Land & Groundwater Consulting Pty Ltd
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27 August 2021

Ref: LG2124.03 SALINITY RPT 27-08-21.docx

Ding Xu
Vaughan Constructions Pty Ltd
880 Lorimer Street
Port Melbourne VIC 3207

Via Email: Ding.Xu@vaughans.com.au

Dear Ding,

Re: Salinity Investigation Report
22-23 Lambridge Place, Penrith, NSW

1. Executive Summary

Land & Groundwater Consulting Pty Ltd (LG) has been engaged by Vaughan Constructions Pty Ltd (Vaughan Constructions), to undertake a salinity investigation at 22-23 Lambridge Place, Penrith, NSW (the site). The site is legally described as Lot 11 in Deposited Plan (DP) 1087962 with a total area of approximately 6,301 m^2 (refer **Figures 1** and **2**).

LG understands that a development application (DA) has been submitted to Cumberland Council (Council) to develop the site. It is understood that development of the site will comprise the extension of the existing warehouse facility currently located at Lot 12 in DP 1087962, with a total proposed building area of approximately 1,015 m^2.

The salinity investigation was completed to determine the potential for onsite salinity and ensure that the site is suitable for the proposed land use.

The laboratory analytical results have indicated that the soils from 0.1 m to 1.0 m below ground level (BGL) of the profile have negligible salinity effects and are non-saline.

Consequently, site-specific salinity management and/or a soil salinity management plan (SSMP) **are NOT** required for the handling of these soils.

2. Objectives

The objectives of the salinity investigation were as follows:

- Support the DA by addressing the requirements by Council for in-situ salinity investigations, within the area of the proposed development; and
- Identify management measures for any potential risks associated with salinity during the proposed development works, if any.

3. Scope of Works

The following scope of work was completed by LG:

- Reviewed soil salinity risk potential map for the site location;
- Undertook a dial before you dig for service location clearance;
- Drilled and logged 15 soil bores to a maximum depth of 1.0 m BGL. These soil bores were located to cover the maximum extent of the site possible. The soil bores were situated in order to provide detailed information on the shallow soil profiles and materials encountered. The boreholes were withdrawn at depth intervals of 0.1 to 0.3 and 0.5 to 1.0 m for soil logging;
- Visual inspection and classification of soil samples was conducted in order to assign estimated salinity index potential;
- Collection of soil samples at depth intervals of 0.1 to 0.3 and 0.5 to 1.0 m BGL within each borehole;
- Submitted a total 31 soil samples to SGS Laboratory, a NATA registered laboratory for the analysis for salinity (ECe);
- Soil salinity results were compared against the ECe values of soil salinity classes specified by the Department of Land and Water Conservation (DLWC 2002) booklet titled *Site Investigations for Urban Salinity*; and
- On completion of the fieldwork, prepared this salinity investigation report.

4. Soil Salinity Risk Potential

A review of the map of Salinity Potential in Western Sydney 2002 prepared by NSW Department of Infrastructure, Planning and Natural Resources (2003)[1] indicated that site is located in a region of moderate salinity potential (refer **Figure 3**). The moderate salinity potential classification is attributed to scattered areas of scalding and indicator vegetation, in areas where concentrations have not been mapped. Saline areas may occur in these zones, which have not been identified or may occur if risk factors change adversely.

[1] NSW Department of Infrastructure, Planning and Natural Resources (2003), 1:100,000 Salinity Potential in Western Sydney 2002 (Reference No: GS912).

5. Soil Investigation Methodology

Field work on site was carried out by LG on 11 August 2021. Fifteen (15) boreholes (BH1 to BH15) were drilled to a maximum depth of 1.0 m BGL across the site area. **Figure 4** illustrates the soil sampling locations. These boreholes were located to cover the maximum extent of the site possible, and were supervised and logged by a qualified and experienced environmental scientist. Most soil bores were situated in order to provide detailed information on the shallow soil profiles and materials encountered.

Soil samples were collected at at depth intervals of 0.1 to 0.3 m and 0.5 to 1.0 m BGL in the soil borehole profile for subsequent laboratory analysis. Samples were chilled in field, sealed in oxygen impermeable glass jars before being frozen for transport to the NATA accredited laboratories of SGS at Alexandria. A total of 31 samples were selected and submitted to the laboratory for analysis of ECe.

6. Assessment Criteria

Urban development has been identified as having the potential to increase the salt load in western Sydney landscapes that may already exhibit significant salinity. Although salinity has been identified as being natural to the western Sydney environment and not a consequence of previous industrial land uses, it poses a concern to developers of new subdivisions in the western Sydney region.

Soil salinity results have been compared against the ECe values of soil salinity classes specified by the NSW Department of Land and Water Conservation (DLWC) 2002 booklet titled *Site Investigations for Urban Salinity*. These values are summarised in **Table 1**.

Table 1 - ECe Values of Soil Salinity Classes (DLWC 2002)

Class	ECe (dS/m)	Comments
Non saline	<2	Salinity effects mostly negligible
Slightly saline	2-4	Yields of very sensitive crops may be affected
Moderately saline	4-8	Yields of many crops affected
Very Saline	8-16	Only tolerant crops yield satisfactorily
Highly saline	>16	Only a few very tolerant crops yield satisfactorily

It is commonly considered that moderately saline to highly saline soils (as defined in **Table 1**) would require management in the urban built environment.

7. Results

7.1 Sub-surface Conditions

Field observations indicated that the predominant sub-surface conditions encountered at the areas investigated generally comprised of clay and gravel fill (poorly graded and loose), underlain with clay (of firm and stiff density). A summary of the sub-surface conditions encountered at the site is provided in **Table 2** and borehole logs are provided in **Appendix A**.

Table 2 – Generalised Stratigraphy

Sub-surface Conditions		General Thickness
Geological Unit	Description	
Fill	**Fill:** clay with some traces of demolition fragments and gravel (roadbase), light grey, poorly graded, loose, dry.	0.0 – 0.3 m BGL
Clay	**Clay:** orange-yellow-brown, non-plastic to low plasticity, firm to stiff, hard, moist.	0.2 – 1.0 m BGL

Note: NC: Base of this unit not confirmed.

7.2 Laboratory Analytical Results

Two (2) samples were collected from each borehole at 0.1 to 0.3 m and 0.5 to 1.0 m BGL and submitted to SGS laboratories for quantitative analysis. Laboratory results are summarised in **Table 3**. Laboratory test certificates are provided in **Appendix B**.

Table 3 – Summary of Soil Salinity ECe (dS/m) Results

Bore Hole ID	Depth (m bgl)	ECe (dS/m)	Bore Hole ID	Depth (m bgl)	ECe (dS/m)
BH1	0.1-0.3	0.03	BH8	0.1-0.3	0.06
	0.5-1.0	0.05		0.5-1.0	0.07
QC1 (Dup of BH1/0.1-0.3)	0.1-0.3	0.08	BH9	0.1-0.3	0.15
				0.5-1.0	0.17
BH2	0.1-0.3	0.03	BH10	0.1-0.3	0.14
	0.5-1.0	0.02		0.5-1.0	0.12
BH3	0.1-0.3	0.02	BH11	0.1-0.3	0.02
	0.5-1.0	0.03		0.5-1.0	0.03
BH4	0.1-0.3	0.11	BH12	0.1-0.3	0.04
	0.5-1.0	0.08		0.5-1.0	0.04
QC2 (Dup of BH4/0.1-0.3)	0.1-0.3	0.10	BH13	0.1-0.3	0.18
				0.5-1.0	0.20
BH5	0.1-0.3	0.09	BH14	0.1-0.3	0.22
	0.5-1.0	0.16			
BH6	0.1-0.3	0.05	BH15	0.1-0.3	0.38
	0.5-1.0	0.05		0.5-1.0	0.38
BH7	0.1-0.3	0.03			
	0.5-1.0	0.02			

The 31 samples analysed reported salinity concentrations below the criteria of 2 dS/m. Therefore, it is considered that soils from 0.1 m to 1.0 m BGL of the profile have mostly negligible salinity effects and are non-saline.

