

NORTH STRATHFIELD ONE PTY LTD



Acid Sulfate Soils Assessment



25 George Street, North Strathfield NSW

Document Control

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0	Original	18 November 2019	

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1. Introduction

1.1 Background

EI Australia (EI) was engaged by North Strathfield One Pty Ltd to conduct an Acid Sulfate Soils (ASS) Assessment to evaluate the presence of acid sulfate soils at 25 George Street, North Strathfield NSW.

This site is located approximately 11.km west of the Sydney Central Business District (CBD) and is located within the Local Government Area of City of Canada Bay Council (**Figure A.1**). It is comprised of CP/ - /SP22302, covering a total area of 7,750 m², as depicted in **Figure A.2**. It is currently occupied by an industrial business park housing a number of operation businesses, including, but not limited to, *Eurella Packaging & Assembly, Car Repair & Deco and Strathfield Automotive*.

1.2 Proposed Development

Based on development plans (Fuse Architects, ref; 1711, dated 13 April 2018) provided by the Client, the site has been designated for the construction of three (3) multi-level residential buildings, with communal open space overlying two levels of basement car parking. To reach finished levels it is anticipated excavations will extend to 6m BGL.

1.3 Project Objectives

The objective of this assessment is to evaluate the potential presence of acid sulfate soils (ASS) at the site and provide management advice during ground disturbance activities (where required).

1.4 Scope of Works

In order to achieve the above objectives, while generally complying with the requirements of Stone et al (1998), the scope of works was as follows:

- A detailed site walkover inspection;
- Review of available mapping for the investigation area;
- Intrusive site investigation, including soil profile descriptions, and collection of soil samples for laboratory analysis; and
- Data interpretation and reporting.

2. Site Description

2.1 Property Identification, Location and Physical Setting

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

Table 2-1 Site Identification, Location and Zoning

Attribute	Description
Street Address	25 George Street, North Strathfield NSW
Location Description	Approx. 11.3 km west of Sydney CBD, bound by George Street (west), the rail corridor (east) and high density commercial / residential (north and south).
Site Coordinates	North-east corner of site (GDA94-MGA56): Easting: 322941.136 Northing: 6252534.871 (Source: http://maps.six.nsw.gov.au)
Site Area	Approx. 7,750 m ²
Lot and Deposited Plan (DP)	CP / - / SP2302
State Survey Marks	Two (2) State Survey Marks (SSM) and one (1) Permanent Marker (PM) are situated in close proximity (<100 m) to the site: <ul style="list-style-type: none">▪ SS102225 on the corner of George Street and Argonne Street;▪ SS114365 on the corner of George Street and Mena Street; and▪ PM57033N immediately adjacent the site, within the rail corridor. (Source: http://maps.six.nsw.gov.au)
Local Government Authority	City of Canada Bay Council
Current Zoning	IN1 – General Industrial (Canada Bay Local Environment Plan 2013)
Current Land Uses	Commercial / industrial

2.2 Regional Setting

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

Table 2-2 Topographical, Geological, Soil Landscape and Hydrogeological Information

Attribute	Description
Topography	The site lies atop a crest with a gentle slope to the west.
Site Drainage	Consistent with the general slope of the site, stormwater is assumed to flow to the west, towards Powells Creek via drainage systems discharging to various stormwater easements and the municipal stormwater system.
Regional Geology	With reference to the 1:100 000 scale Geological Series Sheet 9130 (Sydney) the site is likely to be underlain by Ashfield Shale, a formation of the Wianamatta Group (Rwa). Ashfield Shale typically consists of <i>black to dark-grey shale and laminite</i> .

Attribute	Description
Soil Landscape	The Soil Conservation Service of NSW Soil Landscapes of the Sydney 1:100,000 Sheet (Chapman and Murphy, 1989) indicates that the site is underlain by the Blacktown (bt) Residual Landscape, which typically includes red-brown podzolic soil on crests, upper slopes and well-drained areas, and yellow podzolic soils and soloths on lower slopes and in areas of poor drainage.
Acid Sulfate Soil Risk	<p>With reference to the Parramatta - Prospect Acid Sulfate Soil Risk Map (1:25,000 scale; Murphy, 1997), the subject land lies on the boundary of land described as '<i>No Known Occurrence</i>' and '<i>Disturbed Terrain x2</i>'. In such cases, anthropogenic fill material is likely to occur up to 2 mBGL, as such, acid sulfate soils (ASS) investigation is required.</p> <p>With reference to the Canada Bay LEP (2013) Acid Sulfate Soils Map (Sheet ASS_004) the site lies in a '<i>Class 5</i>' area with respect to <i>Acid Sulfate Soils</i>. However, the site is <500m from a '<i>Class 2</i>' area, as such investigation for ASS is required.</p>
Nearest Surface Water Feature	<p>Powells Creek (located 220m to the west).</p> <p>Powells Creek discharges into the Parramatta River which is considered to be tidally influenced, therefore are classed as a marine water ecosystem for assessment purposes.</p>
Inferred Groundwater Flow Direction	Groundwater was inferred to flow west, towards Powells Creek.

3. Desktop Review

3.1 Geomorphic and Site Characteristics of Acid Sulfate Soils

Observations compiled during the site inspection and via aerial photography interpretation were compared against various geomorphic characteristics and features outlined in Stone et al (1998) indicating likely ASS occurrence. Geomorphic and site features indicative of potential presence of ASS are presented below in **Table 3-1**.

Table 3-1 Geomorphic and Site Indicators of Acid Sulfate Soils

Geomorphic and Site Features	Site Presence of Feature
Holocene Sediments	Not Present
Soil horizons less than 5 mAHd	Not Present
Marine / estuarine sediments or tidal lakes	Not Present
Coastal wetland; backwater swamps; waterlogged or scaled areas; inter-dune swales or coastal sand dunes.	Not Present
Dominant vegetation is mangroves, reeds, rushes and other swamp or marine tolerant species	Not present (present within 500 m of the site)
Geologies containing sulfide bearing material	Not Present
Deep older (Pleistocene) estuarine sediments	Not Present

4. Field Work

4.1 Extent of the Soil Disturbance during Proposed Redevelopment

Based on the provided documents, EI understands that the proposed development involves demolition of the existing site structures and the construction of three (3) multi-storey buildings with communal open space overlying a two-level basement car parking. An excavation of up to 6m BGL is expected for the proposed development. Locally deeper excavations may be required for footings, service trenches, and lift overrun pits.

4.2 Intrusive Soil Investigation and Sampling

Sub-surface inspections and associated soil sampling was conducted at three (3) test borehole locations on 25 October 2019. Sampling locations were distributed in a triangular pattern throughout the central portion of the site. Stone et al (1998) indicate a minimum of four boreholes are required for investigation of sites up to 1 ha in area. Given the site is approximately 0.75 ha, three (3) borehole locations were considered sufficient for the purposes of this investigation. The borehole locations are presented in **Figure 2**.

Intrusive investigation was performed by the use of a ute mounted drill rig with a solid flight auger, and extended to a maximum depth of 6.0 mBGL (termination depth at bedrock). Soil samples were collected from 0.5 m and 1.0 mBGL and stopped once shale bedrock was encountered in accordance with the ASSMAC Guidelines (1998).

