ELITE GEOSCIENCES

PROPOSED RESIDENTIAL REDEVELOPMENT (SSD-78669234)

GEOTECHNICAL INVESTIGATION REPORT

27-29 TRYON ROAD LINDFIELD

4 February 2025

Prepared for:
Bridgestone Projects

Project Number:
2025002

Document History

Version	Effective Date	Description of Revision	Prepared by	Approved by
0	04/02/2025	Final	AS	TH

The conclusions in the Report are Elite Geosciences (EG)'s professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which EG was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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I (Terence Huang), confirm this report addresses the requirement of SEAR No. 12 (SSD-78669234) and relevant State and local legislation, policies, and guidelines. I further confirm that none of the information contained in the Geotechnical Investigation Report is false or misleading.

Prepared and Approved by:

Signature

Terence Huang

Printed Name

Principal Geotechnical Engineer

BEng (Hons) & MEngSC (Geo), MIEAUST, CPEng, NER 3243905

NSW PDP0001079, DEP0003150, PRE0001948

Qualifications

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1 Introduction

Elite Geosciences Pty Ltd (EG) was commissioned by Bridgestone Projects Pty Ltd ("the client") to carry out a geotechnical investigation at the nominated site, known as 27 – 29 Tryon Road, Lindfield NSW 2070.

This geotechnical report is based on the field investigation carried on between 13 and 15 May 2024 by Stantec Australia and between 23 and 24 January 2025 by EG. The purpose of this investigation was to assess the subsurface conditions in order to provide recommendations from a geotechnical viewpoint for the design and construction of the proposed residential redevelopment.

This report presents results of geotechnical investigation, interpretation, geotechnical assessment, and provides comments and recommendation on geotechnical related issues for the proposed development.

This report accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act), in support of a State Significant Development Application (SSDA) for the construction of the proposed residential flat building, reference SSD-78669234. This report addresses the Secretary's Environmental Assessment Requirements (SEARs) issued for the project, notably:

SEAR Requirement	Section of Report where response is provided
Item 12 Ground and Groundwater Conditions – Geotechnical Assessment - Assess potential impacts on soil resources and related infrastructure and riparian lands on and near the site and including soil erosion.	*Sections 2-4 of this report*

1.1 AVAILABLE INFORMATION

At the time of preparation of this report, the following information was available:

- Site Survey Plan, prepared by Rygate & Company Pty Ltd, dated 9 April 2024.
- Architecture Plan, prepared by PTW Architects.

1.2 PROPOSED DEVELOPMENT

The proposed development is the demolition of existing structures and the construction of a 9-storey residential flat building with in-fill affordable housing and associated works. The proposal will include:

- Demolition of existing structures and site preparation / earthworks;
- Construction of 4 basement levels with vehicular access via Tryon Lane. It is expected that the FFL will be at about RL80.7m, of up to 12.9m depths of excavation bgl.
- Construction of a 9 storey residential flat building across 4 apartment blocks, including a mix of 1, 2 and 3 bedroom apartments; and 14 affordable units;
- Communal open spaces on the ground floor and roof terrace; and
- Landscape works including tree replacement.

2 Findings of Investigation

2.1 GEOLOGICAL AND LANDSCAPE CONDITIONS

The Sydney 1:100,000 Geological Series Sheet -1983 indicates that the site is underlain by Ashfield Shale (Twia) of Wianamatta Group from Middle Triassic period of Mesozoic era with the lithology of black to dark-grey shale and laminate overlying Hawkesbury Sandstone. Hawkesbury Sandstone was recorded at both East and West to the site. It is known to be from middle Triassic period of Mesozoic era with lithology of medium to coarse-grained quartz sandstone, very minor shale and laminate lenses. It is also provided in Appendix A.

The Sydney 1:100,000 Soil Landscape Sheet indicates that the site is predominantly located on Gelnorie (9130gn) depicts as shallow to moderately deep (<100 cm) red podzolic soils on crests, moderately deep (70-150cm) red and brown Podzolic soils on upper slopes; deep (>200cm) yellow Podzolic soils and Gleyed Podzolic soils along drainage lines.

Geological plan is shown in Appendix A.