Based on DLWC 2002 criteria the salinity results correspond, by depth intervals, to:

- Depth 0.1 to 0.3 m (in topsoil or A-horizon), with ECe ranging from 0.02 dS/m to 0.38 dS/m, equating to 100 % non-saline; and
- Depth 0.5 to 1.0 m (in subsoil or B-horizon), with ECe ranging from 0.02 dS/m to 0.38 dS/m, equating to 100 % non-saline.

These results indicate that the soil profile in the site is all non-saline.

8. Conclusions and Recommendations

The results have indicated that the soils the profile tested are non-saline. Therefore, the results obtained through this salinity investigation indicate that site-specific salinity management and/or a soil salinity management plan (SSMP) are not required for the handling of these soils.

Yours sincerely,

[redacted]

Gonzalo Parra
Principal Environmental Scientist/Hydrogeologist
Mobile: 0415 726 951
Email: gparra@lgconsult.com.au

9. References

Geological Survey of New South Wales, 1991. *Geology of 1:100 000 Penrith Geological Series Sheet 9030 (Edition 1)*.

Spies, B. and Woodgate, P. 2004. Salinity Mapping Methods in the Australian Context. Technical Report. *Natural Resource Management Ministerial Council, January 2004*.

NSW Department of Land and Water Conservation, 2002. *Site Investigations for Urban Salinity*.

NSW Department of Infrastructure, Planning and Natural Resources, 2003. *Salinity Potential in Western Sydney 2002*.

Richards, L. A. (ed.) 1954. *Diagnosis and Improvement of Saline and Alkaline Soils*. USDA Handbook No. 60, Washington D.C.

Hazelton, P. A. and Murphy B. W. 1992. *A Guide to the Interpretation of Soil Test Results*. Department of Conservation and Land Management.

10. Limitations

This report has been prepared for the sole purpose of allowing Vaughan Constructions Pty Ltd to manage any potential risks associated with salinity at 22-23 Lambridge Place, Penrith, NSW, in accordance with generally accepted consulting practice. No other warranty or guarantee, expressed or implied is made as to the advice indicated in this report.

This report should not be used for any other purpose without our prior written consent. Accordingly, neither LG nor any member or employee of LG accepts responsibility or liability in any way whatsoever for the use of this report for any purpose other than that for which it has been prepared.

This report should not be released to any other party, in whole or in part, without the express written consent of LG. LG accepts no liability or responsibility whatsoever for or in respect of any use or reliance upon this report by any third party.

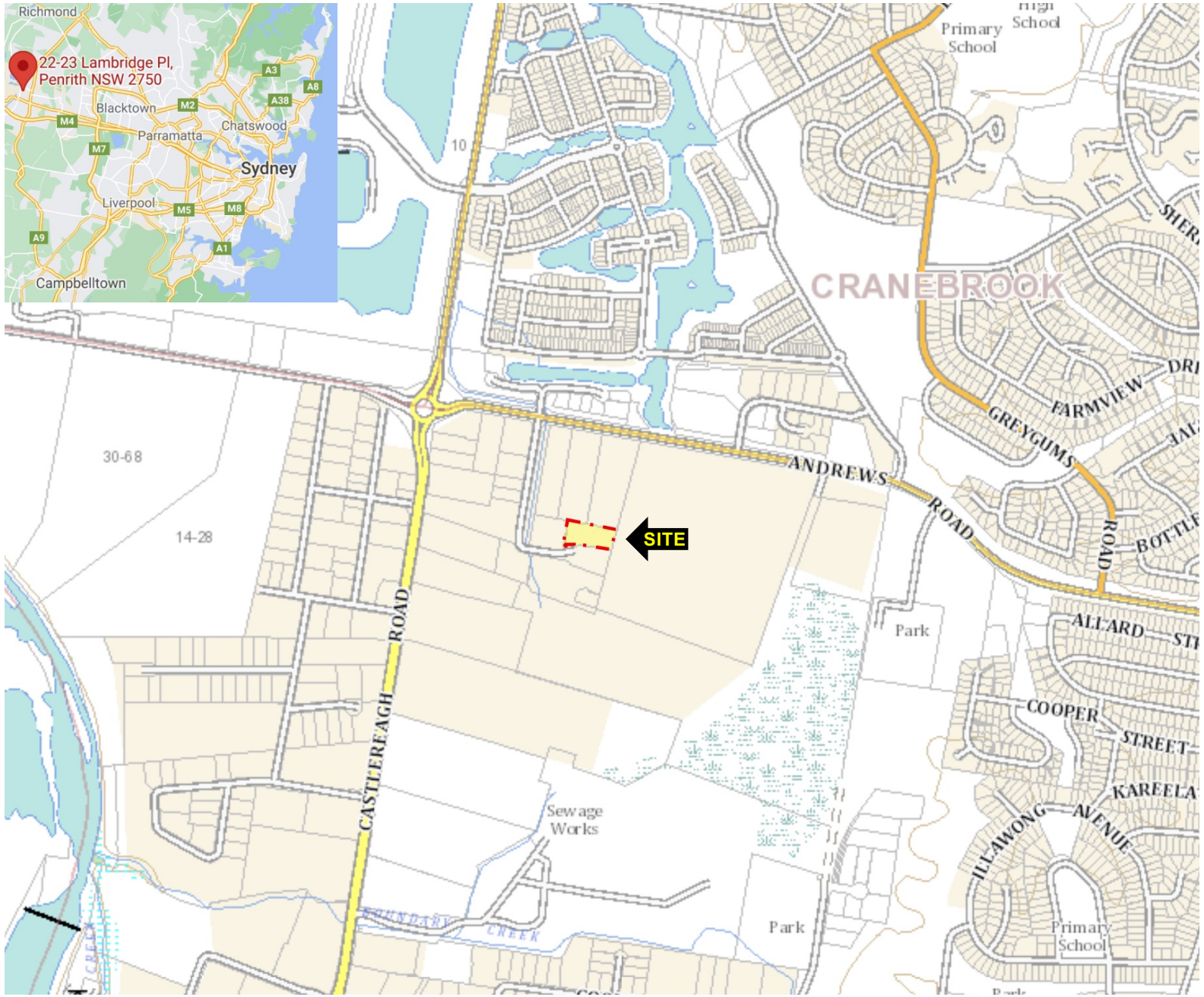
LG has relied upon and presumed accurate information provided by Vaughan Constructions Pty Ltd and/or any third party (or absence thereof) in making the assumptions made in this report. Nothing in this report should be taken to imply that LG has verified or audited any of the information supplied to us other than as expressly stated in this report. We have assumed this information to be both adequate and accurate for the purposes of this report.

Where findings, observations and conclusions are based solely upon information provided by Vaughan Constructions Pty Ltd and/or a third party and LG do not accept, to the maximum extent permitted by law, any liability for any losses, claims, costs, expenses, damages (whether in statute, in contract or tort for negligence or otherwise) suffered or incurred by

Vaughan Constructions Pty Ltd or any third party as a result of or in connection with LG's reliance on any such the information to the extent that such information is false, misleading or incomplete and LG give no warranty or guarantee, express or implied as to such findings, observations and conclusions.

If further information becomes available, or additional assumptions need to be made, LG reserves its right to amend any statements or opinions made in this report.