Soils observed during drilling generally comprised of silty clay and extremely weathered shale. Visual indicators of actual acid sulfate soils (AASS) (i.e. soils containing pale yellow deposits / coatings of jarosite) were not observed. Indicators of potential acid sulfate soils (PASS), including shell fragments and water logged sands, were not observed in soils examined. Groundwater was not encountered within the test bore.

Table 4-1 Subsurface Soil Profile

Layer	Description	Approx. depth to top & bottom of layer (mBGL)
Hardstand	Concrete / Asphalt	0 – 0.2
Fill / Topsoil	SAND (SP): fine to medium grained, poorly graded, sub-angular to angular, yellow to brown with trace angular gravels, dry, no odour.	0.2-0.5
	Silty CLAY (CL); low to medium plasticity, dark brown with some rounded gravels, dry, no odour.	0.4-0.8
Natural	Silty CLAY (CH); low to medium plasticity, dark brown with trace rounded gravels, dry, no odour.	0.6-1.1
	Extremely weather SHALE: light brown, dry, no odour.	1.2-6.0
Bedrock	Shale; dark grey, fine grained.	7.0+

Note 1 + Approximate depth shown as metres below ground level (mBGL).

4.3 Sample Handling Procedures

A stainless steel hand trowel was used to transfer soil samples from the auger into laboratory-supplied, zip lock bags. Upon sealing, the sample was immediately stored in an insulated chest containing ice, and refrigerated as soon as practicable prior to transportation to the designated NATA-accredited laboratory.

All samples were transported under refrigerated conditions to SGS Australia Pty Ltd (SGS), using strict Chain-of-Custody procedures. A copy of the completed Chain-of-Custody certificate is presented in **Appendix E**.

4.4 pH Field Screen Test

Representative samples from soil horizons (to shale bedrock) were initially selected for laboratory analysis via the field screen testing method, to screen for possible presence of AASS and PASS, as described in the Section 2 (Appendix 1) of Stone et al (1998). Requirement for subsequent quantitative laboratory analysis of soil samples for Suspended Peroxide Oxidation – Combined Acidity & Sulfate Analysis (SPOCAS) was considered.

All laboratory analyses were conducted on discrete samples using NATA-registered methods. Laboratory results are summarised in **Table 5-1** and **Appendix B: T1**, with laboratory analytical certificates provided in **Appendix F**.

4.5 Adopted Criteria

The analytical results obtained from field screen testing were interpreted with respect to the indicators of ASS presented in Table 4 of WA DER (2015). Analytical results obtained from quantitative analysis via pH/pH_{fox} were interpreted with respect to fine textured soil (clay) where >1,000 tonnes of soils are to be disturbed, as presented in Section 2, Table 4.4 of Stone et al (1998).

5. Laboratory Analytical Results

5.1 Non-Oxidised and Oxidised pH Testing

Non-oxidised (pH_f) and oxidised ($\text{pH}_{f\text{Ox}}$) pH testing was conducted on four (4) representative samples at a NATA accredited laboratory. All results for pH_f were $>\text{pH } 4$, indicating the overall absence of actual ASS.

Results for the peroxide-oxidised samples ($\text{pH}_{f\text{Ox}}$) were $>\text{pH } 3.5$, which indicates that potential acid sulfate soils (PASS) are not present (as shown in **Table 5.1**).

Due to the absence of indicators of potential or actual ASS additional laboratory analysis (SPOCAS or Chromium Suite analysis) was not considered necessary.

Table 5-1 Summary of Laboratory Analytical Results

Sample ID	Sampling Depth (m BGL)	Sampling Date	Soil Type	pH _F	Peroxide pH (pH _{OX})	pH Difference	Reaction Strength
BH107_0.5	0.5-0.6	25/10/2019	Silty CLAY	4.7	4.5	0.2	XX
BH107_1.5	1.5-1.6		Weathered SHALE	4.6	4.1	0.5	X
BH109_1.0	1.0-1.1		Weathered SHALE	4.7	4.4	0.3	X
BH110_1.0	1.0-1.1		Weathered SHALE	4.4	4.2	0.3	XX
Assessment Criteria							
ASSMAC (Fine Texture)				NR	<3.5	>2	XXXX
Notes:							
	Indicates reported result is over the action criteria.						
	Indicates criteria exceeded.						
	pH _F – Field pH						
	pH _{OX} – Peroxide oxidised pH						
	NA – Not Analysed						
			Action criteria provided in Section 2, Table 4.4 of the Acid Sulfate Soils Assessment Guidelines by NSW Acid Sulfate Soils Management Advisory Committee, August 1998. Criteria are for sites with coarse texture soils and where less than 1,000 tonnes materials to be disturbed.				
ASSMAC							

6. Discussion and Conclusions

Project Objective

This report has been prepared to evaluate the potential risk of exposure of AASS or PASS for the excavation of footings and a proposed basement car parking.

Desktop Study

- The site is underlain by clays of the Blacktown Soil group (bt) and Ashfield Shale at depth. The nearest surface water feature is Powells Creek, 220m west of the site;
- The Canada Bay Local Environmental Plan 2013 indicates that the site lies within a Class 5 ASS area but is <500m from a Class 2 ASS area and therefore investigation was required; and
- The Parramatta – Prospect Soil Risk Map indicates that the site lies within the map class description of 'No Known Occurrence' (ASS is unlikely to be present).

Field Study

- Intrusive investigation indicated soils to comprise fill to a maximum depth of 0.8 mBGL, followed by residual clay which extended to a maximum depth of 1.1 mBGL and was underlain of SHALE bedrock; and
- pH_F / pH_{FOX} analysis of representative soil samples did not indicate the presence of actual Acid Sulfate Soils (AASS) or potential Acid Sulfate Soils (PASS) within any of the samples analysed.

Conclusions and Recommendations

Based on the desktop study, laboratory analysis and observations compiled, EI consider the risk of PASS/AASS to be low, no environmental management of ASS is required.