2.2 FIELDWORKS

Fieldworks for the geotechnical investigation were carried out in May 2024 and January 2025, and comprised the following:

- Collection and review of DBYD plans.
- Service locating using electromagnetic detection equipment to ensure the borehole locations are positioned away from underground services.
- A detailed walkover inspection of the site and surroundings.
- In May 2024, Stantec completed mechanical drilling of four (4) cored boreholes. BH1 to 15.5m, BH2 to 15.05m, BH3 to 15.17m and BH4 to 20.0m. Boreholes were drilled using rotary drilling rigs operated Traccess Drilling and Stratacore Drilling.
- In January 2025, EG completed an extra cored borehole (BH5) to 25m depth bgl, using a rotary drill rig operated by Traccess Drilling. The purpose of this borehole is to meet the compliance of “minimum requirements for building site groundwater investigations and reporting”, that “at least one investigation borehole drilled to 25m below ground level is required for four levels project”.
- Standard Penetration Tests (SPT) were conducted every 1.5m of soil within the boreholes to assess the in-situ strength of the subsurface soil layers.
- Packer permeability tests were carried out on BH1 (HQ cored borehole) at selected interval.
- Installation of groundwater monitoring wells at selected boreholes upon completion of drilling.
- Geotechnical logging of soils and rocks retrieved from boreholes by a Geotechnical Engineer.
- Collection of soil and rock samples from drilling for laboratory testing including permeability test, point load index and Uniaxial Compressive Strength (UCS).
- Collection of environmental samples for soil durability assessment.
- Interpretation of investigation data obtained.
- Preparation of this geotechnical investigation report.

The approximate locations of the boreholes completed rea showing in Appendix A – Site Plan. Detailed borehole logs are shown in Appendix B. Detailed laboratory results are attached in Appendix

C. Permeability test results and seepage analysis refer to the separate EG RPT02 Groundwater Impact Assessment report.

2.3 SITE DESCRIPTION

The following site observation were made:

- The existing site consists of multi-storey nursing home building and a single storey dwelling. At the time of the investigation, the facility has been vacated.
- The site is bounded by Tryon Road to the north, Tryon Lane to the south, a five storey residential apartment building with two levels basement to the west, and a two storey residential building with one level basement to the east.
- The site is generally flat, dipping east and southeast at about 3-5 degrees.

2.4 SUBSURFACE CONDITIONS

Based on the observations from the geotechnical investigation, the subsurface profile within the proposed development can be generalised as following.

- Fill, (Unit 1), Silty/Clayey SAND, grey, dark grey, fine to medium grained sand, trace fine gravel, up to 0.4m thick, overlying
- Residual Soils (Unit 2): Silty Clay, yellow, orange, red, grey, medium to high plasticity, stiff to very stiff consistency, overlying
- Siltstone (Unit 3): grey to dark grey, highly weathered to slightly weathered rock, very low to medium strength, overlying
- Sandstone (Unit 4): pale grey to grey, moderately to fresh rock, low to high strength.

Table 2-1 Subsurface Conditions and Classification

Geotechnical Units	Depth (m bgl)				
	BH1	**BH2**	**BH3**	**BH4**	**BH5**
Approx. Surface RL (m)	93.17	93.21	93.32	93.37	93.38
Fill (Unit 1)	0 – 0.4	0 – 0.4	0 – 0.4	0 – 0.4	0 – 0.4
Residual Soils (Unit 2)	0.4 – 3.27	0.4 – 3.21	0.4 – 2.7	0.4 – 3.8	0.4 – 2.8
Class IV / V Siltstone (Unit 3a)	3.27 – 7.36	3.21 – 7.7	2.7 – 4.8	3.8 – 6.6	2.8 – 5.77
Class III / II Siltstone (Unit 3b)	14.0 – 15.5 Termination Depth	7.7 – 8.86	4.8 – 7.84	–	5.77 – 6.85
Class III / II Sandstone (Unit 4)	7.36 – 14.00	8.86 – 15.05 Termination Depth	7.84 – 15.17 Termination Depth	6.6 – 20.0 Termination Depth	6.85 – 25.0 Termination Depth

2.5 GROUNDWATER CONDITIONS

Groundwater table or seepage was not encountered in any of the boreholes during augering to depths of up to 3.8m bgl. Upon completion of borehole, installation of groundwater monitoring wells was carried out in BH1, BH2, BH3 and BH4 to the termination depths.