Figures



SCALE: DRAWN TO SCALE AS SHOWN

Not To Scale

NORTH

LEGEND:

Site Boundary

Images courtesy of Google Maps and SIX Maps

LG CONSULT

REV:	A
DATE:	27/08/2021
DRAWN:	GP
APPROVED:	GP
STATUS:	Final
DWG NO:	

CLIENT: **Vaughan Constructions**

PROJECT: **22-23 Lambridge Place, Penrith, NSW**

PROJECT NUMBER: LG2124.03

TITLE: **Site Location Plan**

FIGURE: **1** A4

SCALE: DRAWN TO SCALE AS SHOWN

Not To Scale

NORTH

LEGEND:

Site Boundary

Stockpile

Images courtesy SIX Maps

LG CONSULT

REV:	A
DATE:	27/08/2021
DRAWN:	GP
APPROVED:	GP
STATUS:	Final
DWG NO:	

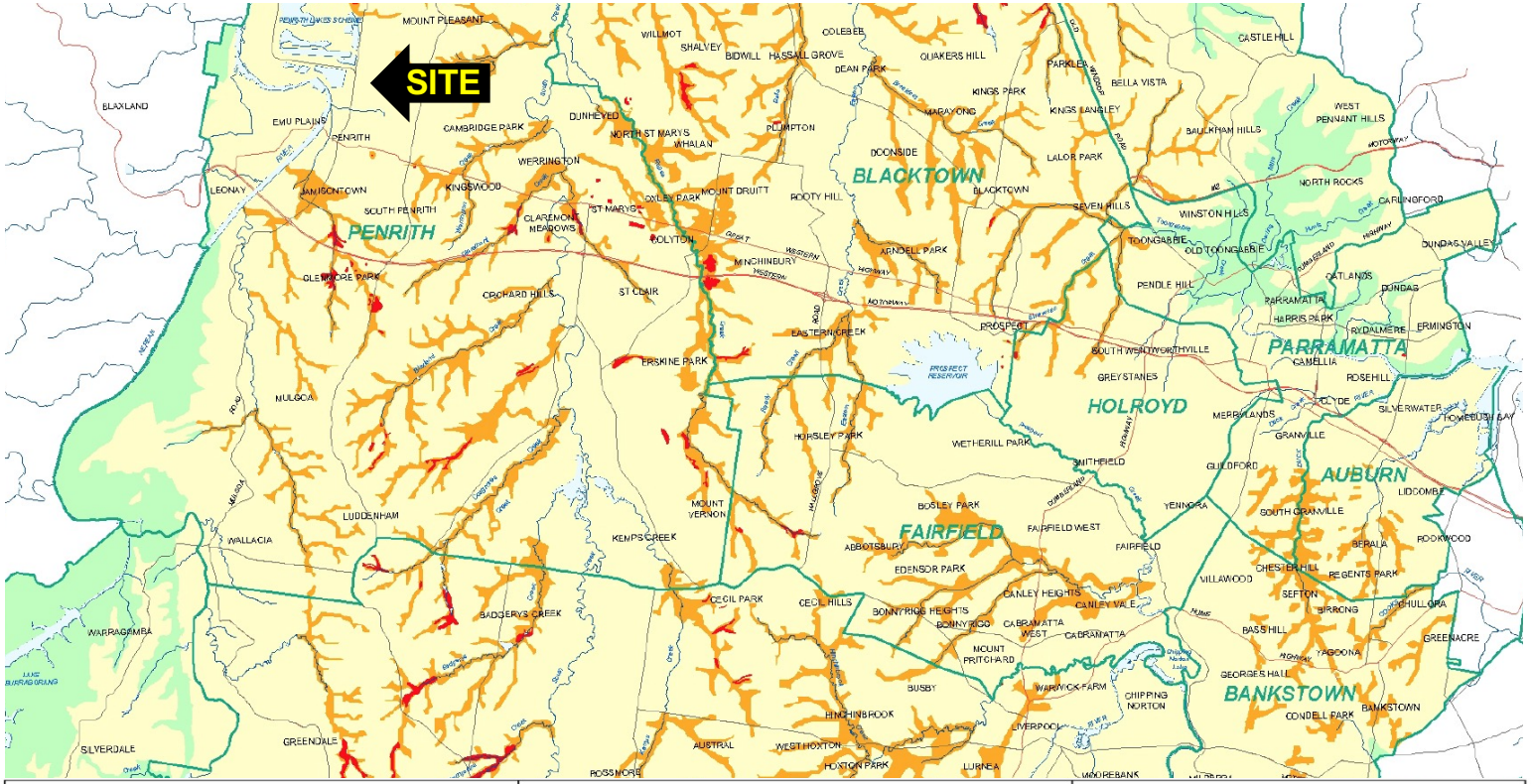
CLIENT: **Vaughan Constructions**

PROJECT: **22-23 Lambridge Place, Penrith, NSW**

PROJECT NUMBER: LG2124.03

TITLE: **Site Layout**

FIGURE: **2** A4



MAPPING CATEGORY	ASSOCIATED SOIL LANDSCAPES	LANDFORM - GEOLOGY
KNOWN SALINITY Areas where there is a known occurrence of saline soil, or where air photo interpretation and field observations have confirmed more than one of these: a - scalding b - salt efflorescence c - vegetation dieback d - salt tolerant plant species e - waterlogging A high relative wetness index occurs in these areas.	* Salinity outbreaks occur in Blacktown (bt), Luddenham (lu) and Richmond (ri) Soil Landscapes - common at breaks of slope, lower slopes and drainage lines. * Berkshire Park (bp) and Upper Castlereagh (up) Soil Landscapes have localised salinity due to the impermeable nature of the clay parent material. * South Creek (sc), Monkey Creek (mk), Freemans Reach (fr) and Theresa Park (tp) Soil Landscapes have common saline outbreaks due to high run-on and low local relief. * Soils in the above landscapes have high clay content in subsoils and are imperfectly to poorly drained.	* Break of slope, lower slope and drainage lines of Wianamatta Shales (Rwb,Rwa and Rwm). * Localised salinity also occurs at the geological boundary between Tertiary Gravels (Tl, Tr) and underlaying Wianamatta Shales (Rwb,Rwa/ Quaternary Alluvials (Qpd, Qpa, Qpl, Qal). * Localised salinity occurs in Quaternary Alluvium (Qal, Qpn. Qpd) which underlies many of the drainage systems and wetland margins.
HIGH SALINITY POTENTIAL Areas where soil, geology, topography and groundwater conditions predispose a site to salinity. These conditions are similar to areas of known salinity (see above). These areas are most common in lower slopes and drainage systems where water accumulation is high (ie. high relative wetness index).	* Soil Landscapes include Birrong (bi), Blacktown (bt) Berkshire Park (bp), Freemans Reach (fr), South Creek(sc0, Theresa Park (tp), Richmond (ri) and Luddenham (lu). Drainage systems and convergent slopes are areas of highest risk. * Soils in these landscapes have high clay content in the subsoils, low permeability and high run-on. * Soil profiles may display signs of high salt concentrations at depth (i.e. >0.5m).	* Salinity is most likely to occur in lower slopes, foot-slopes, floodplains and creek lines on Quaternary Sediments (Qal, Qpn, Qpd, Qpc, Qpp, Qha)/Wianamatta Shales (Rwb, Rwm, Rwa) where run-on is high, resulting in seasonally high water tables and soil saturation.
MODERATE SALINITY POTENTIAL Areas on Wianamatta Group Shales and Tertiary Alluvial Terraces. Scattered areas of scalding and indicator vegetation have been noted but no concentrations have been mapped. Saline areas may occur in this zone, which have not yet been identified or may occur if risk factors change adversely.	* Areas of Agnes Banks (ab), Berkshire Park (bp), Blacktown (bt), Luddenham (lu) and Lucas Heights (lh). * Steeper areas with moderate to high local relief and well drained subsoils such as Picton (pn), West Pennant Hills (vp) and Glenorie (gn) are at a lower risk of developing salinity. * Soils are moderate to well-drained due to their elevated position in the landscape.	* Hill-slopes and hill-crests on Wianamatta Shales (Rwb, Rwm, Rwa). * Raised abandoned alluvial terraces and drainage lines on Quaternary Alluvium (Qal, Qpn, Qpd, Qpc, Qpp) from Richmond to Camden and east to Rookwood. Localised areas of elevated, well-drained Tertiary Gravels (Ta, Tl, Tr).
VERY LOW SALINITY POTENTIAL Areas where salinity processes do not operate or are of minor significance. Soils are rapidly drained and underlaying strata (Hawkesbury/Narrabeen Sandstone) are highly permeable, resulting in continual flushing and removal of salts in the landscape. No salinity has been observed in these areas and is not expected to occur.	* Rapidly drained soil landscapes with shallow soils include Warragamba (wb) and Hawkesbury (ha). * Gymea (gy) and Faulconbridge (fb) Soil Landscapes consist of highly permeable sands with well-drained subsoils. * Soils are well to rapidly drained. * Soils have high sand content.	* Occurring on Hawkesbury and Narrabeen Sandstone (Rh, Rno). * Groundwater is relatively fresh in these areas due to the sandstone's elevated position in the landscape and highly permeable nature, resulting in continuous flushing of the system (removal of any accumulated salts).

