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UPG EDMONDSON PARKLAND PTY LTD

Geotechnical Investigation

Lot 4-5, 6-7 and 8, Buchan Avenue, Edmondson Park, NSW

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26 February 2026

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Revision	Details	Date	Amended By
0	Original	30 January 2026	
1	Updated Architectural Drawings	13 February 2026	GP
2	Updated Architectural Drawings	26 February 2026	GP

Table of Contents

Schedule of Plates

Schedule of Tables

Appendices

FIGURES

1. Introduction

1.1 Background

This Geotechnical Investigation report is submitted to the Department of Planning, Housing and Infrastructure (DPHI) on behalf UPG Edmondson Parkland Pty Ltd (UPG) to support a State Significant Development Application (SSDA) and Concurrent Rezoning Report for the construction of a new multi stage residential project at Lots 4-5, 6-7, and 8 Buchan Avenue, Edmondson Park (known as Sites 3, 4 and 5) (the site). The proposed development comprising a mix of shop-top housing, residential flat buildings (RFB), co-living housing and affordable housing together with public domain improvements including a new publicly accessible plaza, a public library and through-site pedestrian links.

The project has been identified by the NSW Housing Delivery Authority (HDA) as a key development to accelerate the delivery of well-located, diverse and affordable housing across Greater Sydney, with the HDA playing a coordinating role across government agencies to unlock complex sites through strategic planning, infrastructure coordination and streamlined assessment pathways. On 19 February 2025, the HDA recommended that the proposed development on Sites 4 and 5 (6–7 and 8 Buchan Avenue, Edmondson Park), as outlined in EOI application 232588 dated 17 January 2025, be declared State Significant Development (SSD) under section 4.36(3) of the Environmental Planning and Assessment Act 1979, followed by a similar recommendation on 2 June 2025 for Site 3 (4–5 Buchan Avenue, Edmondson Park) as described in EOI application 246574 dated 14 March 2025. These recommendations were formalised through the Minister's issuance of State Significant Development Declaration Order (No. 9) 2025 on 12 June 2025, with the proposals to be facilitated by a concurrent amendment to the State Environmental Planning Policy (Precincts – Western Parkland City) 2021.

This GI report has been prepared to provide advice and recommendations to assist in the preparation of designs for the proposed developments. The investigation has been carried out in accordance with the agreed scope of works outlined in EI's proposal referenced P23708.1-Rev1, dated 2 October 2025, and with the Client's signed authorisation to proceed, dated 7 November 2025.

1.2 Proposed Development

The following documents, supplied by the Client, were used to assist with the preparation of this GI report:

- Architectural drawings prepared by Plus Studio for Site 3, Project No.: 20794, Drawing No.s DA-S3-0098, DA-S3-0099, DA-S3-3001, Revision B, last dated 26 February 2026;
- Architectural drawings prepared by Plus Studio for Site 4, Project No.: 20794, Drawing No.s DA-S4-0099, DA-S4-1000 and DA-S4-3001, Revision B, dated 26 February 2026;
- Architectural drawings prepared by Plus Studio for Site 5, Project No.: 20794, Drawing No.s DA-S5-0097 to DA-S5-0099, DA-S5-1000, DA-S5-1001, DA-S5-3000 and DA-S5-3001 Revision B, dated 26 February 2026;
- Survey Sketch prepared by SDG Pty Ltd, Ref: 9306, Sheet 1 of 6 to 6 of 6, Survey date: 05/06/2025; and
- Standard text document prepared by Beam Consulting, Referenced Lots 4-5, 6-7 and 8 Buchan Avenue, Edmondson Park.

Based on the provided documents, EI understands that the proposed development involves the following:

- Construction of fourteen residential towers (ranging in height between 6 to 40 storeys) over five podiums (ranging in height between 2-5 storeys), comprising:

- Mixed use podiums in Site 5.
- Public library in Site 3.
- A total of 1,805 residential apartments located above in a combination of build-to-sell and co-living formats.
- Basement car parking.
- Associated landscaping and public domain improvements, including a new publicly accessible plaza, public library and through-site links.

It is noted that the project will commit to providing 15% of the GFA as affordable housing for a minimum of 15 years, to be managed by a registered Community Housing Provider. A summary of the proposed developments for the purpose of the report is provided in **Table 1-1** below:

Table 1-1 Proposed Development Descriptions

Site	Description	Finish Floor Level, FFL (m AHD)	Excavation Depth (m Below Existing Ground Level, BEGL)
3	Four multi-storey mixed-use residential apartment buildings overlying a common stepped two-level basement within public library within its podium.	55.0 m for Basement 01, and 58.15 m for Lower Ground.	Up to 10.5m
4	Two multi-storey residential apartment buildings overlying a common stepped single-level basement.	55.0m for Lower Ground, and 58.1m for Upper Ground.	0.5m to 2.0m
5	Two multi-storey mixed-use apartment buildings overlying a common three-level basement and mixed use podiums.	46.185m to 45.05m for Basement 03	11.0m to 13.0m

1.3 Objectives

The objective of the GI was to assess site surface and subsurface conditions at ten borehole locations, and to provide preliminary geotechnical advice and recommendations to assist in the design of the proposed development.

1.4 Fieldwork Methodology

The scope of works for the GI included:

- Review of relevant background information (i.e. project archives in the vicinity, site plans, publicly available soil and geological maps) for the project area;
- Site walkover inspection by a Geotechnical Engineer to assess site surface conditions.
- Auger drilling of ten boreholes (BH1M, BH2M, BH3M, BH4, BH5, BH6, BH7M, BH8M, BH9M and BH10) by a track-mounted drill rig using solid flight augers equipped with a 'Tungsten-Carbide' (T-C) bit. The boreholes were auger drilled to refusal. Following refusal on bedrock, seven boreholes (BH1M, BH2M, BH3M, BH7M, BH8M, BH9M and BH10) were continued using NMLC diamond coring techniques to termination depths ranging between 10.22 m to 19.95 m BEGL. Borehole logs and rock core photographs are presented in in **Appendix A**.
  - Standard Penetration Testing (SPT) was carried out in all the (as per AS 1289.6.3.1-2004), at regular intervals of 1.5 m from 0.5 m depth, where possible, during auger drilling of the boreholes to assess soil strength/relative densities.
  - Measurements of groundwater seepage/levels, where possible, in the augered sections of the boreholes during and shortly after completion of auger drilling.

  - The strength of the bedrock in the augered sections of the boreholes was assessed by observation of the auger penetration resistance using a T-C drill bit and examination of the recovered rock cuttings. It should be noted that rock strengths assessed from augered boreholes are approximate and strength variances can be expected.
  - The approximate surface levels shown on the borehole logs were interpolated from spot levels shown on the supplied survey plan. Approximate borehole locations are shown on the attached Figure 2.
- Boreholes BH1M, BH2M, BH3M, BH7M, BH8M and BH9M were converted into groundwater monitoring wells to allow for long-term groundwater monitoring. The standpipe piezometers were bailed dry, or of at least 3 well volumes, following installation to develop the wells.
- EI's Geotechnical Engineer was present full-time onsite to set out the borehole locations, direct the testing and sampling, log the subsurface conditions, and record groundwater observations.
- Soil and rock samples were sent to STS Geotechnics Pty Ltd (STS) and SGS Australia (SGS), which are National Australian Testing Authority (NATA) accredited laboratories, for testing and storage.
- Preparation of this GI report.

2. Site Description

2.1 Site Description and Identification

The combined site is located at 4-5, 6-7, and 8 Buchan Avenue, Edmondson Park, and is legally described as Lots 4, 5, 6, 7 and 8 in DP1275478. The site has a total area of approximately 3.1 hectares, with a primary street frontage of approximately 298m to Buchan Avenue, and a secondary street frontage of approximately 186m to Horrie Road. The combined site is owned by UPG Edmondson Parkland Pty Ltd.

The site is located approximately 330m from the Edmondson Park Train Station and directly adjacent to a future high school (currently under construction). The site is also approximately 400m northwest of Frasers Ed Square Town Centre, placing it in a highly accessible and active urban precinct. Site identification details and associated information are presented in **Table 2-1** below while the site locality is shown on the attached **Figure 1**. A satellite image of the site is presented in **Plate 1** below.

Table 2-1 Summary of Site Information

Information	Detail
Street Address	Site 3: Lot 4 and 5 Buchan Avenue, Edmondson Park Site 4: Lot 6 and 7 Buchan Avenue, Edmondson Park Site 5: Lot 8 Buchan Avenue, Edmondson Park
Lot; Deposited Plan (DP)	• Site 3 – Lot 4; DP 1275478; and Lot 5; DP 1275478; • Site 4 – Lot 6 & 7 and DP 1275478; and • Site 5 – Lot 8 and DP 1275478
Site Area	Based on information provided on survey plan, the site areas are: • Site 3 – 11641m^2; • Site 4 – 8220m^2 • Site 5 – 12090m^2
Brief Site Description	At the time of our investigation, the sites were entirely vacant with some paved areas. It is noted that earthworks, subdivision, and the construction of the major and minor roads surrounding the site has been undertaken under previous development consents.

Plate 1 Satellite image of the site (Source: Standard text document reference above)

2.2 Local Land Use

The sites are situated within an area of mixed use. Current uses on surrounding land at the time of our presence on site are described in **Table 2-2** below.

Table 2-2 Summary of Local Land Use

Direction Relative to Site	Land Use Description
North	Jericho Road, a two lane asphalt-paved road. Beyond this is properties 1 -3 Bezentin Ridge Road, a three story terrace dwellings occupying majoring of the property with no basement towards the west and vacant blocks towards the northeast of Site 3, and north of Site 4. The property does not have a basement and is currently under construction.
East	A conservation area.
South	To the south-west of the sites lies a construction site for a proposed new high school. To the south of Site 5 is a Sydney Trains corridor, for T5 and T2 train lines. Buchan Avenue, a four lane asphalt-paved road. Beyond this are one to two storeys building which were under construction during the time one our inspection.
West	Bezentin Ridge Road, a two lane asphalt-paved road. Beyond this is Clermont Park.

2.3 Regional Setting

The site topography and geological information for the locality is summarised in **Table 2-3** below.

Table 2-3 Summary of Reginal Setting Information

Attribute	Description
Topography	Site 3: The site is located within gently (0° to 10°), south-east dipping topography with site levels varying from R.L. 65.5 at the north western site corner to R.L. 57.35 at the south eastern site corner. Site 4: The site is located within gently (0° to 10°), south-east dipping topography with site levels varying from R.L. 58.84 at the north western site corner to R.L. 54.51 at the north eastern site corner. Site 5: The site is located within gently (0° to 10°), north-east dipping topography with site levels varying from R.L. 59.42 at the south western site corner to R.L. 55.91 at the north eastern site corner.
Regional Geology *(Source: MinView)*	Information on regional sub-surface conditions, referenced from MinView Version 2025.12.08, indicates the site to be underlain by Bringelly Shale (Twib). This comprises Shale, carbonaceous claystone, laminate, lithic sandstone, rare coal.
Soil Landscape *(Source: eSPADE)*	The NSW Government Department of Planning, Industry, and Environment *eSPADE v2.2* website (DCCEEW, 2025) indicates that the site overlain by the *Blacktown - Residual (bt)*. ▪ *Landscape* are described as: ‣ Gently undulating rises on Wianamatta Group shales. ‣ Slopes are >5 %; broad rounded crests and ridges with gently inclined slopes. ▪ *Soils* are identified as: ‣ Shallow to moderately deep (>100cm) hardsetting mottled texture contrast soils, red and brown podzolic sils on crests grading to yellow podzolic soils on lower slopes and in drainage line; ▪ Limitations are identified as: ‣ Localised seasonal waterlogging; ‣ Localised water erosion hazard; ‣ Moderately reactive highly plastic subsoil, localised surface movement potential,
Acid Sulfate Soil (ASS) Risk *(Source: eSPADE)*	The NSW Government Department of Planning, Industry, and Environment *eSPADE v2.2* website (DCCEEW, 2025) indicates that the site is situated in an area of *No Known Occurrence.*
Salinity Potential (Source: SEED Map)	Reference to the '*Salinity Potential of Western Sydney*' map from the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW), indicates the site to have a 'Moderate' to 'High' salinity potential.

Plate 2 Excerpt of NSW Seamless Geology with site indicated (Source: MinView)

3. Investigation Results

3.1 Stratigraphy

A summary of the subsurface conditions across all three sites has been interpreted from the assessment results and is presented in **Table 3-1**.Error! Reference source not found.

Detailed descriptions of subsurface conditions at each borehole location are available on the borehole logs presented in **Appendix A**. **Table 4-2** provides the depths and levels of units in each borehole. The details of the methods of soil and rock classifications, explanatory notes and abbreviations adopted on the borehole logs are also in **Appendix A**.

Table 3-1 Summary of Subsurface Conditions

Unit	Material [2]	Depth to Top of Unit (m BEGL) [1]	Observed Thickness (m)	Comments
1	**Fill**	Surface	1.0 to 3.0	Variable fill, comprising of sandy clay, silty clay, gravelly silty sand, various amounts of angular to sub angular gravels, rootlets, and plastic fragments.
2	**Residual Soil**	1.0 to 3.0	1 to 4.32	Silty clay and sandy clay, low to medium plasticity. Stiff to hard. Observed in BH5 and BH7M to BH10 only.
3	**Extremely (XW) to Highly Weathered (HW) Shale**	1.0 to 5.32	1.1 to 6.6 [3]	EW to HW shale, very low to low strength.
4	**Highly Weathered (HW)/ Moderately Weathered (MW) Shale**	4.45 to 7.0	1.55 to 5.0	HW to MW shale, low to medium strength. Observed in BH2M, BH3M, BH7M, and BH8M.
5	**Slightly Weathered (SW) to Fresh (FR) Shale**	6.25 to 12.0	2.7 to 3.9	SW to FR shale, medium to high strength Observed in BH1M, BH3M, BH7M, and BH8M.
6	**Slightly weathered (SW) to Fresh (FR) Sandstone**	6.3 to 15.9	- [4]	SW to FR sandstone, high strength, with occasional medium or very high strength layers. This unit is underlain by medium to high strength shale with sandstone laminations. Observed in BH7M to BH10.

Note 1 Approximate depth and level at the time of our assessment. Depths and levels may vary across the site.
Note 2 For more detailed descriptions of the subsurface conditions, reference should be made to the borehole logs attached in **Appendix A**.
Note 3 Observed up to termination depth in BH4 to BH6.
Note 4 Observed up to termination depth in BH7M to BH10.

3.2 Groundwater Observations

Groundwater inflows were not encountered during auger drilling. Wash boring and NMLC diamond rock coring techniques, requiring the use of drilling fluid, precluded the identification of groundwater or seepage below the augered zone of the boreholes.

Following their completion of drilling, groundwater monitoring wells were installed in BH1M, BH2M and BH3M within Site 3 and BH7M, BH8M and BH9M within Site 5 as shown in **Table 3-2** below, with well installation records presented in the borehole logs in **Appendix A**. Following installation, each well was bailed with hand bailer methods to develop the wells.

Table 3-2 Well Installation Depths

Borehole ID	Surface RL (m AHD)	Well Termination Depth (m) *[RL] [m AHD]*	Screen Interval Depth (m) *[RL] [mAHD]*	Screen Material
BH1M	63.7	8.2 *[55.5]*	5.2 – 8.2 *[58.3 – 55.3]*	EW-HW Shale
BH2M	62.7	7.0 *[55.7]*	4.0 – 7.0 *[58.7 – 55.7]*	EW-HW Shale
BH3M	57.5	7.0 *[50.5]*	4.0 – 7.0 *[53.5– 50.5]*	EW-MW-SW Shale
BH7M	55.9	12.0 *[43.9]*	6.0 – 12.0 *[49.9 – 43.9]*	EW-MW-HW Shale
BH8M	57.5	9.5 *[48.0]*	6.5 – 9.5 *[51.0– 48.0]*	HW-SW Shale
BH9M	58.5	10.0 *[48.5]*	7.0 – 10.0 *[51.5 – 48.5]*	FR Sandstone and Shale

EI revisited the site on 2 October 2025 to carry out measurement of groundwater levels in the boreholes as shown in **Table 3-3** below.

Table 3-3 Groundwater Measurements within the Monitoring Wells

Borehole ID	Surface RL (m AHD)	Stick Up+/Down-(m)	Groundwater Levels		
			Measurement Date	m BEGL	RL (m AHD)
BH1M	63.7	- 0.1	12/12/2025	5.84	57.86
BH2M	62.7	- 0.17	12/12/2025	Dry up to 7.0	Dry up to RL 55.7
BH3M	57.5	- 0.1	12/12/2025	5.94	51.56
BH7M	55.9	+ 0.2	12/12/2025	4.16	51.74
BH8M	57.5	+ 0.55	12/12/2025	3.45	54.05
BH9M	58.5	+ 0.67	12/12/2025	5.82	57.68

3.3 Laboratory Testing

Four soil and twenty-four rock core samples were selected for laboratory testing to assess the following:

- Atterberg Limits and Linear Shrinkage.
- Soil aggressivity (pH, chloride and sulfate content and electrical conductivity).
- Point Load Strength Index.

A summary of the test results is provided in **Table 3-4** and **Table 3-5** below. Laboratory test certificates are presented in **Appendix B**.

3.3.1 Atterberg Limits and Linear Shrinkage

A summary of the Atterberg Limits and Linear Shrinkage test results is provided in **Table 3-4** below.