Wells were developed and drilling water was purged out for groundwater seepage monitoring and measurement on the same drilling period (13th to 15th May 2024) in dry sunny weather. Following 2 hours of purge out completion, recharged standing water was measured at 10.2m (BH2), 9.3m (BH3) and 12.3m (BH4) depths bgl; whilst BH1 remains dry.

Revisit was carried out on 17th May 2024 in dry sunny weather, standing water was measured as 10.4m (BH2), 9.8m (BH3), 12.2m (BH4), whilst BH1 remains dry. It is anticipated that the standing water is from slow seepage flows between the shale defects only. Based on past project experience at the region, permanent static groundwater table was not intersected by the installed groundwater wells to the depths of 20m. Data loggers were installed on 18th June 2024 on three selected wells (BH2, BH3 and BH4) for future groundwater level monitoring. Loggers were setup on hourly interval.

It is expected that the proposed basement excavation of up to 12.9m depths bgl may not intersect with the groundwater table but limited to slow seepages through top of bedrock and bedrock defects. It should be noted however, that variations in ground water seepage flows may occur due to variations in rainfall duration and intensity. It is possible that increased localised seepage/inflow may occur within interface of soils and rocks and fractures/defects of rock if it encounters an intense and prolonged rainfall during basement excavation.

Groundwater monitoring well installation details are summarised as follows:

Table 2-2 Summary of Standpipe Response Zone

BH ID	BH Termination Depth (mBGL)	Surface RL (m)	Response Zone Material	Screened Interval Depth (mBGL)	Logger Installation and Measurement Date	SWL Depth measured (m bgl / m AHD)
BH1	15.5	93.17	Weathered Ashfield Shale Unit 3A	3 – 6	18/6/2024	5.7 / 87.47
BH2	15.05	93.21	Ashfield Shale Unit 3B	4 – 9	18/6/2024	5.5 / 87.71
BH3	15.17	93.32	Hawkesbury Sandstone Unit 4A	9 – 15	18/6/2024	5.8 / 87.52
BH4	20	93.37	Hawkesbury Sandstone Unit 4A	8 – 20	18/6/2024	5.9 / 87.47

2.6 LAB RESULTS

2.6.1 Soil Aggressivity and Salinity

Laboratory soil aggressivity testing was carried out on the soil samples taken on site. Results are summarised in Table 2-3. Test results are attached in Appendix C.

Table 2-3 Soil Aggressivity Test Results

Sample No.	Depth (m)	Chloride (mg/kg)	Conductivity (µs/cm)	pH	Resistivity (ohm.m)	Sulfate (mg/kg)
BH1	2.5	38	51	5.0	200	47
BH2	2.5	<10	30	5.4	330	32
BH3	2.4	<10	30	5.0	330	42
BH4	2.5	<10	27	5.3	370	38

3 Comments and Recommendations

3.1 GENERAL

It is understood that the proposed development comprises the construction of a nine-storey residential apartment buildings with a up to four levels basement carpark. It is estimated that the proposed basement excavation will reach the Finished Floor Level (FFL) of RL 80.7m AHD, and up to 12.9m deep of excavation bgl.

3.2 EXCAVATION CONDITIONS

It is anticipated that overburden soils comprising topsoil, residual and Class IV/V Siltstone (unit 3a) to be readily excavated by conventional earthworks equipment such as excavators. Ripping or hammering will be required for any deeper bulk excavation into the less weathered Class III/II siltstone (unit 3b) and Class III/II sandstone (Unit 4) bedrock materials from about 4.8-7.7m depth bgl. Therefore, the induced vibration level control will be required to avoid impacting the adjacent properties.

Induced vibrations in structures adjacent to the excavation should not exceed a Peak Particle Velocity (PPV) of 10mm/sec for brick or unreinforced structures in good condition, and 5mm/sec for residential area.

To ensure vibration levels remain within acceptable levels and minimise the potential effects of vibration, excavation into medium or higher strength siltstone should be complemented with saw cutting or other appropriate methods prior to excavation. Rock saw cutting should be carried out using an excavator mounted rock saw to minimise transmission of vibrations to any adjoining properties.