SCALE: **DRAWN TO SCALE AS SHOWN**

Not To Scale

NORTH

LEGEND:

Image courtesy of NSW Department of Infrastructure, Planning and Natural Resources (DIPNR), 2003. Salinity Potential in Western Sydney 2002.

LG CONSULT

REV:	A
DATE:	27/08/2021
DRAWN:	GP
APPROVED:	GP
STATUS:	Final
DWG NO:	

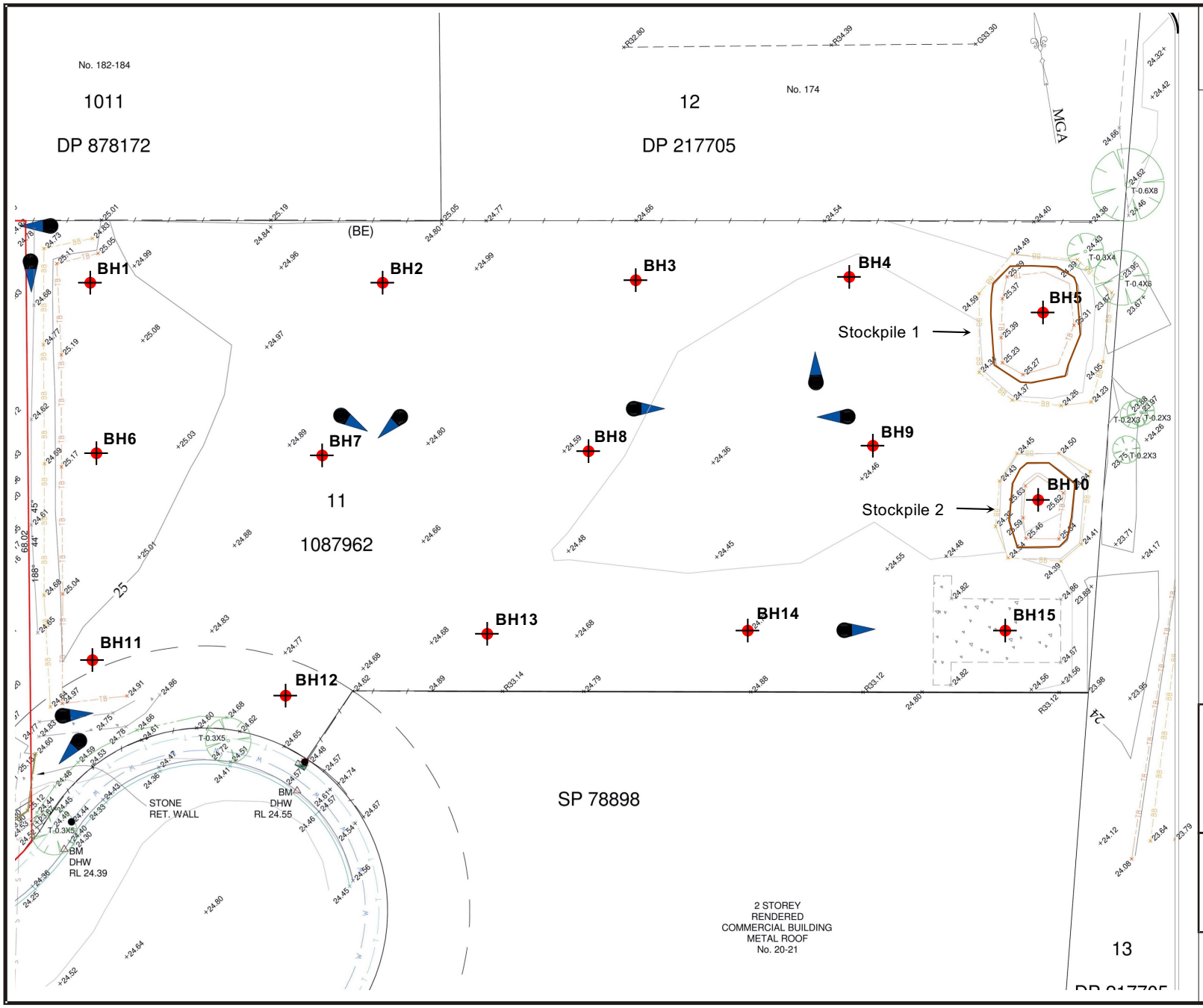
CLIENT: **Chandru International**

PROJECT: **22-23 Lambridge Place, Penrith, NSW**

PROJECT NUMBER: LG2124.03

TITLE: **Salinity Potential Risk Map**

FIGURE: **3** A4



SCALE: DRAWN TO SCALE AS SHOWN

Not To Scale

NORTH

LEGEND:

Site Boundary

Stockpile

BH1 Borehole Location

Image courtesy of CBH Survey

LG CONSULT

REV:	A
DATE:	27/08/2021
DRAWN:	GP
APPROVED:	GP
STATUS:	Final
DWG NO:	

CLIENT: **Vaughan Constructions**

PROJECT: **22-23 Lambridge Place, Penrith, NSW**

PROJECT NUMBER: LG2124.03

TITLE: **Soil Sampling Locations**

FIGURE: **4**

A4

Appendix A – Borehole Logs

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH1

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH1/0.1-0.3 BH1/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey-orange, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH2

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH2/0.1-0.3 BH2/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey-orange, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH3

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH3/0.1-0.3 BH3/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey-orange, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH4

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH4/0.1-0.3 BH4/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH5

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface/Grass		
Push tube	Not Encountered	BH5/0.1-0.3 BH5/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH6

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH6/0.1-0.3 BH6/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey-orange, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH7

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH7/0.1-0.3 BH7/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey-orange, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH8

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH8/0.1-0.3 BH8/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey-orange, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH9

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH9/0.1-0.3 BH9/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey-orange, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH10

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH10/0.1-0.3 BH10/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey-orange, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH11

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH11/0.1-0.3 BH11/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH12

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH12/0.1-0.3 BH12/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH13

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH13/0.1-0.3 BH13/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH14

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH14/0.1-0.3 BH14/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Land & Groundwater Consulting Pty Ltd
13/80-84 Illawarra Road
Marrickville NSW 2204
Tel: (02) 9560 9760
Fax: (02) 9572 6440

BOREHOLE BH15

Client: Vaughan Constructions
Project Name: Detailed Environmental Site Investigation Report
Location: 22-23 Lambridge Place, Penrith, NSW
Project Number: LG2124.01

Date Started: 11/08/2021
Date Completed: 11/08/2021
Logged By: Gonzalo Parra

Drilling Contractor: -
Equipment: Geoprobe
Hole Size: 120 mm Diamater
Hole Location: Refer to Figure 3

R.L. Surface:
Datum: -
Easting: -
Northing: -

Method	Groundwater	Sample ID	Depth (m)	Graphic Log	Unified Classification	Description	Moisture	Additional Observations
			0			Ground Surface		
Push tube	Not Encountered	BH15/0.1-0.3 BH15/0.5-1.0	1		CL	Fill, GRAVELLY, COARSE SAND, CLAY, light grey, poorly graded, loose, dry. 0.2 m - CLAY, grey, non-plastic, stiff, hard, moist.	D M	

End of hole at 1.0 m

Moisture
D: Dry H: Humid
M: Moist W: Wet

Remarks

Appendix B – Laboratory Reports

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Gonzalo Parra
Client	LAND AND GROUNDWATER CONSULTING PTY LTD
Address	131 B Riverview Road NSW 2204
Telephone	61 2 95598424
Facsimile	(Not specified)
Email	gparra@lgconsult.com.au
Project	**LG2124.02 22-23 Lambridge Pl Penrith NSW**
Order Number	**LG2124.02**
Samples	32

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	**SE222517 R0**
Date Received	11/8/2021
Date Reported	18/8/2021

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.