Table 3-4 Summary of Atterberg Limits and Linear Shrinkage Results

Test / Sample ID	BH7M_4.5-4.95	BH9M_3.0-4.95
Unit	2 Residual Soil	2 Residual Soil
Material	Silty CLAY	Silty CLAY
Atterberg Limits		
Moisture Content (%)	12.9	15.9
Liquid Limit (%)	46	32
Plastic Limit (%)	18	14
Plasticity Index (%)	28	16
Linear Shrinkage (%)	10	7.5

The results of the Atterberg Limits testing on select fine-grained sample collected from borehole BH7M and BH9M indicated the following soil types in accordance with Table 10 and Figure 5 of AS1726:2017:

- Residual (4.5 m to 4.95 m) – Silty Clay (CH), low plasticity
- Residual (3.0 m to 4.95 m) – Silty Clay (CH), medium plasticity

3.3.2 Soil Aggressivity

A summary of the suite of soil aggressivity testing results is provided in **Table 3-5** below.

Table 3-5 Summary of Soil Aggressivity Results

Test / Sample ID	BH7M_4.5-4.95	BH9M_3.0-3.45
Unit	2 Residual Soil	2 Residual Soil
Material	Silty CLAY	Silty CLAY
Soil Aggressivity		
Chloride Cl (ppm)	590	940
Sulfate SO_4 (ppm)	370	170
pH	5.1	7.4
Electrical Conductivity (µS/cm)	590	800
Moisture Content (%)	21.1	14.5

In accordance with Tables 6.4.2(C) and 6.5.2(C) of AS 2159:2009 '*Piling – Design and Installation*', the results of the pH, chloride and sulfate content and electrical conductivity of the soil provided the following exposure classifications:

- Assumed 'Exposure Condition B' (low permeability soils, varied groundwater conditions);
- 'Non-aggressive' to 'Mild' for buried concrete structural elements;
- 'Mild' for buried steel structural elements.

3.3.3 Point Load Strength Index

Sixty one (61) selected rock core samples were tested to assess the Point Load Strength Index (Is_{50}) values to assist with rock strength assessment. Generally, the point load strength index tests correlated reasonably well with our field assessments of the rock strength.

The results of the testing are presented in the laboratory test reports in **Appendix B** and are reproduced on the attached borehole logs in **Appendix A**.

4. Geotechnical Model

4.1 Geotechnical Units

Rock mass classification (RMC), in accordance with Table 1a of Pells et al (1998) "*Foundations on Sandstone and Shale in the Sydney Region*", Australian Geomechanics Journal, Dec 1998, was applied to the sandstone rock cores collected by EI.

Based on the results of the intrusive investigations, in situ testing, and geotechnical laboratory testing, a summary of the adopted geotechnical units and rock mass classification for the site are shown in **Table 4-1** below.

A summary of the depth and elevation of the geotechnical units at each borehole is provided in **Table 4-2** below.

Table 4-1 Summary of Adopted Geotechnical Units & Rock Mass Classification

Unit	Unit Name	RMC [1]	Identified Locations
1	Fill	N/A	All
2	Residual Soil	N/A	BH5, BH7M, BH8M BH9M and BH10
3	XW-HW Shale	Class V Shale	All
4	HW-MW Shale	Class IV Shale	BH2M, BH3M, BH7M, BH8M
5	SW-FR Shale	Class III Shale	BH1M, BH3M, BH7M, BH8M
6	SW-FR Sandstone	Class III/II Sandstone, and Class III/II Shale	BH7M, BH8M, BH9M and BH10

Note 1 Rock mass classification based on Pells et al (1998), *'Table 1a Classification for sandstone*

Table 4-2 Depths and Elevation to Top of Units in Boreholes

Unit	Material	Depth (m BEGL) *Elevation RL [m AHD]*									
		Site 3			Site 4			Site 5			
		BH1M	BH2M	BH3M	BH4	BH5	BH6	BH7M	BH8M	BH9M	BH10
1	FILL	0.0 [63.5]	0.0 [62.7]	0.0 [57.5]	0.0 *[58.5]*	0.0 *[56.2]*	0.0 *[54.5]*	0.0 *[55.9]*	0.0 *[57.5]*	0.0 *[58.2]*	0.0 [59.4]
2	RESIDUAL SOIL	- [1]	- [1]	- [1]	- [1]	2.0 [54.2]	- [1]	3.0 [52.9]	1.5 [56.0]	3.0 [55.2]	1.0 [58.4]
3	CLASS V SHALE	1.6 [62.1]	2.0 [60.7]	1.0 [56.5]	*1.2 [57.3]*	3.0 [53.2]	3.0 [51.5]	5.0 [50.9]	2.5 [55.0]	5.2 [53.0]	5.32[54.08]
4	CLASS IV SHALE	- [1]	6.45 [56.25]	4.7 [52.8]	- [1]	- [1]	- [1]	7.0 [48.9]	4.45 [53.0]	- [1]	- [1]
5	CLASS III SHALE	8.2 [55.5]	- [1]	6.25 [51.25]	- [1]	- [1]	- [1]	12.0 [43.9]	6.7 [50.8]		
6	CLASS III/II SANDSTONE, AND CLASS III/II SHALE	- [1]	- [1]	- [1]	- [1]	- [1]	- [1]	15.9 [40.0]	9.4 [48.1]	6.3 [51.9]	9.0 [50.4]

Note 1 Not encountered.

4.2 Geotechnical Design Parameters

Based on the result of the geotechnical investigation presented in **Section 2** and **Section 3**, and the geotechnical model presented in **Table 4-1** above, the adopted geotechnical design parameters for the site are indicated in below.

Table 4-3 Geotechnical Design Parameters

Material [1]		Unit 1 FILL	Unit 2 RESIDUAL SOIL	Unit 3 CLASS V SHALE	Unit 4 CLASS IV SHALE	Unit 5 Class III SHALE	Unit 6 Unit III/II SAND-STONE
Bulk Unit Weight (kN/m^3)		18	18	24	24	24	24
Friction Angle, ϕ' (°)		25	25	30	30	35	50
Effective Cohesion, c' (kPa)		-	20	50	90	150	300
Young's Modulus, E' (MPa)		5	10	75	110	300	1000
Poisson's Ratio		0.4	0.4	0.3	0.3	0.25	0.25
Earth Pressures [2]	At rest, K_o	0.58	0.58	0.5	-	-	-
	Active, K_a	0.41	0.41	0.33	-	-	-
	Passive, K_p	2.46	2.46	3.00	-	-	-
Allowable Bearing Pressure (kPa) [4, 5]		-	100	700	1000	3500	5000
Ultimate Bearing Pressure (kPa) [4]		-	-	3000	3000	20000	40000
Ultimate Compressive Shaft Adhesion (kPa) [3, 4]		-	-	75	150	600	1500
Allowable Bond Stress (kPa) [6]		-	-	50	70	100	300
Earthquake Site Risk Classification		▪ AS 1170.4:2007 indicates earthquake subsoil of: ‣ Site 3: Class Be ‣ Site 4: Class Be ‣ Site 5: Class Ce ▪ AS 1170.4:2007 indicates the hazard factor (z) for Sydney is 0.08					

Note 1 More detailed descriptions of subsurface conditions are available on the borehole logs in **Appendix A**. Depth and elevation of the geotechnical units at each borehole is provided in **Table 4-2;**

Note 2 Earth pressures are provided on the assumption that the ground behind the retaining walls is horizontal.

Note 3 Side adhesion values given assume there is intimate contact between the pile and foundation material and should achieve a clean socket roughness category R2 or better. Design engineer to check both 'piston pull-out' and 'cone liftout' mechanics in accordance with AS4678-2002 Earth Retaining Structures.

Note 4 To adopt these parameters we have assumed that:

a. Footings have a nominal socket of at least 0.3m, into the relevant founding material;
b. For piles, there is intimate contact between the pile and foundation material (a clean socket roughness category of R2 or better);
c. Potential soil and groundwater aggressivity will be considered in the design of piles and footings;
d. Piles should be drilled in the presence of a Geotechnical Engineer prior to pile construction to verify that ground conditions meet design assumptions. Where groundwater ingress is encountered during pile excavation, concrete is to be placed as soon as possible upon completion of pile excavation. Pile excavations should be pumped dry of water prior to pouring concrete, or alternatively a tremmie system could be used;
e. The bases of all pile, pad and strip footing excavations are cleaned of loose and softened material and water is pumped out prior to placement of concrete;
f. The concrete is poured on the same day as drilling, inspection and cleaning.

Note 5 The allowable bearing pressures given above are based on serviceability criteria of settlements at the footing base/pile toe of less than or equal to 1% of the minimum footing dimension (or pile diameter).

Note 6 Anchor design values must, in accordance AS 4678, be proof tested. Further advice on retaining wall design including for anchors is provided in **Section 0** below.

5. Discussions and Recommendations

5.1 Geotechnical Considerations

Based on the results of the assessment, we consider the following to be the main geotechnical issues for the proposed development:

- Basement excavation and retention;
- Rock excavation;
- Groundwater within the depth of the excavation;
- Presence of sensitive assets (TfNSW);
- Foundation design for building loads.

5.2 Neighbouring Structures and Dilapidation Surveys

Prior to excavation and construction, we recommend that detailed dilapidation surveys be carried out on all structures and infrastructures surrounding the site that falls within the zone of influence of the excavation to allow assessment of the recommended vibration limits.

The zone of influence, often referred to as 'minimum buffer', of the excavation is defined by a distance back from the excavation perimeter of twice the total depth of the excavation.

The dilapidation reports would provide a record of existing conditions prior to commencement of the work, and should represent a fair assessment of existing conditions. The reports should be carefully reviewed prior to demolition and construction, and should be provided to the adjoining property owners upon request.

5.3 Excavation Methodology

5.3.1 Excavation Assessment

Prior to any excavation commencing, we recommend that reference be made to the Safe Work NSW Excavation Work Code of Practice, dated January 2020.

For three proposed sites, EI assumes that the proposed development will require a maximum BEL and an excavation depth of;

- Site 3: RL 54.70 m AHD and depth of approximately 10.5 m BEGL;
- Site 4: RL 54.7 m AHD and depth of approximately 2 m BEGL; and
- Site 5: RL 44.8 m AHD and depth of approximately 13 m BEGL.

Locally deeper excavations for footings, service trenches, crane pads and lifts overrun pits may be required.

Based on the borehole logs, the proposed basement excavations will therefore extend through as outlined in **Section 4**;

- Site 3: Unit 1 – Unit 5
- Site 4: Unit 1 – Unit 3
- Site 5: All Units

As such, an engineered retention system must be installed prior to excavation commencing to support the excavation. Surface/Fill materials (Unit 1) and Residual Soil (Unit 2) could be excavated using buckets of standard hydraulic excavators, particularly if fitted with 'Tiger Teeth' for excavations in hard consistency Residual Soil or weathered Class V Shale (Unit 3).

Excavation of more competent Shale and Sandstone bedrock (Units 4 to 6) will present hard or heavy ripping, or “hard rock” excavation conditions.

- Ripping would require a high capacity and heavy bulldozer for effective production; however allowance should be made for equipment wear and tear. The use of a smaller size bulldozer will result in lower productivity and higher wear and tear.
- Hydraulic rock breakers, rock saws, ripping hooks or rotary grinders could be used, though productivity would be lower and allowance should be made for increased equipment wear.

Should hard rock excavation methods be required for the excavation of the bedrock, further advice from a geotechnical engineer would be required with regard to equipment selection and the associated vibration management. See **Section 5.3.2** and **Appendix C** for initial guidance with regards to vibration limits with respect to the bulk excavation works into hard rock.

Groundwater seepage monitoring should be carried out during bulk excavation works and prior to finalising the design of a pump out facility. Outlets into the stormwater system will require Council approval.

Furthermore, any existing buried services, which run below the site, may require diversion or installation of protective measures prior to the commencement of excavation or alternatively be temporarily supported during excavation, subject to permission or other instructions from the relevant service authorities. Enquiries should also be made for further information and details, such as invert levels, on the buried services.

5.3.2 Excavation Monitoring

Consideration should be made to the impact of the proposed development upon neighbouring structures, roadways and services. Basement excavation retention systems should be designed so as to limit lateral deflections.

Contractors should also consider the following limits associated with carrying out excavation and construction activities:

- Limit lateral deflection of temporary or permanent retaining structures;
- Limit vertical settlements of ground surface at common property boundaries and services easement; and
- Limit Peak Particle Velocities (PPV) from vibrations, caused by construction equipment or excavation, experienced by any nearby structures and services.

Monitoring of deflections of retaining structures and surface settlements should be carried out by a registered surveyor at agreed points along the excavation boundaries and along existing building foundations / services / pavements and other structures located within or near the zone the excavation. Owners of existing services adjacent to the site should be consulted to assess appropriate deflection limits for their infrastructures.

Appendix C has been attached for consideration, which provides guideline levels of vibration velocity for evaluating the effects of vibration in structures, based on the *German Standard DIN 4150 – Part 3: 2016-12*. The limits presented in this standard are generally considered to be conservative. It is recommended for future excavation works carried out at the Site, a vibration monitoring plan be collated prior to any excavation works, and the implementation of vibration monitoring during the excavation works.

5.4 Groundwater Considerations

Groundwater was observed in all monitoring wells as detailed in **Table 3-2**, all of which are above the assumed BEL of Site 3 and Site 5 only. Based on the adjacent wells of BH3M and BH7M, groundwater is not expected to be encountered for Site 4. Based on the measured groundwater levels within the monitoring wells, we anticipate the groundwater to be within the bedrock profile.

We expect that some seepage inflow into the excavation may occur from within the residual soil profile, and at perched groundwater surfaces at the fill/natural soil interface and inflow paths along the soil/rock interface and through any defects within the shale bedrock (such as jointing, and bedding planes, etc.) particularly following a period of heavy rainfall. Due to the low permeability of the soil and bedrock profile, any groundwater inflows into the excavation should not have an adverse impact on the proposed development or on the neighbouring sites and should be manageable. The initial flows into the excavation may be locally high, but would be expected to decrease considerably with time as the bedding seams/joints are drained. We recommend that monitoring of seepage be implemented during the excavation works to confirm the capacity of the drainage system.

We expect that any seepage that does occur will be able to be controlled by a conventional sump and pump system. We recommend that a sump-and-pump system be used both during construction and for permanent groundwater control below the basement floor slab.

In the long term, drainage should be provided behind all basement retaining walls, around the perimeter of the basement and below the basement slab. The completed excavation should be inspected by the hydraulic engineer to confirm that adequate drainage has been allowed for. Drainage should be connected to the sump-and-pump system and discharging into the stormwater system. The permanent groundwater control system should take into account any possible soluble substances in the groundwater which may dictate whether or not groundwater can be pumped into the stormwater system.

The design of drainage and pump systems should take the above issues into account along with careful ongoing inspections and maintenance programs.

Should a drained basement be desired, additional investigations, monitoring and analysis will be required including seepage analysis, the installation of additional monitoring wells, long-term groundwater monitoring, and laboratory testing. EI should be contacted for further advice for the approval process for a drained basement.

5.5 Excavation Retention

5.5.1 Support Systems

From a geotechnical perspective, it is critical to maintain the stability of all adjacent structures and infrastructures during demolition, excavation, and construction works.

Based on the provided architectural plans, the encountered subsurface conditions and available setbacks, temporary batters are not recommended to achieve the BEL for Site 3 and Site 5.

A safe batter slope within Site 4 appears to be achievable towards the northern, western and eastern site boundary. Support prior to excavation may be required towards the southern site boundary or where a safe batter slope cannot be achieved.

Safe batter angles for Unit 1,2 and 3 are presented in **Table 5-1** below, where batters are kept above the groundwater table and where all surcharge loads, including construction loads are kept at least 2h (where ‘h’ is the batter height) away from batter crests. If steeper batters are to be used, then these must be supported by shotcrete and soil nail system designed by a suitable structural or geotechnical engineer.

Table 5-1 Batter Angles

Unit	Unit Name	Temporary Batter
1	Fill	1V:1.5H
2	Residual Soil (above groundwater level)	1V:1H
3	Class V Shale	1V:1H

Unsupported vertical cuts of the soil are not recommended for this site as these carry the risk of potential slumping/collapse especially after a period of wet weather. Slumping/Collapse of the

material may result in injury to personnel and/or damage to nearby structures/infrastructures and equipment.

A suitable retention system will be required for the support of the entire excavation depth for Site 3 and 5. For this site, EI recommends an anchored and/or propped soldier pile wall with reinforced shotcrete panels in between the piles be founded below BEL within Site 3 and Site 4. Anchors/props and reinforced shotcrete must be installed progressively as excavation proceeds. All the piles within the sites should be founded within its similar rock profile to avoid any differential settlement.

For the construction of shoring piles, bored piles are considered to be suitable for this site. Tremie pumps may be required if high initial groundwater seepage inflows to present during the drilling of the bored piles. Casing/liners may be needed if groundwater seepage cases slumping of the bored pile walls prior to concrete placement. Relatively large capacity piling rigs will be required for drilling through the higher class bedrock. The proposed pile locations should take into account the presence of buried services. Further advice should be sought from prospective piling contractors who should be provided with a copy of this report.

Working platforms may also be required. We can complete the design of the working platform, if commissioned to do so.

The relative stiffness of the wall and support system, i.e. whether it is cantilevered or propped, will also determine the design earth pressure magnitude and distribution. Additionally, the earth pressure coefficients adopted for design will also depend on the analytical tools utilised in the design. As a guide, **Table 4-3** presents general geotechnical design parameters that may be adopted for initial retaining wall design.

Retaining wall analyses will also need to consider surcharges, footing loads from adjacent buildings, existing in ground services, and hydrostatic pressure.

If drained walls are to be used then adequate permanent drainage will need to be provided behind the walls, with a water collection system that can periodically be flushed for drainage system maintenance. Even with permanent drainage, an allowance of potential water pressure build-up equivalent to one-third the wall height is recommended for design.

