY AREA:

TOTAL AREA - XXXm2 @ 7m2 / KID

PARKING

MINIMUM REQUIRED	1 CARSPACE TO 4 PLACES - XX.00
TOTAL PARKING SPACES PROPOSED	XX CARSPACES - COMPLIES
VISITOR SPACES	XX CARSPACES
STAFF SPACES	XX CARSPACES

ZONING - R2 LOW DENSITY RESIDENTIAL

FLOOR SPACE RATIO - N/A (0.5:1 AS PER CHILDCARE DESIGN GUIDELINE)

MAXIMUM BUILDING HEIGHT - 9M

HERITAGE - N/A

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Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS

ISSUE:	DESCRIPTION	DATE:

Project Title:
Proposed Child Care Centre

DRAWING TITLE:
Calculations and LEP Controls

ADDRESS:
5 Mary Street, Northmead

CLIENT DETAILS:
Kirribilli Capital

LOCAL GOVERNMENT AREA:
Parramatta Council

Issue For:	Issue:		
DA	A		
Date:	Scale:	Drawing #:	Project #:
5.10.2022	1:100	A000	10198

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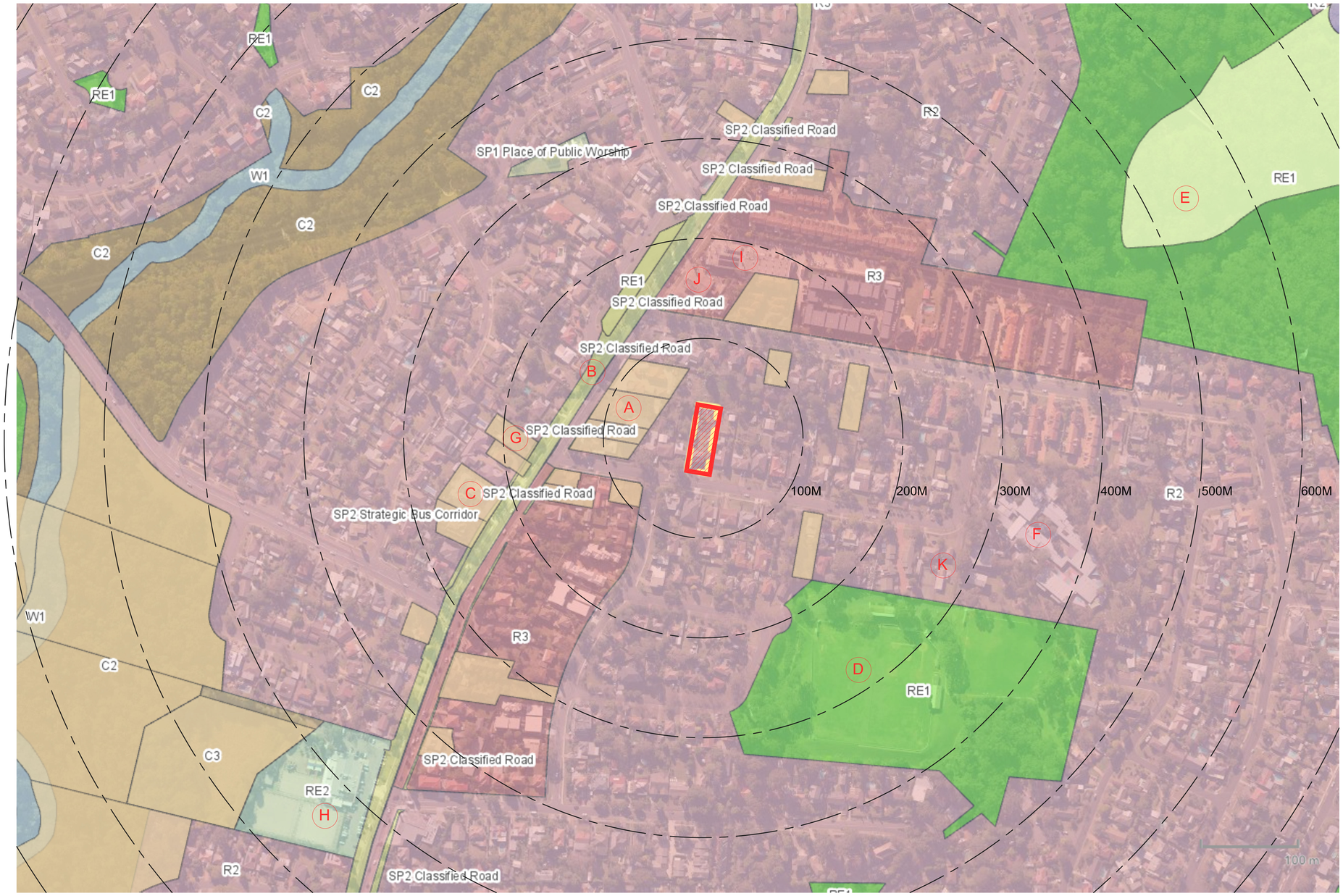