A portion of the sample supplied has been sub-sampled for asbestos analysis in soil according to SGS In-house procedures due to large volume. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Environmental Services recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

[redacted]

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Chemist

Dong LIANG
Metals/Inorganics Team Leader

[redacted]

Huong CRAWFORD
Production Manager

Ly Kim HA
Organic Section Head

Shane MCDERMOTT
Inorganic/Metals Chemist

VOC's in Soil [AN433] Tested: 12/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH1/0.5-1.0 SOIL - 11/8/2021 SE222517.002	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH2/0.5-1.0 SOIL - 11/8/2021 SE222517.004	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH6/0.5-1.0 SOIL - 11/8/2021 SE222517.012	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH7/0.5-1.0 SOIL - 11/8/2021 SE222517.014	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH8/0.5-1.0 SOIL - 11/8/2021 SE222517.016	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

VOC's in Soil [AN433] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH12/0.5-1.0 SOIL - 11/8/2021 SE222517.024	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	BH13/0.5-1.0 SOIL - 11/8/2021 SE222517.026	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH14/0.5-1.0 SOIL - 11/8/2021 SE222517.028	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	QC1 SOIL - 11/8/2021 SE222517.031	QC2 SOIL - 11/8/2021 SE222517.032
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 12/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH1/0.5-1.0 SOIL - 11/8/2021 SE222517.002	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH2/0.5-1.0 SOIL - 11/8/2021 SE222517.004	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005
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	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH6/0.5-1.0 SOIL - 11/8/2021 SE222517.012	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH7/0.5-1.0 SOIL - 11/8/2021 SE222517.014	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015
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	BH8/0.5-1.0 SOIL - 11/8/2021 SE222517.016	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
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	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH12/0.5-1.0 SOIL - 11/8/2021 SE222517.024	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025
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	BH13/0.5-1.0 SOIL - 11/8/2021 SE222517.026	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH14/0.5-1.0 SOIL - 11/8/2021 SE222517.028	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	QC1 SOIL - 11/8/2021 SE222517.031	QC2 SOIL - 11/8/2021 SE222517.032
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 12/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH1/0.5-1.0 SOIL - 11/8/2021 SE222517.002	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH2/0.5-1.0 SOIL - 11/8/2021 SE222517.004	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH6/0.5-1.0 SOIL - 11/8/2021 SE222517.012	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH7/0.5-1.0 SOIL - 11/8/2021 SE222517.014	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	BH8/0.5-1.0 SOIL - 11/8/2021 SE222517.016	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH12/0.5-1.0 SOIL - 11/8/2021 SE222517.024	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH13/0.5-1.0 SOIL - 11/8/2021 SE222517.026	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH14/0.5-1.0 SOIL - 11/8/2021 SE222517.028	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	QC1 SOIL - 11/8/2021 SE222517.031	QC2 SOIL - 11/8/2021 SE222517.032
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 12/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.3**
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.1**
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.8**
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.7**
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.3**
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	**0.3**
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	**0.4**
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	**0.4**
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	**3.3**
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	**3.3**

PARAMETER	UOM	LOR	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.8**	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	**0.7**	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.2**	<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	**0.2**	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	**0.3**	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	**0.4**	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	**0.4**	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	**3.4**	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	**3.4**	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	BH14/0.5-1.0 SOIL - 11/8/2021 SE222517.028	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030	QC1 SOIL - 11/8/2021 SE222517.031	QC2 SOIL - 11/8/2021 SE222517.032
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.7**
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.3**
Fluoranthene	mg/kg	0.1	<0.1	<0.1	**0.2**	<0.1	**2.1**
Pyrene	mg/kg	0.1	<0.1	<0.1	**0.2**	<0.1	**1.9**
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.7**
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.7**
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.8**
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.5**
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.8**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.5**
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	**0.6**
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	**1.0**
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	**1.1**
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	**1.1**
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	**9.7**
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	**9.7**

OC Pesticides in Soil [AN420] Tested: 12/8/2021

PARAMETER	UOM	LOR	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	QC2 SOIL - 11/8/2021 SE222517.032
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 12/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH1/0.5-1.0 SOIL - 11/8/2021 SE222517.002	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH2/0.5-1.0 SOIL - 11/8/2021 SE222517.004	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005
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

PARAMETER	UOM	LOR	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010
Dichlorvos	mg/kg	0.5	-	<0.5	-	<0.5	-
Dimethoate	mg/kg	0.5	-	<0.5	-	<0.5	-
Diazinon (Dimpylate)	mg/kg	0.5	-	<0.5	-	<0.5	-
Fenitrothion	mg/kg	0.2	-	<0.2	-	<0.2	-
Malathion	mg/kg	0.2	-	<0.2	-	<0.2	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	<0.2	-	<0.2	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	<0.2	-	<0.2	-
Bromophos Ethyl	mg/kg	0.2	-	<0.2	-	<0.2	-
Methidathion	mg/kg	0.5	-	<0.5	-	<0.5	-
Ethion	mg/kg	0.2	-	<0.2	-	<0.2	-
Azinphos-methyl (Guthion)	mg/kg	0.2	-	<0.2	-	<0.2	-
Total OP Pesticides*	mg/kg	1.7	-	<1.7	-	<1.7	-

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH6/0.5-1.0 SOIL - 11/8/2021 SE222517.012	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH7/0.5-1.0 SOIL - 11/8/2021 SE222517.014	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015
Dichlorvos	mg/kg	0.5	-	-	-	-	-
Dimethoate	mg/kg	0.5	-	-	-	-	-
Diazinon (Dimpylate)	mg/kg	0.5	-	-	-	-	-
Fenitrothion	mg/kg	0.2	-	-	-	-	-
Malathion	mg/kg	0.2	-	-	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	-	-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	-	-	-	-
Bromophos Ethyl	mg/kg	0.2	-	-	-	-	-
Methidathion	mg/kg	0.5	-	-	-	-	-
Ethion	mg/kg	0.2	-	-	-	-	-
Azinphos-methyl (Guthion)	mg/kg	0.2	-	-	-	-	-
Total OP Pesticides*	mg/kg	1.7	-	-	-	-	-

OP Pesticides in Soil [AN420] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	BH8/0.5-1.0 SOIL - 11/8/2021 SE222517.016	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
Dichlorvos	mg/kg	0.5	-	<0.5	-	<0.5	-
Dimethoate	mg/kg	0.5	-	<0.5	-	<0.5	-
Diazinon (Dimpylate)	mg/kg	0.5	-	<0.5	-	<0.5	-
Fenitrothion	mg/kg	0.2	-	<0.2	-	<0.2	-
Malathion	mg/kg	0.2	-	<0.2	-	<0.2	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	<0.2	-	<0.2	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	<0.2	-	<0.2	-
Bromophos Ethyl	mg/kg	0.2	-	<0.2	-	<0.2	-
Methidathion	mg/kg	0.5	-	<0.5	-	<0.5	-
Ethion	mg/kg	0.2	-	<0.2	-	<0.2	-
Azinphos-methyl (Guthion)	mg/kg	0.2	-	<0.2	-	<0.2	-
Total OP Pesticides*	mg/kg	1.7	-	<1.7	-	<1.7	-

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH12/0.5-1.0 SOIL - 11/8/2021 SE222517.024	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025
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	-	-	-	-