7. Statement of Limitations

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

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

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

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

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

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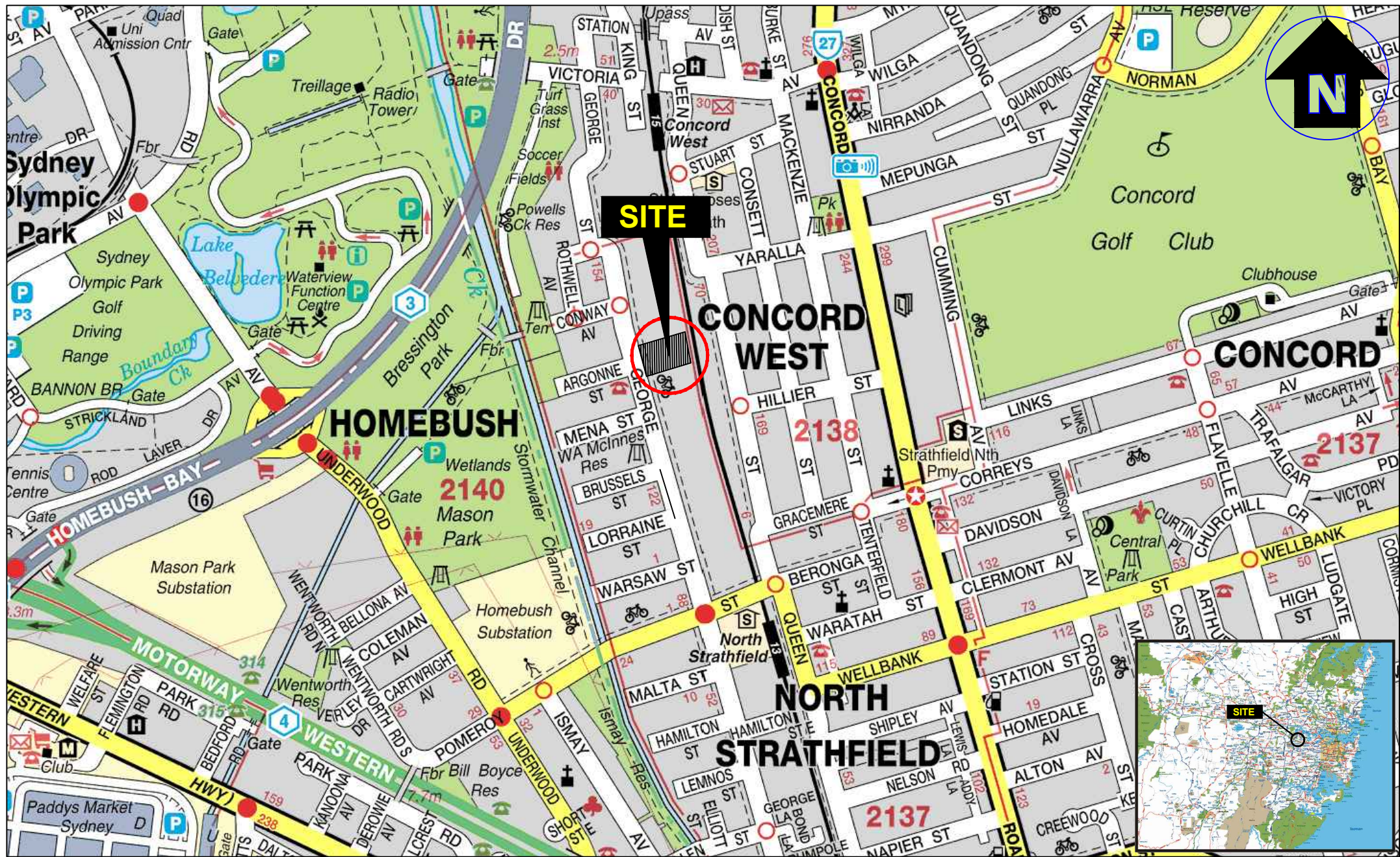
Sutherland Shire Council Local Environmental Plan 2015

WA DER (2015) *Identification and investigation of acid sulfate soils and acidic landscapes*, Western Australian Department of Environment Regulation, DER2015001427, June 2015.

Abbreviations

AASS	Actual acid sulfate soils
AHD	Australian Height Datum
ASS	Acid sulfate soils
ASRIS	Australian Soil Resource Information System
ASSMAC	Acid Sulfate Soil Management Advisory Committee (ASSMAC)
ASSMP	Acid Sulfate Soils Management Plan
BGL	Below Ground Level
BH	Borehole
COC	Chain of Custody
DA	Development Application
DP	Deposited Plan
EI	EI Australia
EPA	Environmental Protection Authority
km	Kilometres
m	Metres
mAHD	Metres relative to Australian Height Datum
mBGL	Metres below ground level
NATA	National Association of Testing Authorities, Australia
NSW	New South Wales
OEH	Office of Environment and Heritage, NSW (formerly DEC, DECC, DECCW)
PASS	Potential acid sulfate soils
pH	Measure of the acidity or basicity of an aqueous solution
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance / Quality Control
SRA	Sample receipt advice (document confirming laboratory receipt of samples)

Appendix A - Figures



Drawn:	L.C.
Approved:	-
Date:	06-11-19
Scale:	Not To Scale

North Strathfield One Pty Ltd
 Detailed Site Investigation
 25 George Street, North Strathfield NSW

Site Locality Plan

Figure:

1



LEGEND

- - - Approximate site boundary
- ⊕ Approximate borehole location
- ⊖ Approximate monitoring well location



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Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn: L.C.

Approved: -

Date: 06-11-19

North Strathfield One Pty Ltd
Detailed Site Investigation
25 George Street, North Strathfield NSW
Sampling Location Plan

Figure:

2

Project:
E24421 E02_Rev0

Appendix B - Proposed Development Plans

GEORGE STREET

GREAT NORTHERN RAILWAY

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INFORMATION
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print date and time: Thursday, 30 May 2019 @ 5:06 pm
LEGEND

UNIT TYPES

- 1 BED
- 1 BED + STUDY
- 1 BED + MEDIA NOOK
- 1 BED + TERRACE
- 2 BED APARTMENT
- 2 BED + STUDY
- 2 BED + MEDIA NOOK
- 2 BED + TERRACE
- 3 BED APARTMENT
- 3 BED DUAL KEYS
- 3 BED DUAL KEYS + MEDIA NOOK
- 3 BED DUAL KEYS + TERRACE
- 4 BED APARTMENT
- 4 BED DUAL KEYS
- BALCONY
- RESIDENTIAL CARSPACE
- VISITORS CARSPACE
- ADAPTABLE CARSPACE
- ACCESSIBLE CARSPACE
- SHARED ZONE
- BOLLARD
- STORAGE CAGES
- STORAGE ROOM
- DEEP SOIL ZONE - DCP 30% = 369m²
- ADAPTABLE APARTMENT
- LIVABLE APARTMENT
- EASEMENT - TO BE EXTINGUISHED
- AIR CONDITIONER CONDENSER UNIT

DCP CAR PARKING RATES

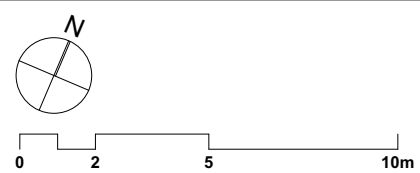
Maximum Car Parking Rates (Extract of Table 3.2 Paramatta Road Corridor Urban Transformation Strategy, Planning and Design Guidelines, Nov 2016, Page 45)

Category	Residential (max. spaces per dwelling)				
	Studio	1 bed	2 bed	3 bed	Visitor
Homebush Precinct	0.3	0.5	0.9	1.2	0.1

REVISION ID	ISSUE NAME	ISSUE DATE
09	FOR INFORMATION	13/4/18
08	FOR INFORMATION	6/4/18
07	FOR INFORMATION	3/4/18
06	FOR INFORMATION	16/3/18

ARCHITECT
FUSE
ARCHITECTURE | URBAN DESIGN | INTERIOR DESIGN
STUDIO 64
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SYDNEY NSW 2010
MAIL@FUSEARCHITECTURE.COM.AU
ABN 81 612 046 643
NOMINATED ARCHITECT RACHID ANDARY 8627

CLIENT
PIETYTHP
SUITE 802, LEVEL 8, 117 YORK STREET SYDNEY NSW 2000 AUSTRALIA



PROJECT
25 GEORGE STREET
SITE ADDRESS
25 GEORGE STREET, NORTH STRATHFIELD, NSW 2137
JOB NO
1711
CHECKED
DRAWN
DATE
13/4/18
SCALE
1:200 @ A1 1:400 @ A3
PROJECT STATUS
DEVELOPMENT APPLICATION
DRAWING TITLE
BASEMENT 2 PLAN

SHEET NO.
DA 101
REVISION
09

GEORGE STREET

GREAT NORTHERN RAILWAY

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3 BED DUAL KEYS + TERRACE

4 BED APARTMENT

4 BED DUAL KEYS

BALCONY

RESIDENTIAL CARSPACE

V VISITORS CARSPACE

A ADAPTABLE CARSPACE

ACCESSIBLE CARSPACE

SHARED ZONE

B BOLLARD

S STORAGE CAGES

SR STORAGE ROOM

DEEP SOIL ZONE - DCP 30% = 369m²

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L LIVABLE APARTMENT

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13/4/18

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1:200 @ A1

1:400 @ A3

PROJECT STATUS

DEVELOPMENT APPLICATION

DRAWING TITLE

GROUND LEVEL PLAN

SHEET NO.