Anchor designs should be based on allowing effective anchorage to be developed by locating the bond length behind an 'active zone', determined by drawing a line at 45° from the base of the wall up to the ground surface behind the excavated face. The following working bond stresses presented in **Table 4-3** may be adopted for initial design of anchors with the provision that bond lengths are between 3 m to 7 m, and anchors are to be proof loaded to at least 1.5 times their design working load.

5.5.2 Excavation Adjacent to TfNSW

Based on the proposed works within Site 5, the adjacent train line (towards the south) appears to fall within the zone of influence for proposed excavation works. Therefore, reference should be made to the Transport for NSW (TfNSW) Technical Direction – Geotechnology GTD 2020/001, Version No. 01, dated on 2 July 2020, with regards to excavation/shoring adjacent to the train lines. This document outlines requirements for excavations adjacent to TfNSW infrastructure and includes the level of geotechnical investigation required, dilapidation surveying, instrumentation and monitoring during construction, trigger levels and contingency plans.

The total serviceability horizontal movement of the wall in any one direction acceptable for non-sensitive TfNSW assets is to be limited to 0.5% of the excavated height, or 30 mm, or the structural serviceability requirements of the retaining wall, whichever is the lesser. Generally the permissible movements on infrastructure assets should be clarified with TfNSW before the design.

Instrumentation (e.g. inclinometers) and monitoring is typically required where the excavation exceeds 3 m in height (for cantilevered shoring walls) or 6 m in height (for anchored or propped

shoring walls). A geotechnical monitoring plan may be required by TfNSW prior to construction for this site.

As the proposed development with Site 5 lies adjacent to TfNSW may require further assessment of the potential impact of the proposed development on their assets. In order to assess the latter, a 2D numerical model using a commercially available computer program, such as PLAXIS, will be required. This model will enable the assessment of the potential impact of the proposed development on the TfNSW assets and predict the likely movements in the shoring wall. EI can provide such a service if commissioned to do so.

5.6 Foundations

Following basement excavation to bulk excavation levels, we expect;

- **Site 3:** Class V Shale (Unit 3)**,** Class IV Shale (Unit 4) and Class III Shale (Unit 5) will be exposed at the assumed BEL of RL 54.7 m AHD;
- **Site 4:** Residual Soil (Unit 2) will be exposed at BEL of the Lower Ground level RL 54.7 m AHD, and Fill (Unit 1) at BEL of the Upper Ground level RL 57.8 m AHD;
- **Site 5:** Class IV Shale (Unit 4) towards the northern end, grading to Class III Shale (Unit 5) and Class III/II Sandstone (Unit 6) towards the south will be exposed at BEL of the Basement 03 level RL 45.9m to RL44.8m AHD.

The aggressivity of natural soils and groundwater (if encountered) should be taken into consideration in the design to assess exposure classification to steel and concrete structures.

Due to the expected high column loads of proposed structures, the proposed developments' footings are recommended to be founded within Unit 5 or better bedrock. All the footings should be founded within similar rock profile to provide uniform support and reduce the potential for differential settlements.

Where adequate bedrock is exposed at BEL, shallow pad or strip footings may be used, designed with an allowable bearing capacity of 3500 kPa in Unit 5 Shale, based on serviceability. Higher bearing capacities may be feasible in Unit 6 bedrock, however additional cored boreholes across the site must be completed to confirm the depth to this Unit.

Piles will be required where Unit 5 or better bedrock is present well below BEL. As a guide for initial design, our recommended geotechnical design parameters for piled footings are provided in **Table 4-3**. The serviceability design end bearing values are based on an assumed footing settlement criteria of up to 1% of the footing width.

For limit state design, a geotechnical reduction factor (φ_g) is to be applied to the ultimate geotechnical capacity to derive the geotechnical capacity. In AS2159, φ_g is dependent on the assignment of an Average Risk Rating (ARR) which considers various geotechnical uncertainties, redundancy of the foundation system, and construction supervision/testing. Therefore, the assessment of φ_g depends on the structural design of the foundation system as well as the design and construction method, and testing (if any) to be employed by the designer and construction contractor.

The use of limit state design also requires that serviceability performance of the foundation system be assessed, including group interaction effects. Such assessment should be carried out by experienced geotechnical professionals using well-established and soundly based methods. The modulus values given above may be adopted for initial assessments, but it should be recognised that the accuracy of settlement prediction is a function of construction methodology as well as the assessed values of material stiffness, both of which can involve uncertainty.

Bored piles are considered to be the most suitable for this site. Concrete must be poured on the same day as drilling, inspection and drilling. Where groundwater ingress is encountered during pile excavation, concrete is to be placed as soon as possible upon completion of pile excavation. Pile excavations should be pumped dry of water prior to pouring concrete, or

alternatively a tremmie system could be used. The use of a cleaning bucket is recommended to remove drill cuttings and debris from the base of pile holes prior to concrete placement. Placement of concrete from the base of the bored pile using a tremie pipe is recommended. However, relatively large capacity piling rigs will be required for drilling through the bedrock. Where considerable groundwater ingress is anticipated or where there is a risk of sidewall collapse, the use of temporary liners or permanent casing should be considered. Further advice should be sought from prospective piling contractors who should be provided with a copy of this report.

Footings founded at or near a crest of an excavation (such as at the boundary of a stepped basement) should be founded below the zone of influence of the lower basement retaining walls, which may be taken as founding below a line drawn at 1 Vertical to 1 Horizontal from the base of the retaining walls. Piles may be required. Specific geotechnical advice should be obtained for such footings taken into consideration the basement excavation and the quality of shale at the particular footing location.

Geotechnical inspections of foundations are recommended to determine that the required bearing capacity has been achieved and to determine any variations that may occur between the boreholes and inspected locations.

5.7 Basement Floor Slab

5.7.1 Site 3 and 5

Following bulk excavation for the proposed basement, bedrock is expected to be exposed at the basement floor BEL for Site 3 and Site 5.

Following the removal of all loose and softened materials, we recommend that underfloor drainage be provided and should comprise a strong, durable, single sized washed aggregate such as ‘blue metal gravel’. Joints in the concrete floor slab should be designed to accommodate shear forces but not bending moments by using dowelled and keyed joints. The basement floor slab should be isolated from columns. The completed excavation should be inspected by the hydraulic engineer to confirm the extent of the drainage required.

In addition, a system of sub-soil drains comprising a durable single sized aggregate with perforated drains/pipes leading to sumps should be provided. The basement floor slab should be isolated from columns.

Permission may need to be obtained from Council and WaterNSW for any permanent discharge of seepage into the drainage system. Given the subsurface conditions, we expect that seepage volumes would be low and within acceptable limits manageable by drainage systems. As per **Section 5.4**, further groundwater assessment will be required to inform the groundwater conditions which may have flow-on effects to the design of shoring walls, excavation dewatering requirements, etc.

5.7.2 Site 4

For Site 4, it is anticipated that BEL will overly fill, or will require filling to achieve the design FFL. Should the slab be designed as a slab on ground, then the fill used to raise surface levels should be engineered fill. Existing uncontrolled fill is to be excavated to residual soils and stockpiled separately. The exposed subgrade is to be proof-rolled with the final pass undertaken in the presence of an experienced geotechnician or geotechnical engineer, to detect any unstable or soft subgrade areas, and to allow for some further improvement in strength/compaction. Engineered fill is then placed in controlled and compacted layers. Should further advice on subgrade preparation be required, then EI should be contacted for further advice.

Alternatively, the floor slabs may be designed as fully suspended. In this case, it would be unnecessary to complete any particular subgrade preparation other than stripping of root affected soils from the footprint of the proposed building structures and replaced with surface levelling compacted fill for the floor slab formwork.

6. Further Geotechnical Inputs

Below is a summary of the recommended additional work that needs to be carried out prior to or during construction and excavation:

- Additional geotechnical investigation in the form of cored boreholes across the entire site.
- If directed by TfNSW or any other asset owners, carry out specialist engineering assessment, further geotechnical investigations, monitoring equipment installation and/or subsequent monitoring;
- Additional groundwater investigations including further groundwater wells, long-term groundwater monitoring, and groundwater seepage analysis.
- Dilapidation surveys;
- Stability assessment of temporary batters using computer modelling, if required;
- Design of working platforms (if required) for construction plant by an experienced and qualified geotechnical engineer;
- Classification of all excavated material transported off site;
- Witnessing installation of support measures and proof-testing of anchors (if required).
- Geotechnical inspections of all new footings/piles by an experienced geotechnical professional before concrete or steel are placed to verify their bearing capacity and the in-situ nature of the founding strata; and
- Ongoing monitoring of groundwater inflows into the bulk excavation;

We recommend that a meeting be held after initial structural design has been completed to confirm that our recommendations have been correctly interpreted. We also recommend a meeting at the commencement of construction to discuss the primary geotechnical issues and inspection requirements.

7. Statement of Limitations

This report has been prepared for the exclusive use of UPG Edmondson Parkland Pty Ltd who is the only intended beneficiary of EI's work. The scope of the assessment carried out for the purpose of this report is limited to those agreed with UPG Edmondson Parkland Pty Ltd.

No other party should rely on the document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

EI has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the geotechnical industry in Australia as at the date of this document. No other warranty, expressed or implied, is made or intended. Each section of this report must be read in conjunction with the whole of this report, including its appendices and attachments.

The conclusions presented in this report are based on a limited investigation of conditions, with specific sampling and test locations chosen to be as representative as possible under the given circumstances.

EI's professional opinions are reasonable and based on its professional judgment, experience, training and results from analytical data. EI may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified by EI.

EI's professional opinions contained in this document are subject to modification if additional information is obtained through further investigation, observations, or validation testing and analysis during construction. In some cases, further testing and analysis may be required, which may result in a further report with different conclusions.

We draw your attention to the document "Important Information", which is included in **Appendix D** of this report. The statements presented in this document are intended to advise you of what your realistic expectations of this report should be. The document is not intended to reduce the level of responsibility accepted by EI, but rather to ensure that all parties who may rely on this report are aware of the responsibilities each assumes in so doing.

Should you have any queries regarding this report, please do not hesitate to contact EI.

References

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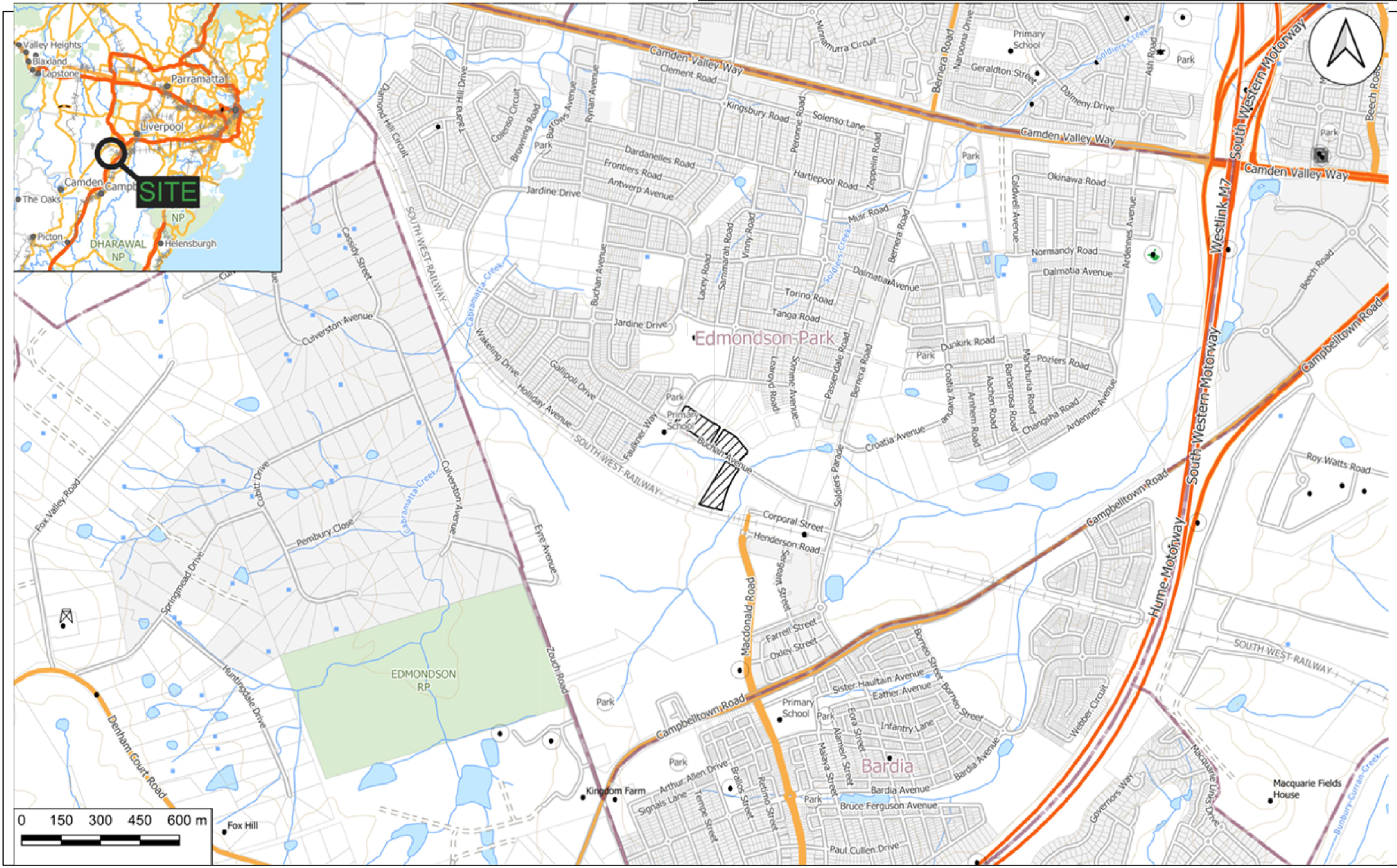
Transport for NSW (TfNSW) Technical Direction – Geotechnology GTD 2020/001, Version No. 01, dated on 2 July 2020

Abbreviations

AHD	Australian Height Datum
AS	Australian Standard
BEL	Bulk Excavation Level
BEGL	Below Existing Ground Level
BH	Borehole
BYDA	Before You Dig Australia
DP	Deposited Plan
EI	EI Australia
FFL	Finished Floor Level
GI	Geotechnical Investigation
NATA	National Association of Testing Authorities, Australia
PPV	Peak Particle Velocity
RL	Reduced Level
SPT	Standard Penetration Test
T-C	Tungsten-Carbide
TfNSW	Transport for NSW
UCS	Unconfined Compressive Strength

Figures



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Date:	30/01/2025
Scale:	Not To Scale

UPG Edmondson Parkland Pty Ltd

Geotechnical Investigation

Lot 4 to 8, Buchan Avenue, Edmondson Park

Site Locality Plan

Figure: 1

Project: E26949.G03

Map Source: Site Survey Plan prepared by SDS, Reference No. 9306, Issue A, dated 5 June 2025

LEGEND (All Locations are Approximate)

- Site boundary
- Proposed Basement boundary
- Proposed Basement B1 boundary
- Borehole location
- Borehole/monitoring well location

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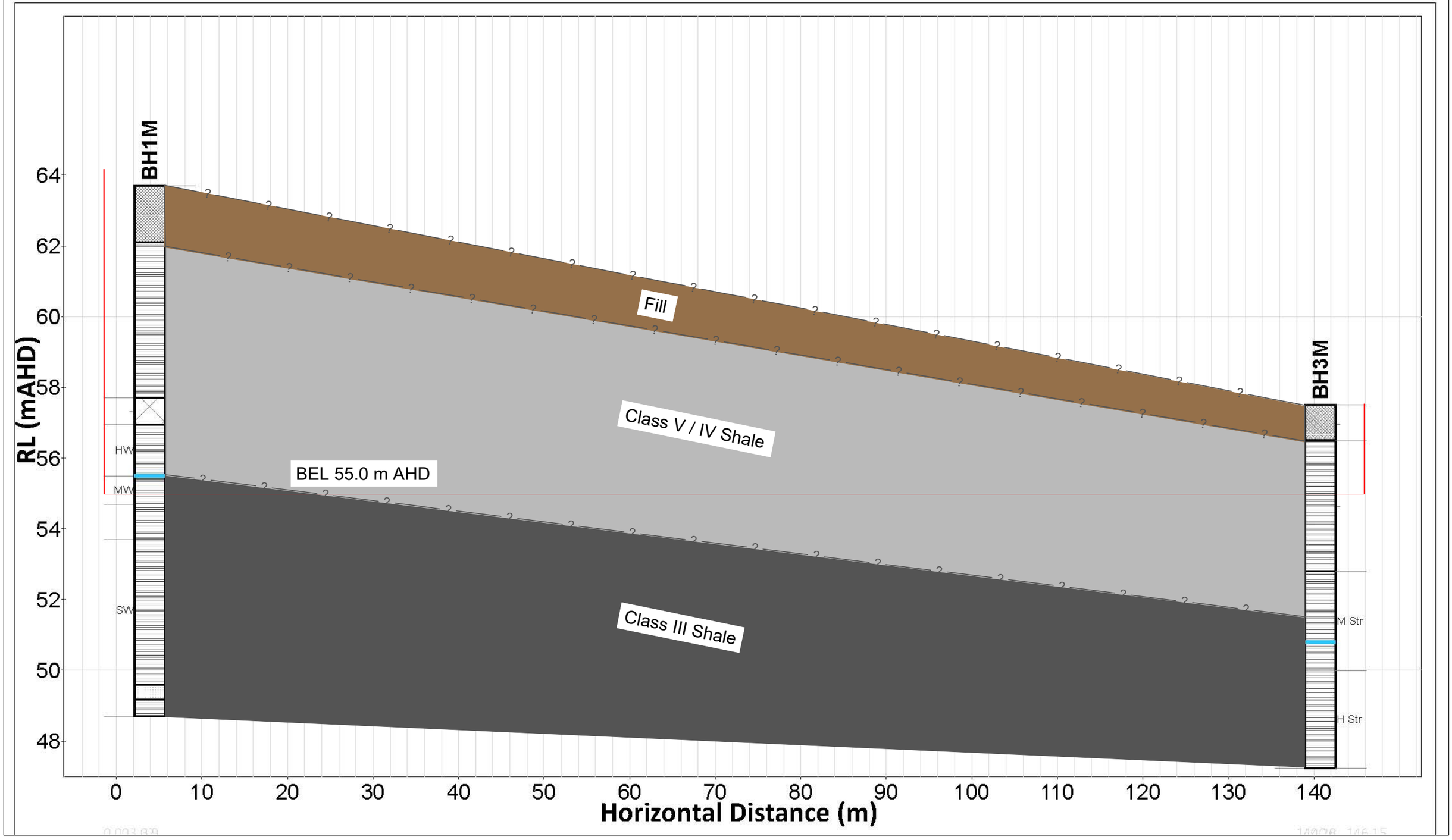
Urban Property Group
Geotecnical Investigation
Lot 3 to 8 in DP1275478