PARAMETER	UOM	LOR	BH13/0.5-1.0 SOIL - 11/8/2021 SE222517.026	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH14/0.5-1.0 SOIL - 11/8/2021 SE222517.028	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030
Dichlorvos	mg/kg	0.5	-	<0.5	-	<0.5	-
Dimethoate	mg/kg	0.5	-	<0.5	-	<0.5	-
Diazinon (Dimpylate)	mg/kg	0.5	-	<0.5	-	<0.5	-
Fenitrothion	mg/kg	0.2	-	<0.2	-	<0.2	-
Malathion	mg/kg	0.2	-	<0.2	-	<0.2	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	<0.2	-	<0.2	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	<0.2	-	<0.2	-
Bromophos Ethyl	mg/kg	0.2	-	<0.2	-	<0.2	-
Methidathion	mg/kg	0.5	-	<0.5	-	<0.5	-
Ethion	mg/kg	0.2	-	<0.2	-	<0.2	-
Azinphos-methyl (Guthion)	mg/kg	0.2	-	<0.2	-	<0.2	-
Total OP Pesticides*	mg/kg	1.7	-	<1.7	-	<1.7	-

OP Pesticides in Soil [AN420] Tested: 12/8/2021 (continued)

PARAMETER	UOM	LOR	QC1 SOIL - 11/8/2021 SE222517.031	QC2 SOIL - 11/8/2021 SE222517.032
Dichlorvos	mg/kg	0.5	-	<0.5
Dimethoate	mg/kg	0.5	-	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	-	<0.5
Fenitrothion	mg/kg	0.2	-	<0.2
Malathion	mg/kg	0.2	-	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	-	<0.2
Bromophos Ethyl	mg/kg	0.2	-	<0.2
Methidathion	mg/kg	0.5	-	<0.5
Ethion	mg/kg	0.2	-	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	-	<0.2
Total OP Pesticides*	mg/kg	1.7	-	<1.7

PCBs in Soil [AN420] Tested: 12/8/2021

PARAMETER	UOM	LOR	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	QC2 SOIL - 11/8/2021 SE222517.032
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1

Conductivity and TDS by Calculation - Soil [AN106] Tested: 18/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH1/0.5-1.0 SOIL - 11/8/2021 SE222517.002	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH2/0.5-1.0 SOIL - 11/8/2021 SE222517.004	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005
Conductivity of Extract (1:5 as received)	µS/cm	1	33	54	26	23	24
Salinity (by calculation)*	mg/kg	5	110	190	86	78	88

PARAMETER	UOM	LOR	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010
Conductivity of Extract (1:5 as received)	µS/cm	1	27	110	77	92	160
Salinity (by calculation)*	mg/kg	5	98	410	310	320	590

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH6/0.5-1.0 SOIL - 11/8/2021 SE222517.012	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH7/0.5-1.0 SOIL - 11/8/2021 SE222517.014	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015
Conductivity of Extract (1:5 as received)	µS/cm	1	50	51	29	18	59
Salinity (by calculation)*	mg/kg	5	180	180	100	62	230

PARAMETER	UOM	LOR	BH8/0.5-1.0 SOIL - 11/8/2021 SE222517.016	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
Conductivity of Extract (1:5 as received)	µS/cm	1	65	150	170	140	120
Salinity (by calculation)*	mg/kg	5	240	590	670	550	450

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH12/0.5-1.0 SOIL - 11/8/2021 SE222517.024	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025
Conductivity of Extract (1:5 as received)	µS/cm	1	21	29	41	42	180
Salinity (by calculation)*	mg/kg	5	76	110	140	140	660

PARAMETER	UOM	LOR	BH13/0.5-1.0 SOIL - 11/8/2021 SE222517.026	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030	QC1 SOIL - 11/8/2021 SE222517.031
Conductivity of Extract (1:5 as received)	µS/cm	1	200	220	380	380	76
Salinity (by calculation)*	mg/kg	5	760	840	1400	1400	270

PARAMETER	UOM	LOR	QC2 SOIL - 11/8/2021 SE222517.032
Conductivity of Extract (1:5 as received)	µS/cm	1	100
Salinity (by calculation)*	mg/kg	5	390

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 17/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH1/0.5-1.0 SOIL - 11/8/2021 SE222517.002	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH2/0.5-1.0 SOIL - 11/8/2021 SE222517.004	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005
Arsenic, As	mg/kg	1	2	2	1	2	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	7.1	7.6	5.9	6.6	8.5
Copper, Cu	mg/kg	0.5	2.9	3.1	2.4	2.7	7.6
Lead, Pb	mg/kg	1	6	5	4	4	8
Nickel, Ni	mg/kg	0.5	2.8	2.9	2.7	2.9	6.7
Zinc, Zn	mg/kg	2	9.3	10	9.3	10	18

PARAMETER	UOM	LOR	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010
Arsenic, As	mg/kg	1	2	5	4	1	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	9.0	18	13	9.2	18
Copper, Cu	mg/kg	0.5	9.7	15	13	7.6	9.9
Lead, Pb	mg/kg	1	7	16	14	6	9
Nickel, Ni	mg/kg	0.5	20	15	9.5	8.6	17
Zinc, Zn	mg/kg	2	19	36	28	17	29

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH6/0.5-1.0 SOIL - 11/8/2021 SE222517.012	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH7/0.5-1.0 SOIL - 11/8/2021 SE222517.014	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015
Arsenic, As	mg/kg	1	2	2	2	2	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.2	11	7.6	7.2	13
Copper, Cu	mg/kg	0.5	4.8	11	3.4	3.1	15
Lead, Pb	mg/kg	1	6	7	6	5	14
Nickel, Ni	mg/kg	0.5	5.3	13	3.7	3.3	12
Zinc, Zn	mg/kg	2	13	28	12	11	38

PARAMETER	UOM	LOR	BH8/0.5-1.0 SOIL - 11/8/2021 SE222517.016	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
Arsenic, As	mg/kg	1	4	4	6	2	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	15	15	38	31
Copper, Cu	mg/kg	0.5	11	21	19	64	46
Lead, Pb	mg/kg	1	9	15	19	8	10
Nickel, Ni	mg/kg	0.5	7.2	35	28	110	81
Zinc, Zn	mg/kg	2	23	55	41	65	56

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 17/8/2021

(continued)

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH12/0.5-1.0 SOIL - 11/8/2021 SE222517.024	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025
Arsenic, As	mg/kg	1	2	2	2	2	1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	7.2	7.3	8.2	7.9	15
Copper, Cu	mg/kg	0.5	2.9	3.6	5.6	5.5	61
Lead, Pb	mg/kg	1	5	6	7	7	3
Nickel, Ni	mg/kg	0.5	3.0	3.4	4.6	4.7	130
Zinc, Zn	mg/kg	2	9.8	11	13	13	50

PARAMETER	UOM	LOR	BH13/0.5-1.0 SOIL - 11/8/2021 SE222517.026	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH14/0.5-1.0 SOIL - 11/8/2021 SE222517.028	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030
Arsenic, As	mg/kg	1	2	5	5	2	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	15	24	20	27	21
Copper, Cu	mg/kg	0.5	40	22	18	56	18
Lead, Pb	mg/kg	1	13	16	17	5	17
Nickel, Ni	mg/kg	0.5	54	35	23	140	23
Zinc, Zn	mg/kg	2	64	43	38	57	39

PARAMETER	UOM	LOR	QC1 SOIL - 11/8/2021 SE222517.031	QC2 SOIL - 11/8/2021 SE222517.032
Arsenic, As	mg/kg	1	2	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	24	36
Copper, Cu	mg/kg	0.5	31	17
Lead, Pb	mg/kg	1	12	13
Nickel, Ni	mg/kg	0.5	27	40
Zinc, Zn	mg/kg	2	48	40