DA 103

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09

GEORGE STREET

GREAT NORTHERN RAILWAY

27 GEORGE STREET
4 STOREY

27 GEORGE STREET
6 STOREY

23A GEORGE STREET
4 STOREY

SWIMMING POOL

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2

5

10m

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1711
CHECKED
DRAWN
DATE
13/4/18
SCALE
1:200 @ A1 1:400 @ A3
PROJECT STATUS
DEVELOPMENT APPLICATION
DRAWING TITLE
LEVEL 1 PLAN
SHEET NO.
DA 104
REVISION
09

GEORGE STREET

GREAT NORTHERN RAILWAY

27 GEORGE STREET
4 STOREY

27 GEORGE STREET
6 STOREY

23A GEORGE STREET
4 STOREY

SWIMMING POOL

GENERAL NOTES

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INFORMATION

file: 190329_25 GEORGE STREET
print date and time: Thursday, 30 May 2019 @ 5:06 pm

LEGEND

UNIT TYPES

- 1 BED
- 1 BED + STUDY
- 1 BED + MEDIA NOOK
- 1 BED + TERRACE
- 2 BED APARTMENT
- 2 BED + STUDY
- 2 BED + MEDIA NOOK
- 2 BED + TERRACE
- 3 BED APARTMENT
- 3 BED DUAL KEYS
- 3 BED DUAL KEYS + MEDIA NOOK
- 3 BED DUAL KEYS + TERRACE
- 4 BED APARTMENT
- 4 BED DUAL KEYS
- BALCONY
- RESIDENTIAL CARSPACE
- V VISITORS CARSPACE
- A ADAPTABLE CARSPACE
- ACCESSIBLE CARSPACE
- SHARED ZONE
- B BOLLARD
- S STORAGE CAGES
- SR STORAGE ROOM
- DEEP SOIL ZONE - DCP 30% = 369m²
- A ADAPTABLE APARTMENT
- L LIVABLE APARTMENT
- EASEMENT - TO BE EXTINGUISHED
- A/C AIR CONDITIONER CONDENSER UNIT

REVISION ID	ISSUE NAME	ISSUE DATE
09	FOR INFORMATION	13/4/18
08	FOR INFORMATION	6/4/18
07	FOR INFORMATION	3/4/18
06	FOR INFORMATION	16/3/18

ARCHITECT
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STUDIO 64
61 MARLBOROUGH STREET
SYDNEY NSW 2010
MAIL@FUSEARCHITECTURE.COM.AU
ABN 81 612 046 643
NOMINATED ARCHITECT RACHID ANDARY 8627

CLIENT
PIETYTHP
SUITE 802, LEVEL 8, 117 YORK STREET SYDNEY NSW 2000 AUSTRALIA

PROJECT
25 GEORGE STREET
SITE ADDRESS
25 GEORGE STREET, NORTH STRATHFIELD, NSW 2137
JOB NO
1711
CHECKED
DRAWN
DATE
13/4/18
SCALE
1:200 @ A1 1:400 @ A3
PROJECT STATUS
DEVELOPMENT APPLICATION
DRAWING TITLE
LEVEL 2 PLAN

SHEET NO.
DA 105

REVISION
09

GEORGE STREET

GREAT NORTHERN RAILWAY

27 GEORGE STREET
4 STOREY

27 GEORGE STREET
6 STOREY

23A GEORGE STREET
4 STOREY

SWIMMING POOL

GENERAL NOTES

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INFORMATION

file: 190329_25 GEORGE STREET
print date and time: Thursday, 30 May 2019 @ 5:26 pm

UNIT TYPES

- 1 BED
- 1 BED + STUDY
- 1 BED + MEDIA NOOK
- 1 BED + TERRACE
- 2 BED APARTMENT
- 2 BED + STUDY
- 2 BED + MEDIA NOOK
- 2 BED + TERRACE
- 3 BED APARTMENT
- 3 BED DUAL KEYS
- 3 BED DUAL KEYS + MEDIA NOOK
- 3 BED DUAL KEYS + TERRACE
- 4 BED APARTMENT
- 4 BED DUAL KEYS
- BALCONY
- RESIDENTIAL CARSPACE
- V VISITORS CARSPACE
- A ADAPTABLE CARSPACE
- ACCESSIBLE CARSPACE
- SHARED ZONE
- B BOLLARD
- S STORAGE CAGES
- SR STORAGE ROOM
- DEEP SOIL ZONE - DCP 30% = 369m²
- A ADAPTABLE APARTMENT
- L LIVABLE APARTMENT
- EASEMENT - TO BE EXTINGUISHED
- A/C AIR CONDITIONER CONDENSER UNIT

REVISION ID	ISSUE NAME	ISSUE DATE
09	FOR INFORMATION	13/4/18
08	FOR INFORMATION	6/4/18
07	FOR INFORMATION	3/4/18
06	FOR INFORMATION	16/3/18

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SYDNEY NSW 2010
MAIL@FUSEARCHITECTURE.COM.AU
ABN 81 612 046 643
NOMINATED ARCHITECT RACHID ANDARY 8627

CLIENT
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SUITE 802, LEVEL 8, 117 YORK STREET SYDNEY NSW 2000 AUSTRALIA

0 2 5 10m

N

PROJECT
25 GEORGE STREET
SITE ADDRESS
25 GEORGE STREET, NORTH STRATHFIELD, NSW 2137
JOB NO
1711
CHECKED DRAWN
DATE
13/4/18
SCALE
1:200 @ A1 1:400 @ A3
PROJECT STATUS
DEVELOPMENT APPLICATION
DRAWING TITLE
LEVEL 3 PLAN
SHEET NO.
DA 106
REVISION
09

GEORGE STREET

GREAT NORTHERN RAILWAY

27 GEORGE STREET
4 STOREY

27 GEORGE STREET
6 STOREY

23A GEORGE STREET
4 STOREY

SWIMMING POOL

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file: 190329_25 GEORGE STREET
print date and time: Thursday, 30 May 2019 @ 5:26 pm