If vibrations in adjacent structures exceed the values recommended above or appear excessive during construction, excavation should cease and the project Geotechnical Engineer should be contacted immediately for appropriate reviews so that counter- measures/actions can be taken.

It is recommended that dilapidation surveys of the adjacent properties and roads be carried out prior to earthwork commencement.

It is also recommended that inspections be carried out by a Geotechnical Consultant at every 1.5m deep intervals during excavation to assess excavation stability.

3.3 GROUNDWATER CONDITIONS

Based on the findings of this investigation, it is anticipated the proposed bulk excavation of up to 12.9m in residual clay and shale/sandstone bedrock will not intersect with the permanent groundwater table. Permanent dewatering will not be required. However, it is possible that localised minor seepage

may occur within interface of soils and rocks and fractures and defects of rock when an intense and prolonged rainfall occurs during basement excavation. It is anticipated the potential to occur large amount of inflow through soils, interface of soils and rocks, and through joints within shale will be very minor during basement excavation, with expected total inflow of less than 3ML/year. The conventional pump and sump method are considered manageable of such inflow water (if any).

It is also recommended the following control measures during design and construction:

- Strip drains, weepholes, subsoil drains, drainage materials should be included in the design of shoring and retaining walls.
- Collection trenches or pipes and pits connected to the building stormwater system. A stormwater storage tank and pump system may be required.
- The basement walls and slabs should be designed to withstand hydrostatic pressures taking into consideration the potential for seepage, where adequate drainage is not provided behind the full height of the walls.
- Seepage or subsurface runoff inside the excavated foundation pits or pile holes should be removed prior to pouring of concrete.

Refer to the separate EG Groundwater Impact Assessment report for the estimated the total annual seepage volume.

Feature basement excavation photos from closeby Lindfield project of up to 9m of excavation are shown below. No seepage was observed.

Photo 1- Basement in shale at up to 8m depth

Photo 2 – Footing excavation in process.

3.4 SOIL AGGRESSION

Soil aggressivity tests were carried out on selected samples. Test results indicate that soil aggression classification for concrete and steel structures is **Mild** in accordance with AS2159.

Test results and certificates are summarised in Appendix C.

3.5 RETAINING STRUCTURES

Shoring and support basement excavation and control lateral ground movement are recommended. The options include the following:

- Soldier pile wall shoring system; or
- Contiguous or semi-contiguous cast in-situ reinforced concrete piles embedded into underlying Class III/II sandstone or better rock, and gaps between the piles should be covered with reinforced shotcrete or reinforced concrete panels.

Temporary anchorage or other temporary tie-back system may be required to be installed prior to excavation to reduce the potential effects of ground movement on adjoining properties. Typically, anchors are to be installed at regular intervals along the shoring wall. However, installation of anchors beyond the property boundaries will be subject to approval by owners of adjoining properties or public assets. If installation of temporary anchors is not feasible e.g. the eastern and western sides where jointed with existing apartment basements, it is necessary to consider other options to control lateral ground movement. These options include the following:

- Temporary solutions such as installation of props associated with staged excavation; or
- Staged excavations and creating temporary partial berms in front of walls.

It is recommended that monitoring of ground movement (settlement and deflection) should be carried out during excavation.

During basement excavation, observations and recording on conditions of exposed faces should be carried out by the project Geotechnical Engineer, so that loose materials or weak layers can be removed.

The retaining wall should be designed and constructed in accordance with AS4678 Earth- Retaining Structures.

The recommended preliminary parameters for design of retaining structures are presented in Table 3-1 and Table 3-2 below. The coefficients provided are based on drained conditions.