Mercury in Soil [AN312] Tested: 17/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH1/0.5-1.0 SOIL - 11/8/2021 SE222517.002	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH2/0.5-1.0 SOIL - 11/8/2021 SE222517.004	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH6/0.5-1.0 SOIL - 11/8/2021 SE222517.012	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH7/0.5-1.0 SOIL - 11/8/2021 SE222517.014	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH8/0.5-1.0 SOIL - 11/8/2021 SE222517.016	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH12/0.5-1.0 SOIL - 11/8/2021 SE222517.024	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH13/0.5-1.0 SOIL - 11/8/2021 SE222517.026	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH14/0.5-1.0 SOIL - 11/8/2021 SE222517.028	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	QC1 SOIL - 11/8/2021 SE222517.031	QC2 SOIL - 11/8/2021 SE222517.032
Mercury	mg/kg	0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 17/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH1/0.5-1.0 SOIL - 11/8/2021 SE222517.002	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH2/0.5-1.0 SOIL - 11/8/2021 SE222517.004	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005
% Moisture	%w/w	1	7.5	9.3	3.8	3.7	11.6

PARAMETER	UOM	LOR	BH3/0.5-1.0 SOIL - 11/8/2021 SE222517.006	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH4/0.5-1.0 SOIL - 11/8/2021 SE222517.008	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009	BH5/0.5-1.0 SOIL - 11/8/2021 SE222517.010
% Moisture	%w/w	1	9.7	13.2	19.8	8.1	11.2

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH6/0.5-1.0 SOIL - 11/8/2021 SE222517.012	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH7/0.5-1.0 SOIL - 11/8/2021 SE222517.014	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015
% Moisture	%w/w	1	8.1	9.4	5.8	5.4	15.7

PARAMETER	UOM	LOR	BH8/0.5-1.0 SOIL - 11/8/2021 SE222517.016	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH9/0.5-1.0 SOIL - 11/8/2021 SE222517.018	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019	BH10/0.5-1.0 SOIL - 11/8/2021 SE222517.020
% Moisture	%w/w	1	11.7	17.2	17.5	14.5	14.7

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH11/0.5-1.0 SOIL - 11/8/2021 SE222517.022	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH12/0.5-1.0 SOIL - 11/8/2021 SE222517.024	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025
% Moisture	%w/w	1	9.8	12.1	5.7	5.7	12.9

PARAMETER	UOM	LOR	BH13/0.5-1.0 SOIL - 11/8/2021 SE222517.026	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH14/0.5-1.0 SOIL - 11/8/2021 SE222517.028	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029	BH15/0.5-1.0 SOIL - 11/8/2021 SE222517.030
% Moisture	%w/w	1	14.6	13.3	15.0	12.8	13.9

PARAMETER	UOM	LOR	QC1 SOIL - 11/8/2021 SE222517.031	QC2 SOIL - 11/8/2021 SE222517.032
% Moisture	%w/w	1	9.7	14.5

Fibre Identification in soil [AN602] Tested: 17/8/2021

PARAMETER	UOM	LOR	BH1/0.1-0.3 SOIL - 11/8/2021 SE222517.001	BH2/0.1-0.3 SOIL - 11/8/2021 SE222517.003	BH3/0.1-0.3 SOIL - 11/8/2021 SE222517.005	BH4/0.1-0.3 SOIL - 11/8/2021 SE222517.007	BH5/0.1-0.3 SOIL - 11/8/2021 SE222517.009
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	BH6/0.1-0.3 SOIL - 11/8/2021 SE222517.011	BH7/0.1-0.3 SOIL - 11/8/2021 SE222517.013	BH8/0.1-0.3 SOIL - 11/8/2021 SE222517.015	BH9/0.1-0.3 SOIL - 11/8/2021 SE222517.017	BH10/0.1-0.3 SOIL - 11/8/2021 SE222517.019
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	BH11/0.1-0.3 SOIL - 11/8/2021 SE222517.021	BH12/0.1-0.3 SOIL - 11/8/2021 SE222517.023	BH13/0.1-0.3 SOIL - 11/8/2021 SE222517.025	BH14/0.1-0.3 SOIL - 11/8/2021 SE222517.027	BH15/0.1-0.3 SOIL - 11/8/2021 SE222517.029
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract of as received sample with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Salinity can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. Reference APHA 2510 B.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

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

FOOTNOTES

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

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

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

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

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

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

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

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

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

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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SAMPLE RECEIPT ADVICE

SE222517

CLIENT DETAILS

Contact	Gonzalo Parra
Client	LAND AND GROUNDWATER CONSULTING PTY LTD
Address	131 B Riverview Road NSW 2204
Telephone	61 2 95598424
Facsimile	(Not specified)
Email	gparra@lgconsult.com.au
Project	**LG2124.02 22-23 Lambridge Pl Penrith NSW**
Order Number	**LG2124.02**
Samples	32

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	Wed 11/8/2021
Report Due	Wed 18/8/2021
SGS Reference	**SE222517**

SUBMISSION DETAILS

This is to confirm that 32 samples were received on Wednesday 11/8/2021. Results are expected to be ready by COB Wednesday 18/8/2021. Please quote SGS reference SE222517 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	None
Samples received in correct containers	Yes	Sample counts by matrix	32 Soil
Date documentation received	11/8/2021	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	22°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

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

COMMENTS

SAMPLE RECEIPT ADVICE

SE222517

CLIENT DETAILS

Client LAND AND GROUNDWATER CONSULTING PTY LTD

Project LG2124.02 22-23 Lambridge Pl Penrith NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	BH1/0.1-0.3	2	-	-	26	-	10	11	7
002	BH1/0.5-1.0	2	-	-	-	-	10	11	7
003	BH2/0.1-0.3	2	-	-	26	-	10	11	7
004	BH2/0.5-1.0	2	-	-	-	-	10	11	7
005	BH3/0.1-0.3	2	29	14	26	11	10	11	7
006	BH3/0.5-1.0	2	-	-	26	-	10	11	7
007	BH4/0.1-0.3	2	29	14	26	11	10	11	7
008	BH4/0.5-1.0	2	-	-	26	-	10	11	7
009	BH5/0.1-0.3	2	29	14	26	11	10	11	7
010	BH5/0.5-1.0	2	-	-	26	-	10	11	7
011	BH6/0.1-0.3	2	-	-	26	-	10	11	7
012	BH6/0.5-1.0	2	-	-	-	-	10	11	7
013	BH7/0.1-0.3	2	-	-	26	-	10	11	7
014	BH7/0.5-1.0	2	-	-	-	-	10	11	7
015	BH8/0.1-0.3	2	-	-	26	-	10	11	7
016	BH8/0.5-1.0	2	-	-	-	-	10	11	7
017	BH9/0.1-0.3	2	29	14	26	11	10	11	7
018	BH9/0.5-1.0	2	-	-	26	-	10	11	7
019	BH10/0.1-0.3	2	29	14	26	11	10	11	7
020	BH10/0.5-1.0	2	-	-	26	-	10	11	7
021	BH11/0.1-0.3	2	29	14	26	11	10	11	7
022	BH11/0.5-1.0	2	-	-	26	-	10	11	7
023	BH12/0.1-0.3	2	-	-	26	-	10	11	7
024	BH12/0.5-1.0	2	-	-	-	-	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

SE222517

CLIENT DETAILS

Client LAND AND GROUNDWATER CONSULTING PTY LTD

Project LG2124.02 22-23 Lambridge Pl Penrith NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Soil	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
025	BH13/0.1-0.3	2	-	-	26	-	10	11	7
026	BH13/0.5-1.0	2	-	-	-	-	10	11	7
027	BH14/0.1-0.3	2	29	14	26	11	10	11	7
028	BH14/0.5-1.0	-	-	-	26	-	10	11	7
029	BH15/0.1-0.3	2	29	14	26	11	10	11	7
030	BH15/0.5-1.0	2	-	-	26	-	10	11	7
031	QC1	2	-	-	26	-	10	11	7
032	QC2	2	29	14	26	11	10	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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SAMPLE RECEIPT ADVICE