LEGEND

UNIT TYPES

- 1 BED
- 1 BED + STUDY
- 1 BED + MEDIA NOOK
- 1 BED + TERRACE
- 2 BED APARTMENT
- 2 BED + STUDY
- 2 BED + MEDIA NOOK
- 2 BED + TERRACE
- 3 BED APARTMENT
- 3 BED DUAL KEYS
- 3 BED DUAL KEYS + MEDIA NOOK
- 3 BED DUAL KEYS + TERRACE
- 4 BED APARTMENT
- 4 BED DUAL KEYS
- BALCONY
- RESIDENTIAL CARSPACE
- V VISITORS CARSPACE
- A ADAPTABLE CARSPACE
- ACCESSIBLE CARSPACE
- SHARED ZONE
- B BOLLARD
- S STORAGE CAGES
- SR STORAGE ROOM
- DEEP SOIL ZONE - DCP 30% = 369m²
- A ADAPTABLE APARTMENT
- L LIVABLE APARTMENT
- EASEMENT - TO BE EXTINGUISHED
- A/C AIR CONDITIONER CONDENSER UNIT

REVISION ID	ISSUE NAME	ISSUE DATE
09	FOR INFORMATION	13/4/18
08	FOR INFORMATION	6/4/18
07	FOR INFORMATION	3/4/18
06	FOR INFORMATION	16/3/18

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SYDNEY NSW 2010
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ABN 81 612 046 643
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SUITE 802, LEVEL 8, 117 YORK STREET SYDNEY NSW 2000 AUSTRALIA

PROJECT
25 GEORGE STREET

SITE ADDRESS
25 GEORGE STREET, NORTH STRATHFIELD, NSW 2137

JOB NO
1711

CHECKED
DRAWN

DATE
13/4/18

SCALE
1:200 @ A1 1:400 @ A3

PROJECT STATUS
DEVELOPMENT APPLICATION

DRAWING TITLE
LEVEL 4 PLAN

SHEET NO.	REVISION
DA 107	09

GEORGE STREET

GREAT NORTHERN RAILWAY

27 GEORGE STREET
4 STOREY

27 GEORGE STREET
6 STOREY

23A GEORGE STREET
4 STOREY

SWIMMING POOL

GENERAL NOTES

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INFORMATION

file: 190329_25 GEORGE STREET
print date and time: Thursday, 30 May 2019 @ 5:09 pm

LEGEND

UNIT TYPES

- 1 BED
- 1 BED + STUDY
- 1 BED + MEDIA NOOK
- 1 BED + TERRACE
- 2 BED APARTMENT
- 2 BED + STUDY
- 2 BED + MEDIA NOOK
- 2 BED + TERRACE
- 3 BED APARTMENT
- 3 BED DUAL KEYS
- 3 BED DUAL KEYS + MEDIA NOOK
- 3 BED DUAL KEYS + TERRACE
- 4 BED APARTMENT
- 4 BED DUAL KEYS
- BALCONY
- RESIDENTIAL CARSPACE
- V VISITORS CARSPACE
- A ADAPTABLE CARSPACE
- ACCESSIBLE CARSPACE
- SHARED ZONE
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- S STORAGE CAGES
- SR STORAGE ROOM
- DEEP SOIL ZONE - DCP 30% = 369m²
- A ADAPTABLE APARTMENT
- L LIVABLE APARTMENT
- EASEMENT - TO BE EXTINGUISHED
- A/C AIR CONDITIONER CONDENSER UNIT

REVISION ID	ISSUE NAME	ISSUE DATE
09	FOR INFORMATION	13/4/18
08	FOR INFORMATION	6/4/18
07	FOR INFORMATION	3/4/18
06	FOR INFORMATION	16/3/18

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ABN 81 612 046 643
NOMINATED ARCHITECT RACHID ANDARY 8627

CLIENT

PIETYTHP

SUITE 802, LEVEL 8, 117 YORK STREET SYDNEY NSW 2000 AUSTRALIA

PROJECT

25 GEORGE STREET

SITE ADDRESS

25 GEORGE STREET, NORTH STRATHFIELD, NSW 2137

JOB NO

1711

CHECKED

DRAWN

DATE

13/4/18

SCALE

1:200 @ A1 1:400 @ A3

PROJECT STATUS

DEVELOPMENT APPLICATION

DRAWING TITLE

LEVEL 5 PLAN

SHEET NO

DA 108

REVISION

09

GEORGE STREET

GREAT NORTHERN RAILWAY

27 GEORGE STREET
4 STOREY

27 GEORGE STREET
6 STOREY

23A GEORGE STREET
4 STOREY

SWIMMING POOL

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file: 190329_25 GEORGE STREET
print date and time: Friday, 31 May 2019 @ 1:16 pm

LEGEND

UNIT TYPES

- 1 BED
- 1 BED + STUDY
- 1 BED + MEDIA NOOK
- 1 BED + TERRACE
- 2 BED APARTMENT
- 2 BED + STUDY
- 2 BED + MEDIA NOOK
- 2 BED + TERRACE
- 3 BED APARTMENT
- 3 BED DUAL KEYS
- 3 BED DUAL KEYS + MEDIA NOOK
- 3 BED DUAL KEYS + TERRACE
- 4 BED APARTMENT
- 4 BED DUAL KEYS
- BALCONY
- RESIDENTIAL CARSPACE
- V VISITORS CARSPACE
- A ADAPTABLE CARSPACE
- ACCESSIBLE CARSPACE
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- B BOLLARD
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- SR STORAGE ROOM
- DEEP SOIL ZONE - DCP 30% = 369m²
- A ADAPTABLE APARTMENT
- L LIVABLE APARTMENT
- EASEMENT - TO BE EXTINGUISHED
- A/C AIR CONDITIONER CONDENSER UNIT

REVISION ID ISSUE NAME ISSUE DATE

09	FOR INFORMATION	13/4/18
08	FOR INFORMATION	6/4/18
07	FOR INFORMATION	3/4/18
06	FOR INFORMATION	16/3/18

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ABN 61 612 046 643
NOMINATED ARCHITECT RACHID ANDARY 8627

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PROJECT
25 GEORGE STREET
SITE ADDRESS
25 GEORGE STREET, NORTH STRATHFIELD, NSW 2137
JOB NO
1711
CHECKED DRAWN