Borehole Location Plan

Figure: 2

Project: E26949.G03_Rev1



LEGEND (All Locations are Approximate)

- Approximate Excavation Boundary
- Fill
- Residual Soil
- Class V / IV Shale
- Class III Shale

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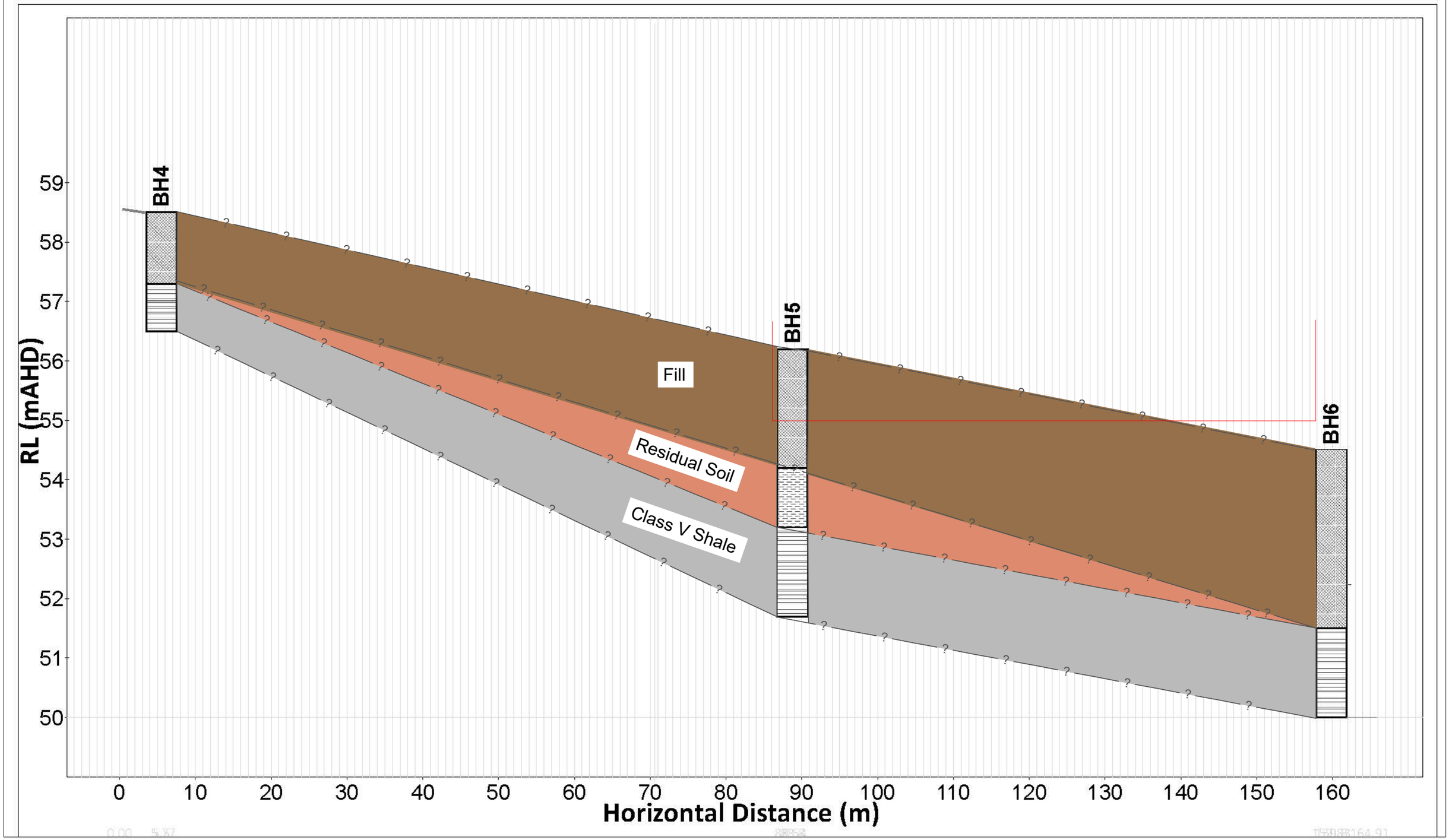
Geotechnical Investigation (Site 3)
Lot 4-5, 6-7 and 8 Buchan Avenue, Edmondson Park NSW
Geotecnical Ground Model

Figure: 3

Project: E26949.G03



LEGEND (All Locations are Approximate)

- Approximate Excavation Boundary
- Fill
- Residual Soil
- Class V / IV Shale
- Class III Shale

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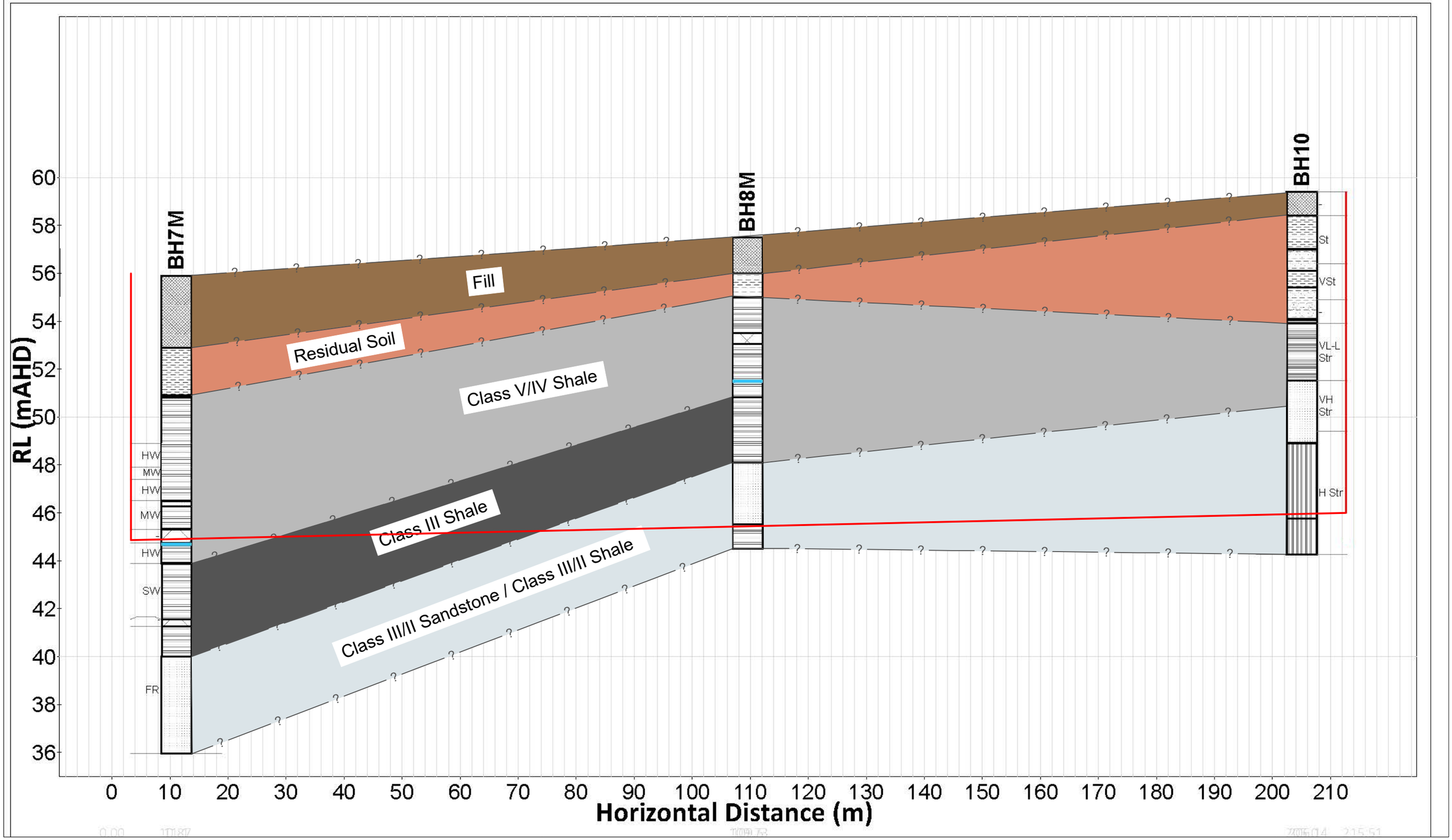
Geotechnical Investigation (Site 4)
Lot 4-5, 6-7 and 8 Buchan Avenue, Edmondson Park NSW
Geotecnical Ground Model

Figure: 3

Project: E26949.G03



LEGEND (All Locations are Approximate)

- Approximate Excavation Boundary
- Fill
- Residual Soil
- Class V / IV Shale
- Class III Shale
- Class III/II Sandstone / Class III/II Shale

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Geotechnical Investigation (Site 5)
Lot 4-5, 6-7 and 8 Buchan Avenue, Edmondson Park NSW

Geotecnical Ground Model

Figure: 3

Project: E26949.G03

Appendix A Borehole Logs And Explanatory Notes

BOREHOLE LOG

BH ID: BH1M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	02 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	02 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 02 December 2025
Sheets	1 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈63.70 m (AHD)	**Northing**	6239623.6 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301685.1 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH1M_0.50-0.95 SPT 0.50-0.95 5,7,13 N=20		0.00		63.70	FILL: Sandy CLAY: low plasticity, brown, sand is fine to medium grained, with fine grained, angular to sub-angular gravels and rootlets.			FILL
				0.30		63.40	FILL: Silty CLAY: orange mottled grey, trace angular to subangular gravels.	M < PL	-	
		BH1M_1.50-1.60 SPT 1.50-1.60 8/100 mm HB N=R		1.60		62.10	SHALE: brown, highly weathered, very low strength.			WEATHERED ROCK
				3.00		60.70	From 3.00m, grey.	-	-	
				6.00		57.70	*Log continued on next page.*			

BOREHOLE CORE LOG

BH ID: BH1M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	02 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	02 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 02 December 2025
Sheets	2 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈63.70 m (AHD)	**Northing**	6239623.6 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301685.1 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
				0			*Log continued from previous page.*				
				6			NO CORE: 750mm thick	- -			
NMLC	70%	66	0	6.75		56.95	SHALE: dark grey.	HW		6.75-7.00: CZ 7.00-7.32: FZ 7.50-8.00: XWZ Clay Bands 8.10-8.15: IS Clay	
		100	65	8.20		55.50	SHALE: dark grey, with grey sandstone laminae, bedded at 0°.	MW SW	▼	8.32: DB 8.50-9.07: Bedding planes group oriented at 2°. 9.39: JT 3-12° IR RO CN 9.65: JT 10° PR RO CN 9.77: JT 5-20° ST RO CN 9.91: JT 5-20° CU RO CN	
				10							

BOREHOLE CORE LOG

BH ID: BH1M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	02 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	02 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 02 December 2025
Sheets	3 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈63.70 m (AHD)	**Northing**	6239623.6 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301685.1 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
NMLC	70%	100	53	11			SHALE: dark grey, with grey sandstone laminae, bedded at 0°.	SW	▼ H	10.00: HB 10.10-11.50: BP 0-2° Bedding planes group oriented at 0° and 2°.	100
				12					▼ H	11.50-11.52: CS 11.57-11.79: FZ 11.91: HB 12.00: HB	
				13					▼ H	12.43: BP 1° 12.58-13.15: JT 70-90° PR RO CN 13.20-13.24: FS 13.30: JT 2-5° CU RO CN 13.32: JT 6° PR RO OP 13.36-13.38: CS 13.42-13.80: Bedding planes group oriented at 0° and 2°. 13.80-13.97: FZ	
		100	52	14							
				14.11		49.59	SANDSTONE: fine to medium grained, grey, massive.		▼ H	14.11-14.67: Bedding planes group oriented at 0° and 2°.	
				14.52		49.18	SHALE: dark grey, with grey sandstone laminae, bedded at 0°.			14.91: JT 2-8° IR RO CN 14.98: JT 2° PR RO CN	
				15		48.70	Terminated at 15.00m. Target Depth Reached.				
				16							
				17							
				18							
				19							
				20							

CORE PHOTOGRAPH OF BOREHOLE: BH1M

Project	Proposed Development	**East**	301685.081	**Depth Range**	6.0m to 15.0m		
Location	Lot 4 to 8 Buchan Avenue, Edmondson Park, NSW	**North**	6239623.591	**Contractor**	Geosense Drilling Engineers		
Position	See Figure 2	**Surface RL**	63.7 mAHD	**Drill Rig**	Comacchio Geo 205		
Job No.	E26949.G03	**Inclination**	90°	**Logged**	DC	**Date**	04 / 12 / 2025
Client	UPG Edmondson Parkland Pty Ltd	**Box**	1-2 of 2	**Checked**	SK	**Date**	29 / 01 / 2026

MONITORING WELL LOG

BH ID: BH1M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	02 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	02 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 02 December 2025
Sheets	1 of 1			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈63.70 m (AHD)	**Northing**	6239623.6 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301685.1 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
	BH1M_0.50-0.95 SPT 0.50-0.95 5,7,13 N=20	0.00	63.70	FILL: Sandy CLAY: low plasticity, brown, sand is fine to medium grained, with fine grained, angular to sub-angular gravels and rootlets.	M < PL
		0.30	63.40	FILL: Silty CLAY: orange mottled grey, trace angular to subangular gravels.	
	BH1M_1.50-1.60 SPT 1.50-1.60 8/100 mm HB N=R	1.60	62.10	SHALE: brown, highly weathered, very low strength.	
		3.00	60.70	From 3.00m, grey.	-
		6.00	57.70	NO CORE: 750mm thick	
		6.75	56.95	SHALE: dark grey.	
		8.20	55.50	SHALE: dark grey, with grey sandstone laminae, bedded at 0°.	
		14.11	49.59	SANDSTONE: fine to medium grained, grey, massive.	
		14.52	49.18	SHALE: dark grey, with grey sandstone laminae, bedded at 0°.	
		15.00	48.70	Terminated at 15.00m. Target Depth Reached.	

03/12/2025

BACKFILL DETAILS

Cuttings
0.10m - 4.30m

Bentonite
4.30m - 4.90m

Sand
4.90m - 8.20m

Bentonite
8.20m - 8.50m

Sand
8.50m - 15.00m

STANDPIPE DETAILS

Well Stickup =-0.10m
(RL 63.60m)

0.10m - 5.20m
PVC casing (50mm Ø)

5.20m - 8.20m
PVC screen (50mm Ø)

BOREHOLE LOG

BH ID: BH2M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	03 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	03 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 03 December 2025
Sheets	1 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈62.70 m (AHD)	**Northing**	6239632.0 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301778.1 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH2_0.50-0.95 SPT 0.50-0.95 5,8,11 N=19		0.00		62.70	FILL: Sandy CLAY: brown mottled orange, sand is fine to medium grained, with fine grained, angular to sub-angular gravels and rootlets.	D	-	FILL
		BH2_1.50-1.95 SPT 1.50-1.95 1,3,5 N=8		2.00		60.70	SHALE: brown, very low strength, highly weathered.			WEATHERED ROCK
		BH2_2.50-2.70		3.00		59.70	From 3.00m, grey.	-	-	
				5.30		57.40	*Log continued on next page.*			

BOREHOLE CORE LOG

BH ID: BH2M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	03 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	03 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 03 December 2025
Sheets	2 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈62.70 m (AHD)	**Northing**	6239632.0 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301778.1 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
				0			*Log continued from previous page.*				
				1							
				2							
				3							
				4							
				5							
NMLC	60%	93	10	6			SHALE: grey.	HW		5.53-6.31: CZ	
				6.31		56.39	NO CORE: 140mm thick	-			
				6.45		56.25	SHALE: grey.	MW		6.45-6.50: XWS Clay 6.52: JT 8° PR RO CN 6.76: JT 4° PR RO CN 6.79-6.82: XWS 6.97: JT 6-70° ST RO CN 7.00-7.26: FZ 7.26-7.39: XWS Clay	
				7							
		282	26	7.40		55.30	NO CORE: 290mm thick	-			
				7.69		55.01	SHALE: grey.	MW		7.74: JT 60-70° CU RO CN	
				8				HW		7.98: JT 2-5° IR RO CN 8.10-8.78: CZ	
		91	4	8.78		53.92	NO CORE: 220mm thick	-			
				9		53.70					
				9.00			SHALE: grey.	HW - MW		9.10-9.43: CZ 9.74-10.22: CZ	
				10							

BOREHOLE CORE LOG

BH ID: BH2M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	03 December 2025		
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	03 December 2025		
Job No.	E26949.G03			**Logged By**	DC	**Date**	03 December 2025
Sheets	3 of 3			**Review By**	SK	**Date**	29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈62.70 m (AHD)	**Northing**	6239632.0 (MGA 2020 Zone 56)		
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301778.1 (MGA 2020 Zone 56)		

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING
NMLC	60%	91	4			52.48	SHALE: grey.	HW - MW			
							Terminated at 10.22m. Target Depth Reached.				