SE222517

CLIENT DETAILS

Client LAND AND GROUNDWATER CONSULTING PTY LTD

Project LG2124.02 22-23 Lambridge Pl Penrith NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
001	BH1/0.1-0.3	2	1	1	7
002	BH1/0.5-1.0	-	1	1	7
003	BH2/0.1-0.3	2	1	1	7
004	BH2/0.5-1.0	-	1	1	7
005	BH3/0.1-0.3	2	1	1	7
006	BH3/0.5-1.0	-	1	1	7
007	BH4/0.1-0.3	2	1	1	7
008	BH4/0.5-1.0	-	1	1	7
009	BH5/0.1-0.3	2	1	1	7
010	BH5/0.5-1.0	-	1	1	7
011	BH6/0.1-0.3	2	1	1	7
012	BH6/0.5-1.0	-	1	1	7
013	BH7/0.1-0.3	2	1	1	7
014	BH7/0.5-1.0	-	1	1	7
015	BH8/0.1-0.3	2	1	1	7
016	BH8/0.5-1.0	-	1	1	7
017	BH9/0.1-0.3	2	1	1	7
018	BH9/0.5-1.0	-	1	1	7
019	BH10/0.1-0.3	2	1	1	7
020	BH10/0.5-1.0	-	1	1	7
021	BH11/0.1-0.3	2	1	1	7
022	BH11/0.5-1.0	-	1	1	7
023	BH12/0.1-0.3	2	1	1	7
024	BH12/0.5-1.0	-	1	1	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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SAMPLE RECEIPT ADVICE

SE222517

CLIENT DETAILS

Client LAND AND GROUNDWATER CONSULTING PTY LTD

Project LG2124.02 22-23 Lambridge Pl Penrith NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Total Recoverable Elements in Soil/Waste
025	BH13/0.1-0.3	2	1	1	7
026	BH13/0.5-1.0	-	1	1	7
027	BH14/0.1-0.3	2	1	1	7
028	BH14/0.5-1.0	-	1	1	7
029	BH15/0.1-0.3	2	1	1	7
030	BH15/0.5-1.0	-	1	1	7
031	QC1	-	1	1	7
032	QC2	-	1	1	7

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

LG CONSULT

Chain of Custody Record

Project No:	LG2124.02	Lab:	SGS
Project/Site:	22-23 Lambridge Place, Penrith, NSW	Lab Quote No:	LGC141106060
Sampled By:	Gonzalo Parra	Lab Batch No:	
Phone:	0415 726 951	Date Results Required:	Standadrd TAT
Page 1 of 2		Sample Disposal After:	
Number of Eskies: 2			

LAB ID	SAMPLE ID	DATE	MATRIX	CONTAINER TYPE & PRESERVATIVE: Soil 0.1-0.2 L Glass jar, unpreserved	Soil - Plastic bag	Water 0.1-0.2 L Plastic, Filtered, HNO3	0.5-1.0 L Amber glass, unpreserve	40-50ml Glass, unpreserved	0.25-1 L Plastic, unpreserved	0.2-1.0L Plastic, sterile	ANALYSIS REQUIRED: CL 17: TRH C6-C40/BTEXN/PAH/OC/OP/PCB/8 Metals	CL 10: TRH C6-C40/BTEXN/PAH/8	CL 7: TRH C6-C40/BTEXN/8 Metals	Asbestos	Salinity (from EC)	HOLD
1	BH1/0.1-0.3	11/8/21	Soil	1	1							X		X	X	
2	BH1/0.5-1.0	11/8/21	Soil	1									X		X	
3	BH2/0.1-0.3	11/8/21	Soil	1	1							X		X	X	
4	BH2/0.5-1.0	11/8/21	Soil	1									X		X	
5	BH3/0.1-0.3	11/8/21	Soil	1	1						X			X	X	
6	BH3/0.5-1.0	11/8/21	Soil	1								X			X	
7	BH4/0.1-0.3	11/8/21	Soil	1	1						X			X	X	
8	BH4/0.5-1.0	11/8/21	Soil	1								X			X	
9	BH5/0.1-0.3	11/8/21	Soil	1	1						X			X	X	
10	BH5/0.5-1.0	11/8/21	Soil	1								X			X	
11	BH6/0.1-0.3	11/8/21	Soil	1	1							X		X	X	
12	BH6/0.5-1.0	11/8/21	Soil	1									X		X	
13	BH7/0.1-0.3	11/8/21	Soil	1	1							X		X	X	
14	BH7/0.5-1.0	11/8/21	Soil	1									X		X	
15	BH8/0.1-0.3	11/8/21	Soil	1	1							X		X	X	
16	BH8/0.5-1.0	11/8/21	Soil	1									X		X	
17	BH9/0.1-0.3	11/8/21	Soil	1	1						X			X	X	
18	BH9/0.5-1.0	11/8/21	Soil	1								X			X	
19	BH10/0.1-0.3	11/8/21	Soil	1	1						X			X	X	
20	BH10/0.5-1.0	11/8/21	Soil	1								X			X	
21	BH11/0.1-0.3	11/8/21	Soil	1	1						X			X	X	
22	BH11/0.5-1.0	11/8/21	Soil	1								X			X	
23	BH12/0.1-0.3	11/8/21	Soil	1	1							X		X	X	
24	BH12/0.5-1.0	11/8/21	Soil	1									X		X	
25	BH13/0.1-0.3	11/8/21	Soil	1	1							X		X	X	
26	BH13/0.5-1.0	11/8/21	Soil	1									X		X	
27	BH14/0.1-0.3	11/8/21	Soil	1	1						X			X	X	
28	BH14/0.5-1.0	11/8/21	Soil	1								X				
			TOTALS	28	14											

Relinquished By:			Received By:			Custody Seals Intact: Y / N
Gonzalo Parra		11/8/21	George Zhi	[redacted]	11/8/21	Samples Received Chilled: Y / N
NAME	SIGNATURE	DATE	NAME	SIGNATURE	DATE	Method of Shipment

NOTES: 11/8/21 @ 2:30pm

SGS EHS Sydney COC

SE222517

Land & Groundwater Consulting Pty Ltd ABN 65 162 117 928
13/80-84 Illawarra Road
Marrickville NSW 2204

web www.lgconsult.com.au
email
email gparra@lgconsult.com.au

COC_LG2124.02_11-08-21.xlsx

LG CONSULT

Chain of Custody Record

Project No:	LG2124.02	Lab:	SGS
Project/Site:	22-23 Lambridge Place, Penrith, NSW	Lab Quote No:	LGC141106060
Sampled By:	Gonzalo Parra	Lab Batch No:	
Phone:	0415 726 951	Date Results Required:	Standadrd TAT
Page 2 of 2		Sample Disposal After:	
Number of Eskies: 2			

LAB ID	SAMPLE ID	DATE	MATRIX	Soil: 0.1-0.2 L Glass jar, unpreserved	Soil: - Plastic bag	Water: 0.1-0.2 L Plastic, Filtered, HNO3	Water: 0.5-1.0 L Amber glass, unpreserved	Water: 40-50ml Glass, unpreserved	Water: 0.25-1 L Plastic, unpreserved	Water: 0.2-1.0L Plastic, sterile			CL 17: TRH C6-C40/BTEXN/PAH/OC/OP/PCB/8 Metals	CL 10: TRH C6-C40/BTEXN/PAH/8	CL 7: TRH C6-C40/BTEXN/8 Metals	Asbestos	Salinity (from EC)				HOLD
29	BH15/0.1-0.3	11/8/21	Soil	1	1								X			X	X				
30	BH15/0.5-1.0	11/8/21	Soil	1	–									X			X				
31	QC1	11/8/21	Soil	1	–									X		–	X				
32	QC2	11/8/21	Soil	1									X				X				
			TOTALS	4	2																

Relinquished By: Gonzalo Parra	SIGNATURE	11/8/21 DATE	Received By: George Zhi NAME	[redacted] SIGNATURE	1/8/21@ 2:30pm DATE	Custody Seals Intact / Samples Received Chilled / Method of Shipment	Y N / Y (N)

NOTES:

Land & Groundwater Consulting Pty Ltd ABN 65 162 117 928
13/80-84 Illawarra Road
Marrickville NSW 2204

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