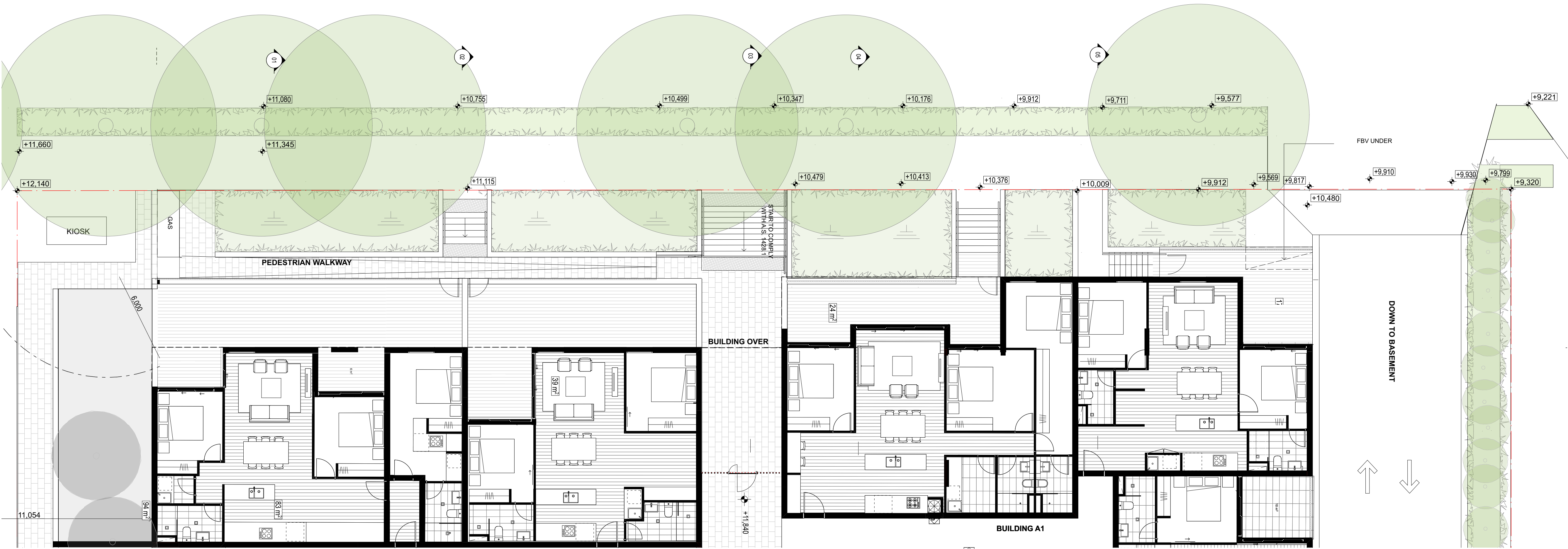
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13/4/18
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PROJECT STATUS
DEVELOPMENT APPLICATION
DRAWING TITLE
ROOF PLAN

SHEET NO.
DA 109

REVISION
09

GEORGE STREET



REVISION ID ISSUE NAME ISSUE DATE

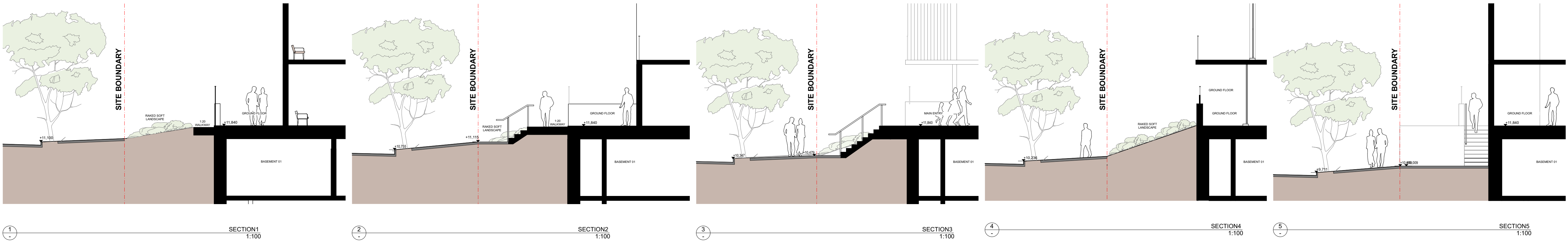
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ARCHITECTURE | URBAN DESIGN | INTERIOR DESIGN
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SYDNEY NSW 2010
MAIL@FUSEARCHITECTURE.COM.AU
ABN 61 612 046 643
NOMINATED ARCHITECT RACHID ANDARY 8627

CLIENT
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SUITE 802, LEVEL 8, 117 YORK STREET SYDNEY NSW 2000 AUSTRALIA

PROJECT
25 GEORGE STREET
SITE ADDRESS
25 GEORGE STREET, NORTH STRATHFIELD, NSW 2137
JOB NO
1711
CHECKED DRAWN
DATE SCALE
1:100 @ A1 1:200 @ A3

PROJECT STATUS
DEVELOPMENT APPLICATION
DRAWING TITLE
STREET INTERFACE

SHEET NO.
DA 604
REVISION




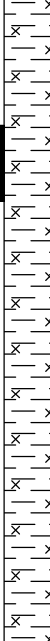


Appendix C - Borehole Logs

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:




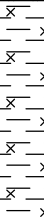

Drilling					Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T		GWNE	0.0					-	Concrete Slab.	-			CONCRETE HARDSTAND
			0.15				-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.		FILL			
			0.40	BH101_0.3-0.4 ES PID=0.0ppm		CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.		NATURAL				
			1.30	BH101_0.6-0.7 ES PID=0.0ppm			Hole Terminated at 1.30 mBGL; Target depth reached.						
			1.5										
			2.0										

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:




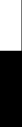
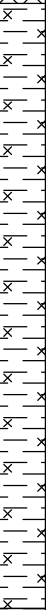
Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0					-	Concrete Slab.	-		CONCRETE HARDSTAND
			0.15					-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.			FILL
			0.40	BH102_0.3-0.4 ES PID=0.0ppm			-	FILL: Silty CLAY; low to medium plasticity, dark brown, with some rounded gravels, no odour.	D			
			0.80	BH102_0.6-0.7 ES PID=0.0ppm			CL- CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.			NATURAL	
			1.10	BH102_0.9-1.0 ES PID=0.0ppm								
			1.5						Hole Terminated at 1.10 mBGL; Target depth reached.			
			2.0									

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:



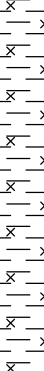

Drilling				Sampling		Field Material Description							
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0					-	Concrete Slab.	-			CONCRETE HARDSTAND
			0.15		BH103_0.2-0.3 ES PID=0.0ppm			-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.			FILL	
			0.40					CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.	D		NATURAL	
			0.5		BH103_0.6-0.7 ES PID=0.0ppm								
			1.0										
			1.20						Hole Terminated at 1.20 mBGL; Target depth reached.				
			1.5										
			2.0										

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:



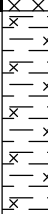

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T		GWNE	0.0					-	Concrete Slab.	-		CONCRETE HARDSTAND
			0.15		BH104_0.2-0.3 ES PID=0.0ppm		-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.		FILL		
			0.50				CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.	D	NATURAL		
			1.0		BH104_1.0-1.1 ES PID=0.0ppm							
			1.60						Hole Terminated at 1.60 mBGL; Target depth reached.			