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

CORE PHOTOGRAPH OF BOREHOLE: BH2M

Project	Proposed Development	**East**	301778.143	**Depth Range**	5.3m to 10.22m		
Location	Lot 4 to 8 Buchan Avenue, Edmondson Park, NSW	**North**	6239631.956	**Contractor**	Geosense Drilling Engineers		
Position	See Figure 2	**Surface RL**	62.7 mAHD	**Drill Rig**	Comacchio Geo 205		
Job No.	E26949.G03	**Inclination**	90°	**Logged**	DC	**Date**	03/ 10 / 2025
Client	UPG Edmondson Parkland Pty Ltd	**Box**	1-2 of 2	**Checked**	SK	**Date**	29 / 01 / 2026

MONITORING WELL LOG

BH ID: BH2M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	03 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	03 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 03 December 2025
Sheets	1 of 1			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈62.70 m (AHD)	**Northing**	6239632.0 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301778.1 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
08/12/2025 ▼	BH2_0.50-0.95 SPT 0.50-0.95 5,8,11 N=19 BH2_1.50-1.95 SPT 1.50-1.95 1,3,5 N=8 BH2_2.50-2.70	0.00	62.70	FILL: Sandy CLAY: brown mottled orange, sand is fine to medium grained, with fine grained, angular to sub-angular gravels and rootlets.	D
		2.00	60.70	SHALE: brown, very low strength, highly weathered.	
		3.00	59.70	From 3.00m, grey.	-
		5.30	57.40	SHALE: grey.	
		6.31	56.39	NO CORE: 140mm thick	
		6.45	56.25	SHALE: grey.	
		7.40	55.30	NO CORE: 290mm thick	
		7.69	55.01	SHALE: grey.	
		8.78	53.92	NO CORE: 220mm thick	
		9.00	53.70	SHALE: grey.	
		10.22	52.48	Terminated at 10.22m. Target Depth Reached.	

BACKFILL DETAILS

Grout
0.10m - 3.00m

Bentonite
3.00m - 3.50m

Sand
3.50m - 7.00m

Bentonite
7.00m - 7.30m

Sand
7.30m - 10.22m

STANDPIPE DETAILS

Well Stickup =-0.10m
(RL 62.60m)

0.10m - 4.0m
PVC casing (50mm Ø)

4.0m - 7.0m
PVC screen (50mm Ø)

BOREHOLE LOG

BH ID: BH3M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	03 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	03 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 03 December 2025
Sheets	1 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈57.50 m (AHD)	**Northing**	6239553.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301802.6 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE			0.00		57.50	FILL: Sandy CLAY: brown mottled orange, sand is fine to medium grained, with angular to sub-angular gravels and rootlets.	D	-	FILL
				1.00		56.50	SHALE: brown, very low strength, highly weathered.			WEATHERED ROCK
				2.50		55.00	From 2.50m, grey.	-	-	
WB				4.70		52.80	*Log continued on next page.*			

BOREHOLE CORE LOG

BH ID: BH3M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	03 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	03 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 03 December 2025
Sheets	2 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈57.50 m (AHD)	**Northing**	6239553.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301802.6 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
				0			*Log continued from previous page.*				
NMLC	80%	100	25	5			SHALE: dark grey, with sandstone laminations, bedded at 0° and 5°.	MW		4.75-5.38: Bedding planes oriented at 0°–5°.	
		100	51	6						5.39-5.55: FZ 5.56-6.25: Bedding planes oriented at 0°–5°.	
				7				SW		6.40-7.20: Bedding planes oriented at 0°–5°.	
				8						7.22-7.28: FS 7.39: BP 3° 7.42-7.47: XWS 7.51-8.82: Bedding planes oriented at 0°–5°.	
		100	80	9						8.82-8.87: FS 8.95: JT 3-5° IR RO CN 9.00: HB 9.15: BP 1°	
				10						9.82: JT 0-3° CU RO CN	

BOREHOLE CORE LOG

BH ID: BH3M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	03 December 2025		
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	03 December 2025		
Job No.	E26949.G03			**Logged By**	DC	**Date**	03 December 2025
Sheets	3 of 3			**Review By**	SK	**Date**	29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈57.50 m (AHD)	**Northing**	6239553.5 (MGA 2020 Zone 56)		
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301802.6 (MGA 2020 Zone 56)		

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral VL 0-1 / L 0-3 / M 1 / H 3 / VH 10 / EH	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING 30 / 100 / 300 / 1000 / 3000
NMLC	80%	100	80			47.23	SHALE: dark grey, with sandstone laminations, bedded at 0° and 5°.	SW		9.98: BP 3°	
							Terminated at 10.27m. Target Depth Reached.				

CORE PHOTOGRAPH OF BOREHOLE: BH3M

Project	Proposed Development	**East**	301802.598	**Depth Range**	4.7m to 10.27m		
Location	Lot 4 to 8 Buchan Avenue, Edmondson Park, NSW	**North**	6239553.484	**Contractor**	Geosense Drilling Engineers		
Position	See Figure 2	**Surface RL**	57.5 mAHD	**Drill Rig**	Comacchio Geo 205		
Job No.	E26949.G03	**Inclination**	90°	**Logged**	DC	**Date**	03 / 12 / 2025
Client	UPG Edmondson Parkland Pty Ltd	**Box**	1-2 of 2	**Checked**	SK	**Date**	29 / 01 / 2026

MONITORING WELL LOG

BH ID: BH3M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	03 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	03 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 03 December 2025
Sheets	1 of 1			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈57.50 m (AHD)	**Northing**	6239553.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301802.6 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
08/12/2025 ▼		0.00	57.50	FILL: Sandy CLAY: brown mottled orange, sand is fine to medium grained, with angular to sub-angular gravels and rootlets.	D
		1.00	56.50	SHALE: brown, very low strength, highly weathered.	
		2.50	55.00	From 2.50m, grey.	-
		4.70	52.80	SHALE: dark grey, with sandstone laminations, bedded at 0° and 5°.	
		10.27	47.23	Terminated at 10.27m. Target Depth Reached.	

BACKFILL DETAILS

- Grout 0.10m - 3.00m
- Bentonite 3.00m - 3.50m
- Sand 3.50m - 7.00m
- Bentonite 7.00m - 7.30m
- Sand 7.30m - 10.27m

STANDPIPE DETAILS

- Well Stickup =-0.10m (RL 57.40m)
- 0.10m - 4.0m PVC casing (50mm Ø)
- 4.0m - 7.0m PVC screen (50mm Ø)

BOREHOLE LOG

BH ID: BH4

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	09 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	09 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 09 December 2025
Sheets	1 of 1			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈58.50 m (AHD)	**Northing**	6239583.3 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301858.5 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH4_0.50-0.95 SPT 0.50-0.95 3,6,10 N=16		0.00		58.50	FILL: Silty CLAY: brown mottled orange, with angular to sub-angular gravels and rootlets.	M < PL	-	FILL
				1.20		57.30	SHALE: brown/ grey, very low strength, highly weathered.	-	-	WEATHERED ROCK
				2		56.50	Terminated at 2.00m. T-C Bit Refusal.			

BOREHOLE LOG

BH ID: BH5

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	09 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	09 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 09 December 2025
Sheets	1 of 1			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈56.20 m (AHD)	**Northing**	6239501.1 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301870.6 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH5_0.50-0.95 SPT 0.50-0.95 3,7,10 N=17		0.00		56.20	FILL: Silty CLAY: orange mottled brown, fine grained, angular to sub-angular gravels and rootlets.	M < PL	-	FILL
		BH5_1.50-1.95 SPT 1.50-1.95 4,5,5 N=10		2.00		54.20	Silty CLAY: low to medium plasticity, red/ orange mottled grey.			RESIDUAL SOIL
		BH5_3.00-3.08 SPT 3.00-3.08 5/80 mm HB N=R		3.00		53.20	SHALE: brown/grey, very low strength, highly weathered.	-		WEATHERED ROCK
						51.70	Terminated at 4.50m. T-C Bit Refusal.			

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

BOREHOLE LOG

BH ID: BH6

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	09 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	09 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 09 December 2025
Sheets	1 of 1			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈54.50 m (AHD)	**Northing**	6239510.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301941.4 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH6_0.50-0.95 SPT 0.50-0.95 1,2,2 N=4		0.00		54.50	FILL: Silty CLAY: orange mottled brown, fine grained, angular to sub-angular gravels and rootlets.	M < PL	-	FILL
		BH6_1.50-1.95 SPT 1.50-1.95 5,9,12 N=21		3.00		51.50	SHALE: brown/ grey, very low strength, highly weathered.	-		WEATHERED ROCK
						50.00	Terminated at 4.50m. T-C Bit Refusal.			

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

BOREHOLE LOG

BH ID: BH7M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	04 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	04 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 04 December 2025
Sheets	1 of 4			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈55.90 m (AHD)	**Northing**	6239439.6 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301906.7 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH7M_0.50-0.95 SPT 0.50-0.95 5,6,10 N=16		0.00		55.90	FILL: Sandy CLAY: brown mottled orange, sand is fine to medium grained, fine grained, angular to sub-angular gravels, plastic and rootlets.	M < PL	-	FILL
		BH7M_1.50-1.95 SPT 1.50-1.95 1,5,7 N=12		3.00		52.90	Silty CLAY: medium plasticity, orange, trace of fine grained, angular to sub-angular gravels.		St - VSt	RESIDUAL SOIL
		BH7M_3.00-3.45 SPT 3.00-3.45 4,5,9 N=14		4.00		51.90	From 4.00m, orange mottled grey.			
		BH7M_4.50-4.95 SPT 4.50-4.95 7,10,18 N=28		5.00		50.90	SHALE: brown, very low strength, highly weathered.	-	-	WEATHERED ROCK
				7.00		48.90	*Log continued on next page.*			

BOREHOLE CORE LOG

BH ID: BH7M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	04 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	04 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 04 December 2025
Sheets	2 of 4			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈55.90 m (AHD)	**Northing**	6239439.6 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301906.7 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
				0			*Log continued from previous page.*				
				1							
				2							
				3							
				4							
				5							
				6							
NMLC	80% Water	100	0	7			SHALE: brown/grey, bedded at 0°–5°.	HW		7.22-7.37: CZ 7.40-8.00: FZ	
		100	16	8				MW		8.00-8.54: Bedding planes oriented at 0°–5°.	
								HW		8.54-8.76: XWZ 8.78-9.42: FZ	
				9.40		46.50	SANDSTONE: fine to medium grained, grey.			9.42-10.00: Bedding planes oriented at 0°–5°.	
				9.64		46.26	SHALE: brown/grey, bedded at 0°–5°.	MW			
				10							

BOREHOLE CORE LOG

BH ID: BH7M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	04 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	04 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 04 December 2025
Sheets	3 of 4			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈55.90 m (AHD)	**Northing**	6239439.6 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301906.7 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
NMLC	80%	100	16	10.58		45.32	SHALE: brown/grey, bedded at 0°–5°.	MW		10.00-10.58: FZ	
				11			NO CORE: 570mm thick	-			
		63	0	11.15		44.75	SHALE: brown/ grey.	HW		11.15-11.44: XWZ 11.55-12.00: CZ	
		90	37	12.00		43.90	From 12.00m, dark grey, with sandstone laminae, bedded at 0°–5°.	SW		12.00-13.00: Bedding planes oriented at 0°–5°. 13.14-14.34: Bedding planes oriented at 0°–5°.	
				14.34		41.56	NO CORE: 290mm thick	-			
				14.63		41.27	SHALE: dark grey, with grey sandstone laminae, bedded at 0°–5°.	FR		14.63-16.25: Bedding planes oriented at 0°–5°.	
		100	66	15.90		40.00	SANDSTONE: fine to medium grained, grey, indistinctly bedded.			16.28: JT 40° PR RO CN 16.37: JT 20-30° IR RO CN 16.41: JT 2-5° IR RO CN 16.52: JT 0-10° UN RO CN 16.56: JT 0-8° UN RO CL 16.59-16.61: CS 16.80-18.15: Bedding planes oriented at 0°–5°.	
		100	67	18						18.19: JT 70° PR RO CN 18.37-19.52: BP 0-5°	
				19						19.57: JT 40-60° CU RO CN 19.77-19.95: Bedding planes oriented at 0°–5°.	
				20			~~Terminated at 19.95m. Target Depth Reached.~~				

CORE PHOTOGRAPH OF BOREHOLE: BH7M

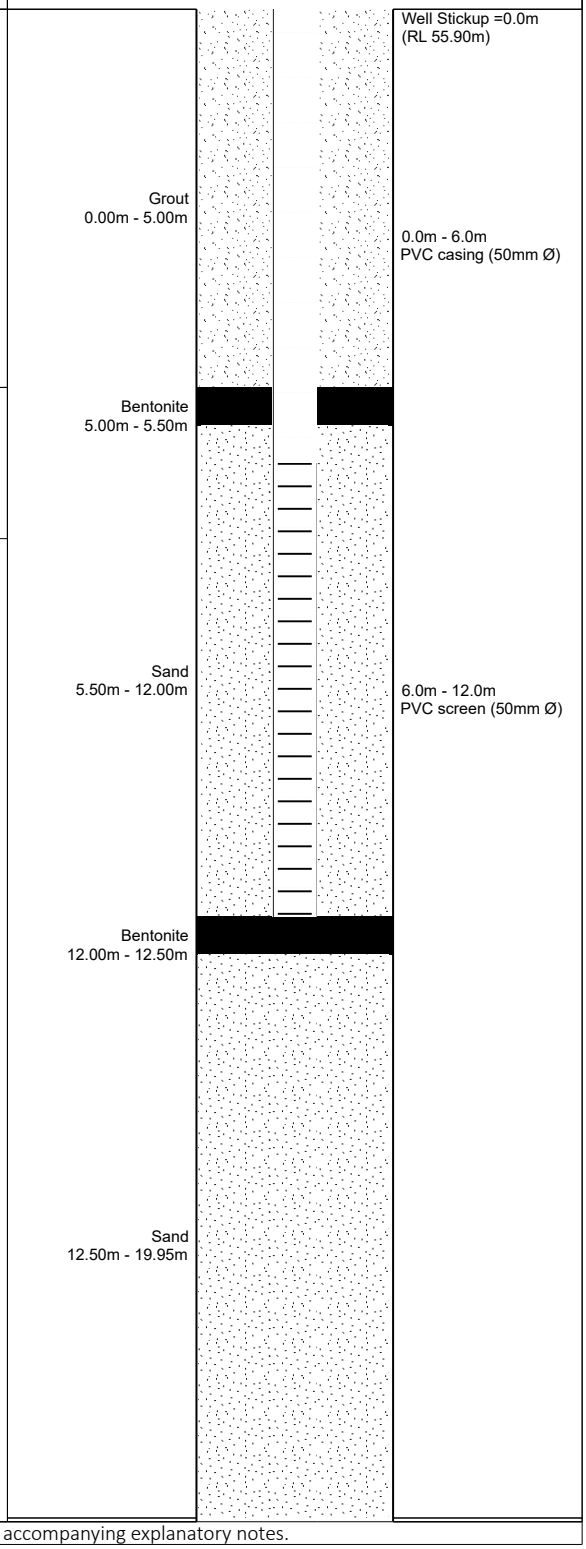
Project	Proposed Development	**East**	301906.656	**Depth Range**	7.0m to 19.95m		
Location	Lot 4 to 8 Buchan Avenue, Edmondson Park, NSW	**North**	6239439.581	**Contractor**	Geosense Drilling Engineers		
Position	See Figure 2	**Surface RL**	55.9 mAHD	**Drill Rig**	Comacchio Geo 205		
Job No.	E26949.G03	**Inclination**	90°	**Logged**	DC	**Date**	04 / 12 / 2025
Client	UPG Edmondson Parkland Pty Ltd	**Box**	1–3 of 3	**Checked**	SK	**Date**	29 / 01 / 2026

MONITORING WELL LOG

BH ID: BH7M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	04 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	04 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 04 December 2025
Sheets	1 of 2			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈55.90 m (AHD)	**Northing**	6239439.6 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301906.7 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
09/12/2025	BH7M_0.50-0.95 SPT 0.50-0.95 5,6,10 N=16	0.00	55.90	FILL: Sandy CLAY: brown mottled orange, sand is fine to medium grained, fine grained, angular to sub-angular gravels, plastic and rootlets.	M < PL
	BH7M_1.50-1.95 SPT 1.50-1.95 1,5,7 N=12				
	BH7M_3.00-3.45 SPT 3.00-3.45 4,5,9 N=14	3.00	52.90	Silty CLAY: medium plasticity, orange, trace of fine grained, angular to sub-angular gravels.	
	BH7M_4.50-4.95 SPT 4.50-4.95 7,10,18 N=28	4.00	51.90	From 4.00m, orange mottled grey.	
		5.00	50.90	SHALE: brown, very low strength, highly weathered.	-
		7.00	48.90	SHALE: brown/grey, bedded at 0°–5°.	
		9.40	46.50	SANDSTONE: fine to medium grained, grey.	
		9.64	46.26	SHALE: brown/grey, bedded at 0°–5°.	
		10.58	45.32	NO CORE: 570mm thick	
		11.15	44.75	SHALE: brown/ grey.	
		12.00	43.90	From 12.00m, dark grey, with sandstone laminae, bedded at 0°–5°.	
		14.34	41.56	NO CORE: 290mm thick	
		14.63	41.27	SHALE: dark grey, with grey sandstone laminae, bedded at 0°–5°.	
		15.90	40.00	SANDSTONE: fine to medium grained, grey, indistinctly bedded.	
		19.95		Terminated at 19.95m. Target Depth Reached.	