LANDMARKS

A - CUPA JOES DRIVE THRU

B - WINDSOR ROAD

C - NORTHMEAD EARLY EDUCATION CENTRE

D - NORTHMEAD RESERVE

E - EXCELSIOR RESERVE

F - THE HILLS SCHOOL

G - MYRAI MEDICAL CENTRE

H - NBC SPORTS CLUB

I - COULTER SWIMMING NORTHMEAD

J - SHELL PETROL STATION

K - LITTLE ZAK'S ACADEMY NORTHMEAD

SITE CONTEXT PLAN -
N.T.S.

JANSSEN DESIGNS

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Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS		
ISSUE:	DESCRIPTION	DATE:

Project Title:
Proposed Child Care Centre

DRAWING TITLE:
Site Context Plan

ADDRESS:
5 Mary Street, Northmead

CLIENT DETAILS:
Kirribilli Capital

LOCAL GOVERNMENT AREA:
Parramatta Council

Issue For:	Issue:	
DA	A	

Date:	Scale:	Drawing #:	Project #:
5.10.2022	1:100	A000	10198

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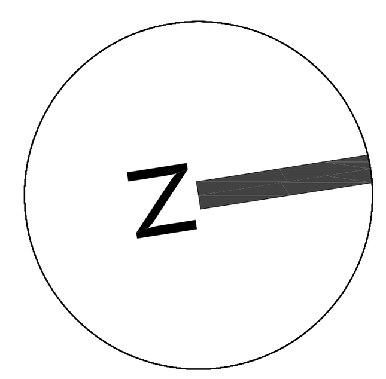
DEMOLITION PLAN -
1:100 @ A1



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Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS		
ISSUE:	DESCRIPTION	DATE:

Project Title:
Proposed Child Care Centre

DRAWING TITLE:
Demolition Plan

ADDRESS:
5 Mary Street, Northmead

CLIENT DETAILS:
Kirribilli Capital

LOCAL GOVERNMENT AREA:
Parramatta Council

Issue For: DA | Issue: A

Date: 5.10.2022 | Scale: 1:100 | Drawing #: A000 | Project #: 10198

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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

DEMOLITION PLAN -
1:100 @ A1

KEY:

- CARPORT
- SITE
- NUMBER OF STOREYS
- CONTOURS
- OVERLOOKING
- PRIVATE OPEN SPACE
- PEDESTRIANS & VEHICLE ACCESS POINTS
- EXISTING TREES
- VIEWS

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AMENDMENTS

ISSUE:	DESCRIPTION	DATE:

Project Title:
Proposed Child Care Centre

DRAWING TITLE:
Demolition Plan

ADDRESS:
5 Mary Street, Northmead

CLIENT DETAILS:
Kirribilli Capital

LOCAL GOVERNMENT AREA:
Parramatta Council

Issue For:	Issue:
DA	A

Date:	Scale:	Drawing #:	Project #:
5.10.2022	1:100	A000	10198

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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

LOWER GROUND FLOOR PLAN -
1:100 @ A1

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Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS		
ISSUE:	DESCRIPTION	DATE:

Project Title:
Proposed Child Care Centre

DRAWING TITLE:
Lower Ground Floor Plan

ADDRESS:
5 Mary Street, Northmead

CLIENT DETAILS:
Kirribilli Capital

LOCAL GOVERNMENT AREA:
Parramatta Council

Issue For: DA | Issue: A

Date: 5.10.2022 | Scale: 1:100 | Drawing #: A000 | Project #: 10198

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DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

C
DP 415985

44
DP 8884

UPPER GROUND FLOOR PLAN -
1:100 @ A1

JANSSEN DESIGNS

info@janssendesigns.com.au | PO Box 41, Kenthurst 2156 | m: 0423 216 636
Nominated Architect: Jake Janssen NSW ARB 11575

AMENDMENTS

ISSUE:	DESCRIPTION	DATE:

Project Title:
Proposed Child Care Centre

DRAWING TITLE:
Upper Ground Floor Plan

ADDRESS:
5 Mary Street, Northmead

CLIENT DETAILS:
Kirribilli Capital

LOCAL GOVERNMENT AREA:
Parramatta Council

Issue For:	Issue:	
DA	A	

Date:	Scale:	Drawing #:	Project #:
5.10.2022	1:100	A000	10198

NOTE: ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BCA, SAA & COUNCILS CONDITIONS **COPYRIGHT:**. DO NOT SCALE OFF ARCHITECTURAL DRAWINGS. THESE NOTES MUST BE READ IN CONJUNCTION WITH COLOURS SELECTION FOR ADDITIONAL DETAILS ON APPLIANCES, PC ITEMS & SHOWER SIZES SHOWN ON PLAN ARE INSIDE HOB DIMENSIONS SHOWER SCREENS TO BE FITTED ON INSIDE OF HOB BULKHEADS MAY BE REQUIRED TO ACCOMMODATE DRAINAGE LINES & STEEL BEAMS POSITION TO BE DETERMINED ON SITE. **USE FIGURED DIMENSIONS ONLY, DO NOT SCALE.** FINISHED GROUND LEVELS ON PLANS ARE SUBJECT TO SITE CONDITIONS, ALL CALCULATED DIMENSIONS ARE SUBJECT TO SITE MEASURE DURING CONSTRUCTION & NO ALLOWANCE HAS BEEN MADE FOR SHRINKAGE OR MILLING POSITION OF ELECTRICAL METER TO BE DETERMINED ON SITE IN ACCORDANCE TO THE TURRET POSITION FRONT GARDEN TAP ON METER **ENERGY SMART DESIGN:** AAA RATED WATER CONSERVATION DEVICES INCLUDE RAINWATER TANKS SHOWER HEADS, WATER TAP FLOW REGULATORS, DUAL FLUSH TOILETS CISTERNS & COMPLIANT HOT WATER SYSTEMS WITH MINIMUM GREEN HOUSE SCORE OF 3 STARS ARE TO BE USED IN THIS DEVELOPMENT. OCCUPANTS ARE ENCOURAGED TO USE AAA RATED DISH WASHING MACHINES WITH FRONT LOADING WHERE POSSIBLE. OWNDER/BUILDER MUST READ ALL PLANS IN CONJUNCTION WITH THE ABSA & BASIX REPORT

DO NOT SCALE OFF ARCHITECTURAL DRAWINGS

FIRST GROUND FLOOR PLAN -
1:100 @ A1

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AMENDMENTS

ISSUE:	DESCRIPTION	DATE:

Project Title:
Proposed Child Care Centre

DRAWING TITLE:
First Floor Plan

ADDRESS:
5 Mary Street, Northmead

CLIENT DETAILS:
Kirribilli Capital

LOCAL GOVERNMENT AREA:
Parramatta Council

Issue For: DA | Issue: A

Date: 5.10.2022 | Scale: 1:100 | Drawing #: A000 | Project #: 10198

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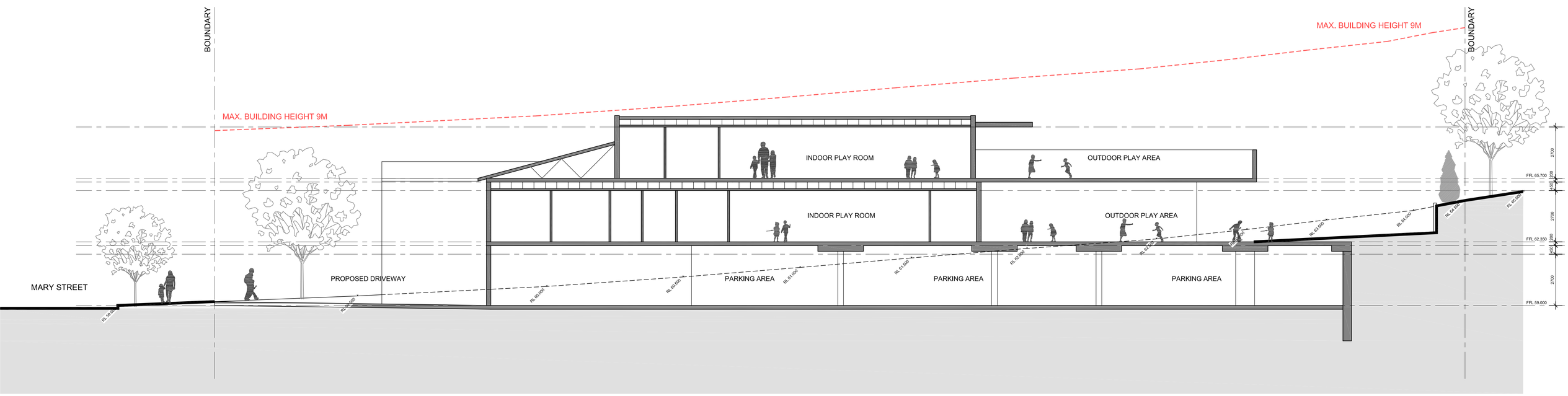
DO NOT SCALE OFF ARCHITECTURAL DRAWINGS



SECTION A -
1:100 @ A1

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AMENDMENTS		
ISSUE:	DESCRIPTION	DATE:

Project Title:
Proposed Child Care Centre

DRAWING TITLE:
First Floor Plan

ADDRESS:
5 Mary Street, Northmead

CLIENT DETAILS:
Kirribilli Capital

LOCAL GOVERNMENT AREA:
Parramatta Council

Issue For:	Issue:	
DA	A	

Date:	Scale:	Drawing #:	Project #:
5.10.2022	1:100	A000	10198

Job No 34152511

Phone: 1100
www.byda.com.au

Caller Details

Contact:	Nick Caltabiano	**Caller Id:**	3063293	**Phone:**	0423 834 874
Company:	Neo Consulting				
Address:	186 Riverstone Parade Riverstone NSW 2765	**Email:**	neo.searches.dbyd@gmail.com		

Dig Site and Enquiry Details

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

User Reference: Northmead
Working on Behalf of: Private

Enquiry Date:	Start Date:	End Date:
08/05/2023	09/05/2023	23/05/2023

Address:
5 Mary Street
Northmead NSW 2152

Job Purpose:
Excavation

Onsite Activities:
Vertical Boring

Location of Workplace:
Private

Location in Road:

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

Notes/Description of Works:
Not supplied

Your Responsibilities and Duty of Care

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

Asset Owner Details

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

Seq. No.	Authority Name	Phone	Status
224314470	Endeavour Energy	(02) 9853 4161	NOTIFIED
224314468	Jemena Gas North	1300 880 906	NOTIFIED
224314466	NBN Co NswAct	1800 687 626	NOTIFIED
224314467	Nextgen NCC - NSW	1800 262 663	NOTIFIED
224314469	Sydney Water	13 20 92	NOTIFIED
224314471	Telstra NSW Central	1800 653 935	NOTIFIED

END OF UTILITIES LIST