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:




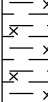
Drilling				Sampling		Field Material Description							
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0		BH105_0.2-0.3 ES PID=0.0ppm BH105_0.6-0.7 ES PID=0.0ppm			-	Concrete Slab.	-	D	-	CONCRETE HARDSTAND
			0.15				-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.		FILL			
			0.30				CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.		NATURAL			
			0.70				-	SHALE; Extremely weathered, light brown to grey, no odour.		BEDROCK			
			1.10					Hole Terminated at 1.10 mBGL; Target depth reached.					
			1.5										
			2.0										

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0		BH106_0.2-0.3 ES PID=0.0ppm		-	Concrete Slab.	-	D	CONCRETE HARDSTAND
			0.15			-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.		FILL		
			0.40			CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.		NATURAL		
			0.90			BH106_0.7-0.8 ES PID=0.0ppm			Hole Terminated at 0.90 mBGL; Refusal on ectremely weahtered SHALE.		
			1.0								
			1.5								
			2.0								

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:

Drilling				Sampling	Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION
										CONSISTENCY DENSITY
										PIEZOMETER DETAILS
										ID Static Water Level BH107M
										BH107M
			0	0.20				-	Concrete Slab.	-
			0.50		BH107_0.3-0.4 ES PID=0.0ppm			-	FILL: Silty CLAY; low to medium plasticity, dark brown, with some rounded gravels, no odour.	
			0.80		BH107_0.5 ASS			CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.	
					BH107_0.7-0.8 ES PID=0.0ppm			-	SHALE; Extremely weathered, light brown to grey, no odour.	
			1							
					BH107_1.5 ASS					
			2							
					BH107_2.5 ASS					
			3							
					BH107_3.5 ASS					
			4							
					BH107_4.5 ASS					
			5							
			6							
			7	7.00					From 7.0m, dark grey.	
			8							
			9	9.00					Hole Terminated at 9.00 mBGL; Target depth reached.	
			10							

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor -
 Drill Rig Hand Auger
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:

Drilling				Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0		BH108_0.0-0.1 ES PID=0.0ppm			-	FILL: Silty CLAY; low to medium plasticity, dark brown, with fine to coarse and sub-angular to angular gravels, with trace glass fragments, no odour.		FILL
			0.5		BH108_0.5-0.6 ES PID=0.0ppm					D	
			0.70					CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.		NATURAL
			0.90		BH108_0.8-0.9 ES PID=0.0ppm						
			1.0						Hole Terminated at 0.90 mBGL; Target depth reached.		
			1.5								
			2.0								

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:

Drilling				Sampling		Field Material Description									
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	PIEZOMETER DETAILS		
													ID BH109M	Static Water Level	
AD/T		GWNE	0		BH109_0.1-0.2 ES PID=0.0ppm			-	ROADBASE.	-					
			0.50					-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.						
			0.70		BH109_0.6-0.7 ES PID=0.0ppm			-	FILL: Silty CLAY; low to medium plasticity, dark brown, with some rounded gravels, no odour.						
			1		BH109_1.0 ASS				SHALE; extremely weathered, pale brown, no odour.						
			2		BH109_2.0 ASS										
			3		BH109_3.0 ASS										
			4		BH109_4.0 ASS										
			5		BH109_5.0 ASS										
			5.50												
			6						Hole Terminated at 5.50 mBGL; Auger refusal						
			7												
			8												
			9												
			10												

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
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


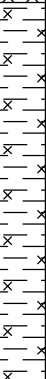
Drilling				Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0					-	ASPHALT.	-		ROAD SURFACE
			0.10				-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.			FILL	
			0.60	BH111_0.2-0.3 ES PID=0.0ppm					D			
			1.00	BH111_0.8-0.9 ES PID=0.0ppm		CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.			NATURAL		
			1.0					Hole Terminated at 1.00 mBGL; Target depth reached.				
			1.5									
			2.0									

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:

Drilling				Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0		BH112_0.2-0.3 ES PID=0.0ppm			-	ASPHALT.	-		ROAD SURFACE
			0.10					-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.		FILL	
			0.60		BH112_0.8-0.9 ES PID=0.0ppm			CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.	D		NATURAL
			1.10						Hole Terminated at 1.10 mBGL; Target depth reached.			
			1.5									
			2.0									

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
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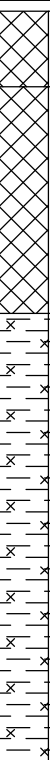
Drilling					Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION		MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0					-	ASPHALT.	-			ROAD SURFACE
			0.10				-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.			FILL		
					BH113_0.2-0.3 ES								
			0.5							D			
					BH113_0.8-0.9 ES PID=0.0ppm								
			1.0										
			1.10										
									Hole Terminated at 1.10 mBGL; Auger refusal				
			1.5										
			2.0										

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
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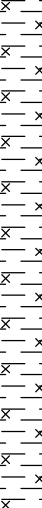
Drilling					Sampling	Field Material Description										
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION		MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS		
AD/T		GWNE	0.0		BH114_0.2-0.3 ES PID=0.0ppm			-	ASPHALT.	D	-		ROAD SURFACE			
			0.10	-				FILL: Silty CLAY; low to medium plasticity, dark brown, with some rounded gravels, no odour.	FILL							
			0.40	CL-Cl				Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.	NATURAL							
			0.5													
			1.0	1.00	BH114_0.8-0.9 ES PID=0.0ppm				Hole Terminated at 1.00 mBGL; Target depth reached.							
			1.5													
			2.0													

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
 Logged JT/LC Date:
 Checked Date:

Drilling				Sampling		Field Material Description						
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0		BH115_0.2-0.3 ES PID=0.0ppm			-	Concrete Slab.	-		CONCRETE HARDSTAND
			0.15				-	FILL: SAND; fine to medium grained, poorly graded, sub-angular to angular, yellow to brown, with trace angular gravels, no odour.		FILL		
			0.30				CL-CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.		NATURAL		
			0.5			BH115_0.5-0.6 ES PID=0.0ppm			D			
			1.00						Hole Terminated at 1.00 mBGL; Target depth reached.			
			1.5									
			2.0									

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
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Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
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 Checked Date:

Drilling				Sampling		Field Material Description							
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0		BH116_0.2-0.3 ES PID=0.0ppm			-	ASPHALT.	-			ROAD SURFACE
			0.10				-	FILL: Silty CLAY; low to medium plasticity, dark brown, with some rounded gravels, no odour.			FILL		
			0.30								NATURAL		
			0.5							D			
			1.00		BH116_0.8-0.9 ES PID=0.0ppm				Hole Terminated at 1.00 mBGL; Target depth reached.				
			1.5										
			2.0										

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

Project Detailed Site Investigation
 Location 25 George Street, North Strathfield NSW
 Position Refer to Figure 2
 Job No. E24421.E02
 Client North Strathfield One Pty Ltd

Contractor Hartgeo Drilling Pty Ltd
 Drill Rig Ute-mounted drilling rig
 Inclination -90°

Sheet 1 OF 1
 Date Started 25/10/19
 Date Completed 25/10/19
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 Checked Date:

Drilling				Sampling		Field Material Description							
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0.0		BH117_0.2-0.3 ES PID=0.0ppm			-	ASPHALT.	-			ROAD SURFACE
			0.10				-	FILL: Silty CLAY; low to medium plasticity, dark brown, with some rounded gravels, no odour.			FILL		
			0.30				CL- CI	Silty CLAY; low to medium plasticity, dark brown, with trace rounded gravels, no odour.			NATURAL		
			0.5					D					
			1.00	1.00					Hole Terminated at 1.00 mBGL; Target depth reached.				
			1.5										
			2.0										