BACKFILL DETAILS	STANDPIPE DETAILS
Grout 0.00m - 5.00m	Well Stickup =0.0m (RL 55.90m)
Bentonite 5.00m - 5.50m	0.0m - 6.0m PVC casing (50mm Ø)
Sand 5.50m - 12.00m	6.0m - 12.0m PVC screen (50mm Ø)
Bentonite 12.00m - 12.50m	
Sand 12.50m - 19.95m	

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

BOREHOLE LOG

BH ID: BH8M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	08 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	08 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 08 December 2025
Sheets	1 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈57.50 m (AHD)	**Northing**	6239390.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301821.3 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE			0.00		57.50	FILL: Sandy CLAY: brown, sand is medium to coarse grained, with angular to sub-angular gravels and plastic.	M < PL	-	FILL
				1.50		56.00	Silty CLAY: low to medium plasticity, orange mottled grey.		St	RESIDUAL SOIL
				2.50		55.00	SHALE: brown, very low stregth, highly weathered.	-	-	WEATHERED ROCK
				4.00		53.50	*Log continued on next page.*			

BOREHOLE CORE LOG

BH ID: BH8M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	08 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	08 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 08 December 2025
Sheets	2 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈57.50 m (AHD)	**Northing**	6239390.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301821.3 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
				0			*Log continued from previous page.*				
				4			NO CORE: 450mm thick	-			
NMLC	70%	83	0	4.45		53.05	SHALE: brown/ grey.	HW - MW		4.45-4.87: XWZ Clay 4.80-5.00: JT 0-2° UN RO CN 5.00-5.18: XWZ 5.21-5.31: FZ 5.50-5.63: FZ 5.77-5.93: CZ 6.00-6.04: XWS 6.22-6.32: FZ 6.33-6.67: XWZ	
		100	24	6.67		50.83	From 6.67m, dark grey/ brown, with grey sandstone laminae, bedded at 0°-10°.	MW		6.76: JT 85° PR RO CN 6.82: JT 30-80° CU RO CN 7.14: JT 60° PR RO CN 7.21-7.28: CS 7.36-7.94: Bedding planes oriented at 0°–5°. 7.94-8.00: CS 8.08: JT 70-90° UN RO CN 8.24: JT 4° PR RO OP 8.30-8.33: CS 8.42: JT 3° PR RO CN 8.46-8.48: FS 8.52: JT 0-3° UN RO CN 8.64-8.68: CS 8.72: JT 3° PR RO CN 8.75-8.76: JT 4° PR RO OP 8.90: BP 2° 9.09: JT 10-15° IR RO CN 9.19: JT 5-7° UN RO CN 9.35-9.39: IS Clay 9.46: JT 2° PR RO CN 9.52-10.36: Bedding planes oriented at 0°–2°.	
				9.40		48.10	SANDSTONE: fine to medium grained, pale grey, indistinctly bedded at 0°-5°.	SW - FR			
				10							

BOREHOLE CORE LOG

BH ID: BH8M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	08 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	08 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 08 December 2025
Sheets	3 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈57.50 m (AHD)	**Northing**	6239390.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301821.3 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
NMLC	70%	100	72	11			SANDSTONE: fine to medium grained, pale grey, indistinctly bedded at 0°-5°.	SW - FR	▼ H	10.63-10.67: FS 10.89: JT 70° PR RO CN 10.96: BP 3° 11.00: HB 11.26: BP 2° 11.42: JT 2° PR RO OP	
				11.97		45.53	SHALE: grey, bedded at 0°–5°.		▼ H	11.78: JT 2° PR RO OP 11.97: CO 12.08: JT 3° PR RO CN 12.39: JT 3° PR RO CN 12.54-12.69: JT 3° PR RO CN 12.79: JT 0-10° CU RO CN 12.92: JT 0-5° IR RO CN	
				13		44.50	Terminated at 13.00m. Target Depth Reached.				
				14							
				15							
				16							
				17							
				18							
				19							
				20							

CORE PHOTOGRAPH OF BOREHOLE: BH8M

Project	Proposed Development	**East**	301821.331	**Depth Range**	4.0m to 13.0m		
Location	Lot 4 to 8 Buchan Avenue, Edmondson Park, NSW	**North**	6239390.491	**Contractor**	Geosense Drilling Engineers		
Position	See Figure 2	**Surface RL**	57.5 mAHD	**Drill Rig**	Comacchio Geo 205		
Job No.	E26949.G03	**Inclination**	90°	**Logged**	DC	**Date**	08/ 12 / 2025
Client	UPG Edmondson Parkland Pty Ltd	**Box**	1-2 of 2	**Checked**	SK	**Date**	29 / 01 / 2026

MONITORING WELL LOG

BH ID: BH8M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	08 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	08 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 08 December 2025
Sheets	1 of 1			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈57.50 m (AHD)	**Northing**	6239390.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301821.3 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
▼ 09/12/2025		0.00	57.50	FILL: Sandy CLAY: brown, sand is medium to coarse grained, with angular to sub-angular gravels and plastic.	M < PL
		1.50	56.00	Silty CLAY: low to medium plasticity, orange mottled grey.	
		2.50	55.00	SHALE: brown, very low stregth, highly weathered.	-
		4.00	53.50	NO CORE: 450mm thick	
		4.45	53.05	SHALE: brown/ grey.	
		6.67	50.83	From 6.67m, dark grey/ brown, with grey sandstone laminae, bedded at 0°-10°.	
		9.40	48.10	SANDSTONE: fine to medium grained, pale grey, indistinctly bedded at 0°-5°.	
		11.97	45.53	SHALE: grey, bedded at 0°–5°.	
		13.00	44.50	Terminated at 13.00m. Target Depth Reached.	

BACKFILL DETAILS	STANDPIPE DETAILS
Grout 0.00m - 5.50m	Well Stickup =0.0m (RL 57.50m)
Bentonite 5.50m - 6.00m	0.0m - 6.50m PVC casing (50mm Ø)
Sand 6.00m - 9.50m	6.50m - 9.50m PVC screen (50mm Ø)
Bentonite 9.50m - 9.80m	
Sand 9.80m - 13.00m	

BOREHOLE LOG

BH ID: BH9M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	08 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	08 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 08 December 2025
Sheets	1 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈58.20 m (AHD)	**Northing**	6239301.4 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301835.6 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH9M_0.50-0.95 SPT 0.50-0.95 6,8,11 N=19		0.00		58.20	FILL: Silty CLAY: brown, trace of fine to medium grained sand, fine to medium grained angular to sub-angular gravels, rootlets and plastic.	M < PL - M	-	FILL
		BH9M_1.50-1.95 SPT 1.50-1.95 5,6,9 N=15		1						
		BH9M_3.00-3.45 SPT 3.00-3.45 10,11,15 N=26		3.00		55.20	Silty CLAY: low to medium plasticity, orange mottled grey.	M > PL	VSt	RESIDUAL SOIL
		BH9M_4.50-4.95 SPT 4.50-4.95 6,12,16 N=28		4						
		BH9M_5.80-6.00		5.20		53.00	SHALE: brown/red, very low stregth, highly weathered.	-	-	WEATHERED ROCK
				6.30		51.90	*Log continued on next page.*			
				7						
				8						
				9						
				10						

BOREHOLE CORE LOG

BH ID: BH9M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	08 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	08 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 08 December 2025
Sheets	2 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈58.20 m (AHD)	**Northing**	6239301.4 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301835.6 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL$_{0-1}$ L$_{0-3}$ M$_1$ H$_3$ VH$_{10}$ EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30 100 300 1000 3000)
				0			*Log continued from previous page.*				
				1							
				2							
				3							
				4							
				5							
				6							
NMLC	80%	100	75	7			SANDSTONE: fine to medium grained, grey, indistinctly bedded to massive.	SW - FR	▼	6.41-6.66: JT 0-10° PR RO CN 6.70-6.75: FS 6.86-6.97: Bedding planes oriented at 0°–5°. 7.00: HB 7.19-7.52: Bedding planes oriented at 2°–5°.	
				8				FR	▼	7.83: JT 60° PR RO CN 8.00: HB 8.04: BP 3° 8.19: BP 3° 8.21: BP 10° 8.24: BP 4° 8.43: JT 3° PR RO CN 8.60: JT 5° PR RO CN 8.70-8.76: FS 8.87: JT 2-40° CU RO CN	
				9					▼	9.00: HB 9.16: CO 9.32: JT 3° PR RO CN	
		100	58	9.59		48.61	SHALE: dark grey, bedded at 0°–5°.		▼	9.59: CO 9.84: JT 2° PR RO CN	
				10							

BOREHOLE CORE LOG

BH ID: BH9M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	08 December 2025		
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	08 December 2025		
Job No.	E26949.G03			**Logged By**	DC	**Date**	08 December 2025
Sheets	3 of 3			**Review By**	SK	**Date**	29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈58.20 m (AHD)	**Northing**	6239301.4 (MGA 2020 Zone 56)		
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301835.6 (MGA 2020 Zone 56)		

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
NMLC	80%	100	58	11			SHALE: dark grey, bedded at 0°–5°.	SW		10.00: HB 10.03: BP 1° 10.20-10.22: FS 10.43: JT 2° PR RO CN 10.54-10.68: FZ	
								HW		10.76-11.00: CZ 11.00-11.02: FS	
		100	32	12				FR		11.27: JT 80-90° IR RO CN 11.45-11.49: FS 11.80: JT 4° PR RO CN 11.89: JT 0-4° IR RO CN 11.97-12.00: XWS 12.04-12.16: FZ 12.23: JT 25° UN RO CL 12.27-12.35: CS 12.39-12.94: Bedding planes oriented at 3°–5°.	
				13		45.20	Terminated at 13.00m. Target Depth Reached.				
				14							
				15							
				16							
				17							
				18							
				19							
				20							

CORE PHOTOGRAPH OF BOREHOLE: BH9M

Project	Proposed Development	**East**	301835.644	**Depth Range**	6.3m to 13.0m		
Location	Lot 4 to 8 Buchan Avenue, Edmondson Park, NSW	**North**	6239301.431	**Contractor**	Geosense Drilling Engineers		
Position	See Figure 2	**Surface RL**	58.2 mAHD	**Drill Rig**	Comacchio Geo 205		
Job No.	E26949.G03	**Inclination**	90°	**Logged**	DC	**Date**	08 / 12 / 2025
Client	UPG Edmondson Parkland Pty Ltd	**Box**	1- 2 of 2	**Checked**	SK	**Date**	29 / 01 / 2026

MONITORING WELL LOG

BH ID: BH9M

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	08 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	08 December 2025
Job No.	E26949.G03			**Logged By**	DC **Date** 08 December 2025
Sheets	1 of 1			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈58.20 m (AHD)	**Northing**	6239301.4 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301835.6 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
	BH9M_0.50-0.95 SPT 0.50-0.95 6,8,11 N=19	0.00	58.20	FILL: Silty CLAY: brown, trace of fine to medium grained sand, fine to medium grained angular to sub-angular gravels, rootlets and plastic.	M < PL - M
	BH9M_1.50-1.95 SPT 1.50-1.95 5,6,9 N=15				
	BH9M_3.00-3.45 SPT 3.00-3.45 10,11,15 N=26	3.00	55.20	Silty CLAY: low to medium plasticity, orange mottled grey.	M > PL
	BH9M_4.50-4.95 SPT 4.50-4.95 6,12,16 N=28	5.20	53.00	SHALE: brown/red, very low stregth, highly weathered.	-
	BH9M_5.80-6.00	6.30	51.90	SANDSTONE: fine to medium grained, grey, indistinctly bedded to massive.	
		9.59	48.61	SHALE: dark grey, bedded at 0°–5°.	
		13	45.20	Terminated at 13.00m. Target Depth Reached.	

BACKFILL DETAILS	STANDPIPE DETAILS
Cuttings 0.00m - 6.00m	Well Stickup =0.0m (RL 58.20m) 0.0m - 7.0m PVC casing (50mm Ø)
Bentonite 6.00m - 6.50m	
Sand 6.50m - 10.00m	7.0m - 10.0m PVC screen (50mm Ø)
Bentonite 10.00m - 10.50m	
Sand 10.50m - 13.00m	

BOREHOLE LOG

BH ID: BH10

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	10 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	10 December 2025
Job No.	E26949.G03			**Logged By**	HD **Date** 10 December 2025
Sheets	1 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈59.40 m (AHD)	**Northing**	6239306.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301776.5 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH120_0.50-0.95 SPT 0.50-0.95 7,9,10 N=19		0.00		59.40	TOPSOIL: Gravelly Silty SAND: fine to medium grained, pale brown, with fine to medium, sub-angular to sub-rounded gravels.	M	-	TOPSOIL
		BH120_1.50-1.95 SPT 1.50-1.95 4,7,9 N=16		1.00		58.40	Silty CLAY: medium plasticity, pale grey, mottled red-brown, with fine to medium, sub-rounded ironstone gravels.		St	RESIDUAL SOIL
		BH120_3.00-3.45 SPT 3.00-3.45 5,14,14 N=28		2.40		57.00	Sandy CLAY: low plasticity, pale red, with fine to medium, sub-rounded ironstone gravels.	M < PL		
				3.30		56.10	Silty CLAY: medium plasticity, pale grey, mottled red-brown, with fine to medium, sub-rounded ironstone gravels.		VSt	
		BH120_4.50-4.95 SPT 4.50-4.65 10/150 mm HB N=R		4.00		55.40	Sandy CLAY: medium plasticity, pale red, with fine to medium, sub-rounded ironstone gravels.		-	
				5.32		54.08	SHALE: pale brown.	-		WEATHERED ROCK
				5.50		53.90	*Log continued on next page.*			

BOREHOLE CORE LOG

BH ID: BH10

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	10 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	10 December 2025
Job No.	E26949.G03			**Logged By**	HD **Date** 10 December 2025
Sheets	2 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈59.40 m (AHD)	**Northing**	6239306.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301776.5 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral VL 0-1 / L 0-3 / M 1 / H 3 / VH 10 / EH	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING 30 / 100 / 300 / 1000 / 3000
				0			*Log continued from previous page.*				
				1							
				2							
				3							
				4							
				5							
NMLC	90%	100	46	6			SHALE: grey/brown.	HW			
				7							
				7.87		51.53	SANDSTONE: fine to medium grained, pale grey, indistinctly bedded to massive.	SW - FR		8.05: BP 5° 8.10-8.15: BP 5° 8.34-8.49: BP 5-15° 8.70-8.82: BP 5-15° 8.88: BP 20° 8.90-8.98: BP 5-10° 9.30-10.40: Bedding planes oriented at 0°-5°.	
		100	34	8							
				9							
		100	97	10							

BOREHOLE CORE LOG

BH ID: BH10

Location	Lot 4 to 8 Buchan Avenue, Edmonson Park NSW			**Started**	10 December 2025
Client	UPG Edmondson Parkland Pty Ltd			**Completed**	10 December 2025
Job No.	E26949.G03			**Logged By**	HD **Date** 10 December 2025
Sheets	3 of 3			**Review By**	SK **Date** 29 January 2026
Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈59.40 m (AHD)	**Northing**	6239306.5 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	301776.5 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
NMLC	90%	100	97	10.49		48.91	SANDSTONE: fine to medium grained, pale grey, indistinctly bedded to massive.	SW - FR	▼ 10.49 ▼ 10.54 ▼ 11.31-11.33 ▼ 11.50-12.01 ▼ 12.02 ▼ 12.94 ▼ 13.07-13.13 ▼ 13.23-13.31 ▼ 13.42-15.14	10.49: JT 40° PR RO CN 10.54: JT 50° PR RO CN 10.68: JT 50° PR RO CN 10.84: BP 10° CN 11.08: BP 5° 11.22: BP 5° 11.31-11.33: IS SM VN 11.35: BP 20° 11.50-12.01: Bedding planes oriented at 5°. 12.02: JT 90° PR RO CN 12.94: BP 5° 13.07-13.13: CS 13.07: BP 5° Clay VN 13.13: BP 10° 13.18: BP 15° 13.23-13.31: FS 13.23: BP 15° 13.42-15.14: Bedding planes oriented at 0°-5°.	
				11			SHALE: dark grey, interbedded pale grey fine to medium grained sandstone indistinctly bedded at 0° to 10°				
				12							
		100	90	13				FR			
				13.65		45.75	From 13.65m, dark grey, interbedded distinctly fine to medium grained sandstone bedded at 0° to 5°				
				14							
				15		44.26	Terminated at 15.14m. Target Depth Reached.				
				16							
				17							
				18							
				19							
				20							

CORE PHOTOGRAPH OF BOREHOLE: BH10

Project	Proposed Development	**East**	301776.5	**Depth Range**	5.5m to 15.14m		
Location	Lot 4 to 8 Buchan Avenue, Edmondson Park, NSW	**North**	6239306.5	**Contractor**	Geosense Drilling Engineers		
Position	See Figure 2	**Surface RL**	59.4 mAHD	**Drill Rig**	Comacchio Geo 205		
Job No.	E26949.G03	**Inclination**	90°	**Logged**	HD	**Date**	10 / 12 / 2025
Client	UPG Edmondson Parkland Pty Ltd	**Box**	1-3 of 3	**Checked**	SK	**Date**	29 / 01 / 2026

EXPLANATION OF NOTES, ABBREVIATIONS & TERMS USED ON BOREHOLE AND TEST PIT LOGS

DRILLING/EXCAVATION METHOD

HA	Hand Auger	**ADH**	Hollow Auger	**NQ**	Diamond Core - 47 mm
DT	Diatube Coring	**RT**	Rotary Tricone bit	**NMLC**	Diamond Core - 52 mm
NDD	Non-destructive digging	**RAB**	Rotary Air Blast	**HQ**	Diamond Core - 63 mm
AD*	Auger Drilling	**RC**	Reverse Circulation	**HMLC**	Diamond Core - 63 mm
***V**	V-Bit	**PT**	Push Tube	**EX**	Tracked Hydraulic Excavator
***T**	TC-Bit, e.g. AD/T	**WB**	Washbore	**HAND**	Excavated by Hand Methods

PENETRATION RESISTANCE

L	**Low Resistance**	Rapid penetration/ excavation possible with little effort from equipment used.
M	**Medium Resistance**	Penetration/ excavation possible at an acceptable rate with moderate effort from equipment used.
H	**High Resistance**	Penetration/ excavation is possible but at a slow rate and requires significant effort from equipment used.
R	**Refusal/Practical Refusal**	No further progress possible without risk of damage or unacceptable wear to equipment used.

These assessments are subjective and are dependent on many factors, including equipment power and weight, condition of excavation or drilling tools and experience of the operator.

WATER

Standing Water Level **Partial water loss**

Water Seepage **Complete Water Loss**

GWNO	GROUNDWATER NOT OBSERVED - Observation of groundwater, whether present or not, was not possible due to drilling water, surface seepage or cave-in of the borehole/ test pit.
GWNE	GROUNDWATER NOT ENCOUNTERED - Borehole/ test pit was dry soon after excavation. However, groundwater could be present in less permeable strata. Inflow may have been observed had the borehole/ test pit been left open for a longer period.

SAMPLING AND TESTING

SPT	Standard Penetration Test to AS1289.6.3.1-2004
4,7,11 N=18	4,7,11 = Blows per 150mm. N = Blows per 300mm penetration following a 150mm seating drive
30/80mm	Where practical refusal occurs, the blows and penetration for that interval are reported, N is not reported
RW	Penetration occurred under the rod weight only, N<1
HW	Penetration occurred under the hammer and rod weight only, N<1
HB	Hammer double bouncing on anvil, N is not reported
Sampling	
DS	Disturbed Sample
ES	Sample for environmental testing
BDS	Bulk disturbed Sample
GS	Gas Sample
WS	Water Sample
U50	Thin walled tube sample - number indicates nominal sample diameter in millimetres
Testing	
FP	Field Permeability test over section noted
FVS	Field Vane Shear test expressed as uncorrected shear strength (sv= peak value, sr= residual value)
PID	Photoionisation Detector reading in ppm
PM	Pressuremeter test over section noted
PP	Pocket Penetrometer test expressed as instrument reading in kPa
WPT	Water Pressure tests
DCP	Dynamic Cone Penetrometer test
CPT	Static Cone Penetration test
CPTu	Static Cone Penetration test with pore pressure (u) measurement

GEOLOGICAL BOUNDARIES

———— = Observed Boundary (position known)

– – – – – – – – – – = Observed Boundary (position approximate)

– –?– –?– –?– – = Boundary (interpreted or inferred)

ROCK CORE RECOVERY

TCR=Total Core Recovery (%)

$$= \frac{Length\ of\ core\ recovered}{Length\ of\ core\ run} \times 100$$

RQD = Rock Quality Designation (%)

$$= \frac{\sum Axial\ lengths\ of\ core > 100mm}{Length\ of\ core\ run} \times 100$$

METHOD OF SOIL DESCRIPTION USED ON BOREHOLE AND TEST PIT LOGS

	FILL		ORGANIC SOILS (OL, OH or Pt)		CLAY (CL, CI or CH)
	COUBLES or BOULDERS		SILT (ML or MH)		SAND (SP or SW)
	GRAVEL (GP or GW)	Combinations of these basic symbols may be used to indicate mixed materials such as sandy clay			

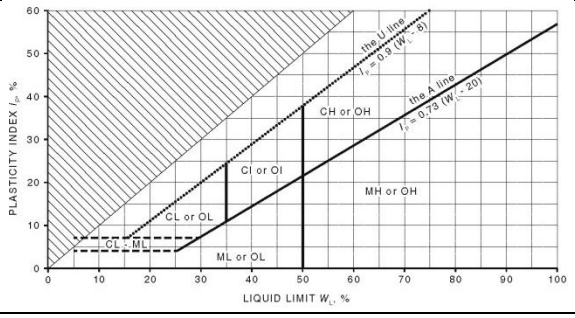
CLASSIFICATION AND INFERRED STRATIGRAPHY

Soil is broadly classified and described in Borehole and Test Pit Logs using the preferred method given in AS 1726:2017, Section 6.1 – Soil description and classification.

PARTICLE SIZE CHARACTERISTICS

Fraction	Components	Sub Division	Size mm
Oversize	BOULDERS		>200
	COBBLES		63 to 200
Coarse grained soil	GRAVEL	Coarse	19 to 63
		Medium	6.7 to 19
		Fine	2.36 to 6.7
	SAND	Coarse	0.6 to 2.36
		Medium	0.21 to 0.6
		Fine	0.075 to 0.21
Fine grained soil	SILT		0.002 to 0.075
	CLAY		<0.002

PLASTICITY PROPERTIES



GROUP SYMBOLS

Major Divisions		Symbol	Description
COARSE GRAINED SOILS More than 65% of soil excluding oversize fraction is greater than 0.075mm	GRAVEL More than 50% of coarse fraction is >2.36mm	GW	Well graded gravel and gravel-sand mixtures, little or no fines, no dry strength.
		GP	Poorly graded gravel and gravel-sand mixtures, little or no fines, no dry strength.
		GM	Silty gravel, gravel-sand-silt mixtures, zero to medium dry strength.
		GC	Clayey gravel, gravel-sand-clay mixtures, medium to high dry strength.
	SAND More than 50% of coarse fraction is <2.36 mm	SW	Well graded sand and gravelly sand, little or no fines, no dry strength.
		SP	Poorly graded sand and gravelly sand, little or no fines, no dry strength.
		SM	Silty sand, sand-silt mixtures, zero to medium dry strength.
		SC	Clayey sand, sandy-clay mixtures, medium to high dry strength.
FINE GRAINED SOILS More than 35% of soil excluding oversized fraction is less than 0.075mm	Liquid Limit less < 50%	ML	Inorganic silts of low plasticity, very fine sands, rock flour, silty or clayey fine sands, zero to medium dry strength.
		CL, CI	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, medium to high dry strength.
		OL	Organic silts and organic silty clays of low plasticity, low to medium dry strength.
	Liquid Limit > than 50%	MH	Inorganic silts of high plasticity, high to very high dry strength.
		CH	Inorganic clays of high plasticity, high to very high dry strength.
		OH	Organic clays of medium to high plasticity, medium to high dry strength.
Highly Organic soil		PT	Peat muck and other highly organic soils.

MOISTURE CONDITION

Symbol	Term	Description
D	Dry	Non- cohesive and free-running.
M	Moist	Soils feel cool, darkened in colour. Soil tends to stick together.
W	Wet	Soils feel cool, darkened in colour. Soil tends to stick together, free water forms when handling.

Moisture content of cohesive soils shall be described in relation to plastic limit (PL) or liquid limit (LL) for soils with higher moisture content as follows: Moist, dry of plastic limit (w < PL); Moist, near plastic limit (w ≈ PL); Moist, wet of plastic limit (w < PL); Wet, near liquid limit (w ≈ LL), Wet, wet of liquid limit (w > LL),

CONSISTENCY

Symbol	Term	Undrained Shear Strength (kPa)	SPT "N" #
VS	Very Soft	≤ 12	≤ 2
S	Soft	>12 to ≤ 25	>2 to ≤ 4
F	Firm	>25 to ≤ 50	>4 to 8
St	Stiff	>50 to ≤ 100	>8 to 15
VSt	Very Stiff	>100 to ≤ 200	>15 to 30
H	Hard	>200	>30
Fr	Friable	-	

DENSITY

Symbol	Term	Density Index %	SPT "N" #
VL	Very Loose	≤ 15	0 to 4
L	Loose	>15 to ≤ 35	4 to 10
MD	Medium Dense	>35 to ≤ 65	10 to 30
D	Dense	>65 to ≤ 85	30 to 50
VD	Very Dense	>85	Above 50

In the absence of test results, consistency and density may be assessed from correlations with the observed behaviour of the material.
SPT correlations are not stated in AS1726:2017, and may be subject to corrections for overburden pressure, moisture content of the soil, and equipment type.

MINOR COMPONENTS

Term	Assessment Guide	Proportion by Mass
Add 'Trace'	Presence just detectable by feel or eye but soil properties little or no different to general properties of primary component	Coarse grained soils: ≤ 5% Fine grained soil: ≤ 15%
Add 'With'	Presence easily detectable by feel or eye but soil properties little or no different to general properties of primary component	Coarse grained soils: 5 - 12% Fine grained soil: 15 - 30%
Prefix soil name	Presence easily detectable by feel or eye in conjunction with the general properties of primary component	Coarse grained soils: >12% Fine grained soil: >30%

TERMS FOR ROCK MATERIAL STRENGTH AND WEATHERING

CLASSIFICATION AND INFERRED STRATIGRAPHY

Rock is broadly classified and described in Borehole and Test Pit Logs using the preferred method given in AS1726 – 2017, Section 6.2 – Rock identification, description and classification.

ROCK MATERIAL STRENGTH CLASSIFICATION

Symbol	Term	Point Load Index, $Is_{(50)}$ (MPa) #	Field Guide
VL	Very Low	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30 mm can be broken by finger pressure.
L	Low	0.1 to 0.3	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blows of pick point; has dull sound under hammer. A piece of core 150 mm long by 50 mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
M	Medium	0.3 to 1	Readily scored with a knife; a piece of core 150 mm long by 50 mm diameter can be broken by hand with difficulty.
H	High	1 to 3	A piece of core 150 mm long by 50 mm diameter cannot be broken by hand but can be broken with pick with a single firm blow; rock rings under hammer.
VH	Very High	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
EH	Extremely High	>10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

 # Rock Strength Test Results

▼ Point Load Strength Index, $Is_{(50)}$, Axial test (MPa)

● Point Load Strength Index, $Is_{(50)}$, Diametral test (MPa)

Relationship between rock strength test result ($Is_{(50)}$) and unconfined compressive strength (UCS) will vary with rock type and strength, and should be determined on a site-specific basis. However UCS is typically 20 x $Is_{(50)}$.

ROCK MATERIAL WEATHERING CLASSIFICATION

Symbol		Term	Field Guide
RS		Residual Soil	Soil developed on extremely weathered rock; the mass structure and substance fabric are no longer evident; there is a large change in volume but the soil has not been significantly transported.
XW		Extremely Weathered	Rock is weathered to such an extent that it has soil properties - i.e. it either disintegrates or can be remoulded, in water.
DW	HW	Distinctly Weathered	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores. In some environments it is convenient to subdivide into Highly Weathered and Moderately Weathered, with the degree of alteration typically less for MW.
	MW		
SW		Slightly Weathered	Rock slightly discoloured but shows little or no change of strength relative to fresh rock.
FR		Fresh	Rock shows no sign of decomposition or staining.

ABBREVIATIONS AND DESCRIPTIONS FOR ROCK MATERIAL AND DEFECTS

CLASSIFICATION AND INFERRED STRATIGRAPHY
Rock is broadly classified and described in Borehole and Test Pit Logs using the preferred method given in AS1726 – 2017, Section 6.2 – Rock identification, description and classification.

DETAILED ROCK DEFECT SPACING

Defect Spacing

Spacing/width (mm)	Descriptor	Symbol
<20	Extremely Close	EC
20-60	Very Close	VC
60-200	Close	C
200-600	Medium	M
600-2000	Wide	W
2000-6000	Very Wide	VW

Bedding Thickness (Stratification)

Term	Spacing (mm)
Thinly laminated	<6
Laminated	6 – 20
Very thinly bedded	20 – 60
Thinly bedded	60 – 200
Medium bedded	200 – 600
Thickly bedded	600 – 2,000
Very thickly bedded	> 2,000

ABBREVIATIONS AND DESCRIPTIONS FOR DEFECT TYPES

Defect Type	Abbr.	Description
Joint	JT	Surface of a fracture or parting, formed without displacement, across which the rock has little or no tensile strength. May be closed or filled by air, water or soil or rock substance, which acts as cement.
Bedding Parting	BP	Surface of fracture or parting, across which the rock has little or no tensile strength, parallel or sub-parallel to layering/ bedding. Bedding refers to the layering or stratification of a rock, indicating orientation during deposition, resulting in planar anisotropy in the rock material.
Contact	CO	The surface between two types or ages of rock.
Sheared Surface	SSU	A near planar, curved or undulating surface which is usually smooth, polished or slickensided.
Sheared Seam/ Zone (Fault)	SS/SZ	Seam or zone with roughly parallel almost planar boundaries of rock substance cut by closely spaced (often <50 mm) parallel and usually smooth or slickensided joints or cleavage planes.
Crushed Seam/ Zone (Fault)	CS/CZ	Seam or zone composed of disoriented usually angular fragments of the host rock substance, with roughly parallel near-planar boundaries. The brecciated fragments may be of clay, silt, sand or gravel sizes or mixtures of these.
Extremely Weathered Seam/ Zone	XWS/XWZ	Seam of soil substance, often with gradational boundaries, formed by weathering of the rock material in places.
Infilled Seam	IS	Seam of soil substance, usually clay or clayey, with very distinct roughly parallel boundaries, formed by soil migrating into joint or open cavity.
Vein	VN	Distinct sheet-like body of minerals crystallised within rock through typically open-space filling or crack-seal growth.

NOTE: Defects size of <100mm SS, CS and XWS. Defects size of >100mm SZ, CZ and XWZ.

ABBREVIATIONS AND DESCRIPTIONS FOR DEFECT SHAPE AND ROUGHNESS

Shape	Abbr.	Description	Roughness	Abbr.	Description
Planar	PR	Consistent orientation	Polished	POL	Shiny smooth surface
Curved	CU	Gradual change in orientation	Slickensided	SL	Grooved or striated surface, usually polished
Undulating	UN	Wavy surface	Smooth	SM	Smooth to touch. Few or no surface irregularities
Stepped	ST	One or more well defined steps	Rough	RO	Many small surface irregularities (amplitude generally <1mm). Feels like fine to coarse sandpaper
Irregular	IR	Many sharp changes in orientation	Very Rough	VR	Many large surface irregularities, amplitude generally >1mm. Feels like very coarse sandpaper

Orientation: **Vertical Boreholes –** The dip (inclination from horizontal) of the defect.
Inclined Boreholes – The inclination is measured as the acute angle to the core axis.

ABBREVIATIONS AND DESCRIPTIONS FOR DEFECT COATING

Coating	Abbr.	Description
Clean	CN	No visible coating or infilling
Stain	SN	No visible coating but surfaces are discoloured by staining, often limonite (orange-brown)
Veneer	VNR	A visible coating of soil or mineral substance, usually too thin to measure (< 1 mm); may be patchy

DEFECT APERTURE

Aperture	Abbr.	Description
Closed	CL	Closed.
Open	OP	Without any infill material.
Infilled	-	Soil or rock i.e. clay, silt, talc, pyrite, quartz, etc.

Appendix B Laboratory Certificates

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Daniela Castro
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	daniela.castro@eiaustralia.com.au
Project	**E26949.G03, Lots 4 to 8, Buchan Avenue**
Order Number	**E26949.G03**
Samples	2

LABORATORY DETAILS

Manager	Shane McDermott
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	**SE294826 R0**
Date Received	17/12/2025
Date Reported	18/12/2025

COMMENTS

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

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

Soluble Anions (1:5) in Soil/Solids by Ion Chromatography [AN245] Tested: 18/12/2025

PARAMETER	UOM	LOR	BH7M_4.5-4.95 SOIL - 4/12/2025 SE294826.001	BH9M_3.0-3.45 SOIL - 8/12/2025 SE294826.002
Chloride	mg/kg	0.25	**590**	**940**
Sulfate	mg/kg	5	**370**	**170**

pH in soil (1:5) [AN101] Tested: 18/12/2025

PARAMETER	UOM	LOR	BH7M_4.5-4.95 SOIL - 4/12/2025 SE294826.001	BH9M_3.0-3.45 SOIL - 8/12/2025 SE294826.002
pH	pH Units	0.1	**5.1**	**7.4**

Conductivity and TDS by Calculation - Soil [AN106] Tested: 18/12/2025

PARAMETER	UOM	LOR	BH7M_4.5-4.95 SOIL - 4/12/2025 SE294826.001	BH9M_3.0-3.45 SOIL - 8/12/2025 SE294826.002
Conductivity of Extract (1:5 dry sample basis)	µS/cm	1	**590**	**800**

Moisture Content [AN002] Tested: 18/12/2025

PARAMETER	UOM	LOR	BH7M_4.5-4.95 SOIL - 4/12/2025 SE294826.001	BH9M_3.0-3.45 SOIL - 8/12/2025 SE294826.002
% Moisture	%w/w	1	**21.1**	**14.5**

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.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode and is calibrated against 3 buffers purchased commercially. For soils, sediments and sludges, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
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.
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO2, NO3 and SO4 are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B

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			
***	Indicates that both * and ** apply.		Sample listed, but not received.		
NAD	No Asbestos Detected.	NA	Not Applicable.		