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

Appendix D - Chain of Custody and Sample Receipt Forms

Sheet <u>1</u> of <u>2</u>		Project No: <u>E2421B2</u>		Sample Matrix		Analysis										Comments																											
Site: <u>25, George Street, North St Hill</u> <u>NSW</u>		Laboratory: <u>SGS Australia</u> Unit 16, 33 Maddox Street, ALEXANDRIA NSW 2015 P: 02 8594 0400 F: 02 8594 0499		Project No: <u>E2421B2</u>		WATER		SOIL		OTHERS (i.e. Fibro, Paint, etc.)		HM ^Δ /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos		HM ^Δ /TRH/BTEX/PAHs		HM ^Δ /TRH/BTEX		BTEX		VOCs		Asbestos		Asbestos Quantification		pH / CEC (cation exchange)		pH / EC (electrical conductivity)		Dewatering Suite		sPOCAS		PFAS		HOLD		PH / PH Box		TCLP HM ^Δ / PAH		HM ^Δ Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc HM ^E Arsenic Cadmium Chromium Lead Mercury Nickel Zinc Dewatering Suite pH & EC TDS / Turbidity NTU Hardness Total Cyanide Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) TRH (F1, F2, F3, F4) BTEX PAH Total Phenol LABORATORY TURNAROUND <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Other _____	
Container Type: J= solvent washed, acid rinsed, Teflon sealed, glass jar S= solvent washed, acid rinsed glass bottle P= natural HDPE plastic bottle VC= glass vial, Teflon Septum ZLB = Zip-Lock Bag		Sample ID		Laboratory ID		Container Type		Sampling Date		Time																																	
BH107-05		1		ZLB		25/10/2019		AM																																			
BH107-15		2																																									
BH107-25																																											
BH107-35																																											
BH107-45																																											
BH109-10		3																																									
BH109-20																																											
BH109-30																																											
BH109-40																																											
BH109-50																																											
BH109-60		4																																									
BH110-20																																											

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

Sampler's Name (EI):

Print

Lance Chen

Received by (SGS):

Print

Suba

Signature

Date

28/10/2019

Signature

Date

28/10/2019 @ 12:00

IMPORTANT:

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

Report with EI Waste Classification Table ☐

Sampler's Comments:

Please send the report

to Emmanuelle Woblers



eiaustralia

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

[illegible]



SAMPLE RECEIPT ADVICE

SE199311

CLIENT DETAILS

Contact Emmanuel Woelders
Client EIAUSTRALIA
Address SUITE 6.01
55 MILLER STREET
PYRMONT NSW 2009

Telephone 61 2 95160722
Facsimile (Not specified)
Email emmanuel.woelders@eiaustralia.com.au

Project **E24421.E02 25 George St, Nth Strathfield**
Order Number **E24421.E02**
Samples 4

LABORATORY DETAILS

Manager Huong Crawford
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

Samples Received Mon 28/10/2019
Report Due Mon 4/11/2019
SGS Reference **SE199311**

SUBMISSION DETAILS

This is to confirm that 4 samples were received on Monday 28/10/2019. Results are expected to be ready by COB Monday 4/ 11/2019. Please quote SGS reference SE199311 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provided	Client	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	4 Soil
Date documentation received	28/10/2019	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.3°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

11 soil samples have been placed on hold as no tests have been assigned for them by the client. These samples will not be processed.

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



SAMPLE RECEIPT ADVICE

SE199311

CLIENT DETAILS

Client **EI AUSTRALIA**

Project **E24421.E02 25 George St, Nth Strathfield**

SUMMARY OF ANALYSIS

No.	Sample ID	Field pH for Acid Sulphate Soil
001	BH107_0.5	4
002	BH107_1.5	4
003	BH109_1.0	4
004	BH110_1.0	4

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

Appendix E - Laboratory Analytical Reports

CLIENT DETAILS

Contact Emmanuel Woelders
Client EI AUSTRALIA
Address SUITE 6.01
 55 MILLER STREET
 PYRMONT NSW 2009

Telephone 61 2 95160722
Facsimile (Not specified)
Email emmanuel.woelders@eiaustralia.com.au
Project **E24421.E02 25 George St, Nth Strathfield**
Order Number **E24421.E02**
Samples 4

LABORATORY DETAILS

Manager Huong Crawford
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
 Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com
SGS Reference **SE199311 R0**
Date Received 28/10/2019
Date Reported 31/10/2019

COMMENTS

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

SIGNATORIES



Dong LIANG
 Metals/Inorganics Team Leader

Field pH for Acid Sulphate Soil [AN104] Tested: 31/10/2019

PARAMETER	UOM	LOR	BH107_0.5	BH107_1.5	BH109_1.0	BH110_1.0
			SOIL	SOIL	SOIL	SOIL
			-	-	-	-
			28/10/2019 SE199311.001	28/10/2019 SE199311.002	28/10/2019 SE199311.003	28/10/2019 SE199311.004
pHf	pH Units	-	4.7	4.6	4.7	4.4
pHfox	pH Units	-	4.5	4.1	4.4	4.2
Reaction*	No unit	-	XX	X	X	XX
pH Difference*	pH Units	-10	0.2	0.5	0.3	0.3

METHOD

METHODOLOGY SUMMARY

AN104

pHF is determined on an extract of approximately 2g of as received sample in approximately 10 mL of deionised water with pH determined after standing 30 minutes.

AN104

pHFox is determined on an extract of approximately 2g of as received sample with a few mLs of 30% hydrogen peroxide (adjusted to pH 4.5 to 5.5) with the extract reaction being rated from slight to extreme, with pH determined after reaction is complete and extract has cooled. Referenced to ASS Laboratory Methods Guidelines, method 23Af-Bf, 2004.

X Slight Reaction
 XX Moderate Reaction
 XXX Strong/High Reaction
 XXXX Extreme/Vigorous Reaction (gas evolution and heat generation)

FOOTNOTES

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

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

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

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

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

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

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 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/pv.sgsvr/en-gb/environment.

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STATEMENT OF QA/QC PERFORMANCE

SE199311 R0

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Project **E24421.E02 25 George St, Nth Strathfield**
Order Number **E24421.E02**
Samples 4

LABORATORY DETAILS

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SGS Reference **SE199311 R0**
Date Received 28 Oct 2019
Date Reported 31 Oct 2019

COMMENTS

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

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

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	Client	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	4 Soil
Date documentation received	28/10/2019	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.3°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

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

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

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

Field pH for Acid Sulphate Soil

Method: ME-(AU)-[ENV]AN104

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH107_0.5	SE199311.001	LB186633	28 Oct 2019	28 Oct 2019	25 Nov 2019	31 Oct 2019	25 Nov 2019	31 Oct 2019
BH107_1.5	SE199311.002	LB186633	28 Oct 2019	28 Oct 2019	25 Nov 2019	31 Oct 2019	25 Nov 2019	31 Oct 2019
BH109_1.0	SE199311.003	LB186633	28 Oct 2019	28 Oct 2019	25 Nov 2019	31 Oct 2019	25 Nov 2019	31 Oct 2019
BH110_1.0	SE199311.004	LB186633	28 Oct 2019	28 Oct 2019	25 Nov 2019	31 Oct 2019	25 Nov 2019	31 Oct 2019

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

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

No surrogates were required for this job.

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

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

No method blanks were required for this job.

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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

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

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

Field pH for Acid Sulphate Soil

Method: ME-(AU)-[ENV]AN104

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE199311.004	LB186633.012	pHf	pH Units	-	4.4	4.4	30	0
		pHfox	pH Units	-	4.2	4.3	30	2



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

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

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

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

No matrix spikes were required for this job.

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

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