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: https://www.sgs.com/en-au/industry/environmental-health-and-safety.

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Moisture Content of Soil and Aggregate Samples

Project: E26949.G03 LOT 4 TO LOT 8, BUCHAN AVENUE, EDMONDSON PARK, NSW — Project No.: 31380

Client: EI AUSTRALIA PTY LTD — Report No.: 26/0079

Address: SUITE 6.01, 55 MILLER STREET, PYRMONT NSW 2009 — Report Date: 14/01/2026

Test Method: AS 1289.2.1.1 — Page: 1 OF 1

Sampling Procedure: Samples Supplied By Client (Not covered under NATA Scope of Accreditation)

STS / Sample No.	1721E-L/1	1721E-L/2				
Sample Location	BH7M	BH9M				
Material Description	Silty CLAY, red grey, with Gravel	Silty CLAY, red grey, trace Gravel				
Depth (mm)	4.5- 4.95	3.0- 4.95				
Sample Date	2/12/2025- 11/12/2025	2/12/2025- 11/12/2025				
Moisture Content (%)	**12.9**	**15.9**				

Remarks:

Approved Signatory.....

Technician: SA — Bala Velupillai - Laboratory Supervisor

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NATA Accredited for Compliance with ISO/IEC 17025 - Testing No. 2750

Atterberg Limits and Linear Shrinkage Report

Project: E26949.G03 LOT 4 TO LOT 8, BUCHAN AVENUE, EDMONDSON PARK, NSW — Project No.: 31380

Client: EI AUSTRALIA PTY LTD — Report No.: 26/0078

Address: SUITE 6.01, 55 MILLER STREET, PYRMONT NSW 2009 — Report Date: 14/01/2026

Test Method: AS 1289.3.3.1, 3.2.1, 3.1.2, 3.4.1 — Page: 1 OF 1

Sampling Procedure: Samples Supplied By Client (Not covered under NATA Scope of Accreditation)

STS / Sample No.	1721E-L/1	1721E-L/2				
Sample Location	BH7M	BH9M				
Material Description	Silty CLAY, red grey, with Gravel	Silty CLAY, red grey, trace Gravel				
Depth (m)	4.5- 4.95	3.0- 4.95				
Sample Date	2/12/2025-11/12/2025	2/12/2025-11/12/2025				
Test Date	6/01/2026	6/01/2026				
Sample History	Oven Dried	Oven Dried				
Method of Preparation	Dry Sieved	Dry Sieved				
Liquid Limit (%)	**46**	**32**				
Plastic Limit (%)	**18**	**14**				
Plasticity Index	**28**	**18**				
Linear Shrinkage (%)	**10.0**	**7.5**				
Mould Size (mm)	127	127				
Crumbing	N	N				
Curling	N	N				
Cracking	N	N				

Remarks:

Approved Signatory..... .....

Technician: SA — Dilan Wijegunawardana - Senior Laboratory Technician

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Point Load Strength Index Report

Project: E26949.G03 LOT 4 TO LOT 8, BUCHAN AVENUE, EDMONDSON PARK,NSW
Client: EI AUSTRALIA
Address: SUITE 6.01, 55 MILLER ST. PYRMONT NSW 2009
Test Method: AS 4133.4.1
Sampling Procedure: Samples Supplied By Client (Not covered under NATA Scope of Accreditation)

Project No.: 31380/1712E-L
Report No.: 26/0015
Report Date: 05/01/2026

Borehole / Sample No.	Depth (m)	Date Sampled	Date Tested	Test Type	Is (MPa)	$Is_{(50)}$ (MPa)	Rock Type	Failure Type	Moisture
BH1M	8.30	02/12/2025	19/12/2025	A	**0.44**	**0.43**	ST/SH	3	M
BH1M	8.93	02/12/2025	19/12/2025	A	**0.73**	**0.72**	ST/SH	3	M
BH1M	9.14	02/12/2025	19/12/2025	A	**1.60**	**1.60**	ST/SH	3	M
BH1M	9.68	02/12/2025	19/12/2025	A	**1.80**	**1.80**	ST/SH	3	M
BH1M	10.51	02/12/2025	19/12/2025	A	**1.50**	**1.50**	ST/SH	3	M
BH1M	11.37	02/12/2025	19/12/2025	A	**2.30**	**2.30**	ST/SH	3	M
BH1M	13.62	02/12/2025	19/12/2025	A	**1.20**	**1.10**	ST	3	M
BH1M	14.30	02/12/2025	19/12/2025	A	**1.70**	**1.70**	ST	3	M
BH2M	6.64	03/12/2025	29/12/2025	A	**0.43**	**0.43**	ST/SH	3	M
BH2M	7.86	03/12/2025	29/12/2025	A	**0.46**	**0.46**	ST/SH	3	M
BH2M	9.10	03/12/2025	29/12/2025	A	**0.57**	**0.56**	ST/SH	3	M
BH2M	9.69	03/12/2025	29/12/2025	A	**0.4**	**0.39**	ST/SH	3	M
BH3M	4.90	04/12/2025	29/12/2025	A	**3.2**	**3.2**	ST	3	M
BH3M	5.78	04/12/2025	29/12/2025	A	**0.84**	**0.85**	ST	3	M
BH3M	6..28	04/12/2025	29/12/2025	A	**0.62**	**0.62**	ST	3	M
BH3M	7.13	04/12/2025	29/12/2025	A	**0.78**	**0.77**	ST	3	M
BH3M	7.77	04/12/2025	29/12/2025	A	**1.3**	**1.3**	ST	3	M
BH3M	8.25	04/12/2025	29/12/2025	A	**1.3**	**1.3**	ST	3	M
BH3M	8.92	04/12/2025	29/12/2025	A	**0.88**	**0.87**	ST	3	M
BH3M	9.64	04/12/2025	29/12/2025	A	**1.8**	**1.8**	ST	3	M
BH7M	8.14	04/12/2025	19/12/2025	A	**3.6**	**3.5**	SH	3	M
BH7M	9.44	04/12/2025	19/12/2025	A	**1.4**	**1.4**	SH	3	M
BH7M	12.22	04/12/2025	19/12/2025	A	**2.5**	**2.4**	SH	3	M
BH7M	12.78	04/12/2025	19/12/2025	A	**0.98**	**1**	SH	3	M
BH7M	13.86	04/12/2025	19/12/2025	A	**1.2**	**1.2**	SH	3	M
BH7M	15.26	04/12/2025	19/12/2025	A	**1.7**	**1.7**	SH	3	M

Failure Type	Test Type	Moisure Condition	Rock Type
1 = Fracture through bedding or weak plane	A = Axial	W = Wet	SS = Sandstone
2 = Fracture along bedding	D = Diametrial	M = Moist	ST = Siltstone
3 = Fracture through rock mass	I = Irregular	D = Dry	SH = Shale
4 = Fracture influenced by natural defect or drilling	C = Cube		YS = Claystone
5 = Partial fracture or chip (invalid result)			IG = Igneous

Remarks:

Approved Signatory.....

Technician: NL

Mrigesh Tamang - Manager

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Point Load Strength Index Report

Project: E26949.G03 LOT 4 TO LOT 8, BUCHAN AVENUE, EDMONDSON PARK,NSW
Client: EI AUSTRALIA
Address: SUITE 6.01, 55 MILLER ST. PYRMONT NSW 2009
Test Method: AS 4133.4.1
Sampling Procedure: Samples Supplied By Client (Not covered under NATA Scope of Accreditation)

Project No.: 31380/1712E-L
Report No.: 26/0015
Report Date: 05/01/2026

Borehole / Sample No.	Depth (m)	Date Sampled	Date Tested	Test Type	Is (MPa)	$Is_{(50)}$ (MPa)	Rock Type	Failure Type	Moisture
BH7M	16.45	04/12/2025	19/12/2025	A	**0.84**	**0.86**	SH	3	M
BH7M	16.87	04/12/2025	19/12/2025	A	**4.60**	**4.60**	SH	3	M
BH7M	18.46	04/12/2025	19/12/2025	A	**4.00**	**3.90**	SH	3	M
BH7M	19.72	04/12/2025	19/12/2025	A	**2.80**	**2.80**	SH	3	M
BH8M	4.88	08/12/2025	29/12/2025	A	**1.40**	**1.40**	SH	3	M
BH8M	5.65	08/12/2025	29/12/2025	A	**0.38**	**0.38**	SH	3	M
BH8M	6.11	08/12/2025	29/12/2025	A	**0.91**	**0.90**	SH	3	M
BH8M	6.91	08/12/2025	29/12/2025	A	**1.10**	**1.10**	SH/ST	3	M
BH8M	7.59	08/12/2025	29/12/2025	A	**0.55**	**0.55**	SH/ST	3	M
BH8M	8.61	08/12/2025	29/12/2025	A	**1.50**	**1.50**	ST	3	M
BH8M	9.18	08/12/2025	29/12/2025	A	**1.6**	**1.6**	ST	3	M
BH8M	9.82	08/12/2025	29/12/2025	A	**4.4**	**4.5**	ST	3	M
BH8M	10.44	08/12/2025	29/12/2025	A	**4**	**3.9**	ST	3	M
BH8M	11.75	08/12/2025	29/12/2025	A	**3.2**	**3.2**	ST	3	M
BH8M	12.06	08/12/2025	29/12/2025	A	**2.6**	**2.5**	ST	3	M
BH8M	12.83	08/12/2025	29/12/2025	A	**1.8**	**1.8**	ST	3	M
BH9M	6.38	08/12/2025	29/12/2025	A	**2.9**	**3**	ST	3	M
BH9M	7.54	08/12/2025	29/12/2025	A	**4.5**	**4.6**	ST	3	M
BH9M	8.25	08/12/2025	29/12/2025	A	**4.6**	**4.6**	ST	3	M
BH9M	8.93	08/12/2025	29/12/2025	A	**4.7**	**4.8**	ST	3	M
BH9M	9.05	08/12/2025	29/12/2025	A	**4.6**	**4.6**	ST	3	M
BH9M	9.68	08/12/2025	29/12/2025	A	**2.2**	**2.2**	ST	3	M
BH9M	10.33	08/12/2025	29/12/2025	A	**2.6**	**2.6**	ST	3	M
BH9M	11.70	08/12/2025	29/12/2025	A	**2.6**	**2.6**	ST	3	M
BH9M	12.81	08/12/2025	29/12/2025	A	**1.9**	**1.9**	ST	3	M

Failure Type
1 = Fracture through bedding or weak plane
2 = Fracture along bedding
3 = Fracture through rock mass
4 = Fracture influenced by natural defect or drilling
5 = Partial fracture or chip (invalid result)

Test Type
A = Axial
D = Diametrial
I = Irregular
C = Cube

Moisure Condition
W = Wet
M = Moist
D = Dry

Rock Type
SS = Sandstone
ST = Siltstone
SH = Shale
YS = Claystone
IG = Igneous

Remarks:

Approved Signatory.....

Technician: NL

Mrigesh Tamang - Manager

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Point Load Strength Index Report

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Client: EI AUSTRALIA
Address: SUITE 6.01, 55 MILLER ST. PYRMONT NSW 2009
Test Method: AS 4133.4.1
Sampling Procedure: Samples Supplied By Client (Not covered under NATA Scope of Accreditation)

Project No.: 31380/1712E-L
Report No.: 26/0015
Report Date: 05/01/2026

Borehole / Sample No.	Depth (m)	Date Sampled	Date Tested	Test Type	Is (MPa)	$Is_{(50)}$ (MPa)	Rock Type	Failure Type	Moisture
BH10	8.25	10/12/2025	29/12/2025	A	**3.20**	**3.20**	ST	3	M
BH10	8.62	10/12/2025	29/12/2025	A	**3.90**	**3.90**	ST	3	M
BH10	9.19	10/12/2025	29/12/2025	A	**4.70**	**4.80**	ST	3	M
BH10	9.66	10/12/2025	29/12/2025	A	**4.60**	**4.60**	ST	3	M
BH10	10.48	10/12/2025	29/12/2025	A	**2.00**	**2.00**	ST	3	M
BH10	10.63	10/12/2025	29/12/2025	A	**2.10**	**2.20**	ST	3	M
BH10	11.40	10/12/2025	29/12/2025	A	**0.84**	**0.83**	ST	3	M
BH10	12.27	10/12/2025	29/12/2025	A	**1.20**	**1.20**	ST	3	M
BH10	13.57	10/12/2025	29/12/2025	A	**2.70**	**2.70**	ST	3	M
BH10	14.37	10/12/2025	29/12/2025	A	**2.30**	**2.30**	ST	3	M
BH10	15.12	10/12/2025	29/12/2025	A	**3.90**	**3.90**	ST	3	M

Failure Type
1 = Fracture through bedding or weak plane
2 = Fracture along bedding
3 = Fracture through rock mass
4 = Fracture influenced by natural defect or drilling
5 = Partial fracture or chip (invalid result)

Test Type
A = Axial
D = Diametrial
I = Irregular
C = Cube

Moisure Condition
W = Wet
M = Moist
D = Dry

Rock Type
SS = Sandstone
ST = Siltstone
SH = Shale
YS = Claystone
IG = Igneous

Remarks:

Approved Signatory.....

Technician: NL

Mrigesh Tamang - Manager

Appendix C Vibration Limits

German Standard DIN 4150 – Part 3: 2016-12 provides guideline levels of vibration velocity for evaluating the effects of vibration in structures. The limits presented in this standard are generally considered to be conservative.

The DIN 4150 values (maximum levels measured in any direction at the foundation, OR, maximum levels measured in (x) or (y) directions, in the plane of the uppermost floor), are summarised in **Table A** below.

It should be noted that peak vibration velocities higher than the minimum figures in Table A for low frequencies may be quite 'safe', depending on the frequency content of the vibration and the actual conditions of the structures.

It should also be noted that these levels are 'safe limits', up to which no damage due to vibration effects has been observed for the particular class of building. 'Damage' is defined by DIN 4150 to include even minor non-structural cracking in cement render, the enlargement of cracks already present, and the separation of partitions or intermediate walls from load bearing walls. Should damage be observed at vibration levels lower than the 'safe limits', then it may be attributed to other causes. DIN 4150 also states that when vibration levels higher than the 'safe limits' are present, it does not necessarily follow that damage will occur. Values given are only a broad guide.

Table A DIN 4150 – Structural Damage – Safe Limits for Building Vibration

Group	Type of Structure	Peak Vibration Velocity (mm/s)			
		At Foundation Level at a Frequency of:			Plane of Floor of Uppermost Storey
		Less than 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz	All Frequencies
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Group 1 and 2 and have intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

Note: For frequencies above 100 Hz, the higher values in the 50 Hz to 100 Hz column should be used.

Appendix D Important Information

Important Information

SCOPE OF SERVICES

The geotechnical report ("the report") has been prepared in accordance with the scope of services as set out in the contract, or as otherwise agreed, between the Client And EI Australia ("EI"). The scope of work may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

RELIANCE ON DATA

EI has relied on data provided by the Client and other individuals and organizations, to prepare the report. Such data may include surveys, analyses, designs, maps and plans. EI has not verified the accuracy or completeness of the data except as stated in the report. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations ("conclusions") are based in whole or part on the data, EI will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to EI.

GEOTECHNICAL ENGINEERING

Geotechnical engineering is based extensively on judgment and opinion. It is far less exact than other engineering disciplines. Geotechnical engineering reports are prepared for a specific client, for a specific project and to meet specific needs, and may not be adequate for other clients or other purposes (e.g. a report prepared for a consulting civil engineer may not be adequate for a construction contractor). The report should not be used for other than its intended purpose without seeking additional geotechnical advice. Also, unless further geotechnical advice is obtained, the report cannot be used where the nature and/or details of the proposed development are changed.

LIMITATIONS OF SITE INVESTIGATION

The investigation programme undertaken is a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions. The data derived from the site investigation programme and subsequent laboratory testing are extrapolated across the site to form an inferred geological model, and an engineering opinion is rendered about overall subsurface conditions and their likely behaviour with regard to the proposed development. Despite investigation, the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies. The engineering logs are the subjective interpretation of subsurface conditions at a particular location and time, made by trained personnel. The actual interface between materials may be more gradual or abrupt than a report indicates.

SUBSURFACE CONDITIONS ARE TIME DEPENDENT

Subsurface conditions can be modified by changing natural forces or man-made influences. The report is based on conditions that existed at the time of subsurface exploration. Construction operations adjacent to the site, and natural events such as floods, or ground water fluctuations, may also affect subsurface conditions, and thus the continuing adequacy of a geotechnical report. EI should be kept appraised of any such events, and should be consulted to determine if any additional tests are necessary.

VERIFICATION OF SITE CONDITIONS

Where ground conditions encountered at the site differ significantly from those anticipated in the report, either due to natural variability of subsurface conditions or construction activities, it is a condition of the report that EI be notified of any variations and be provided with an opportunity to review the recommendations of this report. Recognition of change of soil and rock conditions requires experience and it is recommended that a suitably experienced geotechnical engineer be engaged to visit the site with sufficient frequency to detect if conditions have changed significantly.

REPRODUCTION OF REPORTS

 Where information from the accompanying report is to be included in contract documents or engineering specification for the project, the entire report should be included in order to minimize the likelihood of misinterpretation from logs.

REPORT FOR BENEFIT OF CLIENT

The report has been prepared for the benefit of the Client and no other party. EI assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of EI or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.

OTHER LIMITATIONS

EI will not be liable to update or revise the report to take into account any events or emergent circumstances or fact occurring or becoming apparent after the date of the report.