Table 3-1 Geotechnical Design Parameters for Retaining Walls

Geotechnical Units	Unit Weight g (kN/m^3)	Effective Cohesion c' (kPa)	Friction Angle f' (degrees)	Modulus of Elasticity $E_{s\,(h)}$ (MPa)	Poisson's Ration n
Fill (Unit 1)	-	-	-	-	-
Residual Soils (Unit 2)	18	5	28	15	0.35
Class IV / V Siltstone (Unit 3a)	23	75	30	50	0.30
Class III / II Siltstone (Unit 3b)	24	200	32	200	0.25
Class III / II Sandstone (Unit 4)	24	350	36	600	0.20

Table 3-2 Coefficients of Lateral Earth Pressure

Geotechnical Units	Coefficient of Active Lateral Earth Pressure (Ka)	Coefficient of Lateral Earth Pressure at Rest (K_0)
Fill (Unit 1)	-	-
Residual Soils (Unit 2)	0.36	0.53
Class IV / V Siltstone (Unit 3a)	0.25	0.40
Class III / II Siltstone (Unit 3b)	0.10	0.15
Class III / II Sandstone (Unit 4)	0	0

The foregoing coefficients assume that the ground level behind the retaining structures is horizontal and the retained material is effectively drained. Adequate surface and sub-surface drainage is to be provided behind retaining walls.

Surcharge loading from neighbouring structures should also be included in the design of retaining structures, should it be within the zone of influence of the excavation. The zone of influence of the excavation is defined as a plane projected at 45 degrees from horizontal from the toe of the excavation face upwards into the excavation face towards the ground surface.

Wall support piles may be designed to extend below the base of the excavation and develop passive resistance at the base of the piles. In estimating the minimum "toe-in" length, where this approach is adopted, the recommended allowable passive pressures are shown below:

- Class V/IV Shale (Unit 3a) – 125 kPa
- Class III/II Shale (Unit 3b) – 500 kPa
- Class III/II Sandstone (Unit 4) – 1500 kPa

For design of temporary ground anchors, the allowable bond stress of the following could be adopted.

- Class V/IV Shale (Unit 3a) – 150 kPa
- Class III/II Shale (Unit 3b) – 350 kPa
- Class III/II Sandstone (Unit 4) – 800 kPa

The following is recommended as a guidance for anchor design:

- Anchor bond length of at least 3m behind the “active” zone of the excavation;
- Overall stability of anchor system and interaction is satisfactory; and
- The anchors are proof loaded to at least 1.3 times the design working load before locking off at working load.
- Deflection to be monitored within the TfNSW limit.

3.6 STRUCTURAL FOOTINGS

It is anticipated that the proposed bulk earthwork basement is likely to be founded predominantly in Class II/II Sandstone (Unit 4) bedrock.

It is assessed that a foundation system consisting of cast-in-situ reinforced concrete shallow foundations, such as pad or strip footings under columns and walls, could be applicable for the proposed development at this site.

Installation of piles is expected to be required for excavation shoring walls and in case of large axial loads on columns and walls and exceeding the bearing pressure of the bearing stratum. Other cases where piles may be required include the need to increase the stiffness of the founding rock, or increase the resistance against lateral seismic loads. Piles are expected to be socketed into underlying Class III/II Sandstone (Unit 4) bedrock.

The geotechnical capacities and parameters recommended for design of shallow and piled foundations are provided in Table 3-3 below.

Table 3-3 Geotechnical Foundation Design Capacities and Parameters

Geotechnical Units	Allowable End Bearing Pressure (MPa)[1]	Allowable Shaft Adhesion (kPa)[2]	Modulus of Elasticity $E_{s,v}$ (MPa)
Class III / II Siltstone (Unit 3b)	2.0	500	400
Class III / II Sandstone (Unit 4)	3.0	1000	1200

Notes:
1 With a minimum embedment depth of 1m for piled foundations and 0.5m for shallow foundations.
2 Shaft Adhesion applicable to piles only.
3 The actual depth of underlying Bedrock should be confirmed during construction.

To minimise the potential effects of differential settlement under the building loads, it is recommended all foundations of the proposed building should be founded on consistent materials of similar properties or rock of similar class.

Shaft adhesion may be applied to socketed piles adopted for foundations if socket shaft lengths conform to appropriate classes of shale and accepted levels of shaft sidewall cleanliness and roughness. The rock socket sidewalls should be free of soil and/or crushed rock to the extent that natural rock is exposed over at least 80% of the socket sidewall. Shaft adhesion should be reduced or ignored within socket lengths that are smeared and fail to satisfy cleanliness requirements. Additional attention to cleanliness of socket sidewalls may be required where presence of clay seams and weathered shale bands is evident over socket lengths.

Any water, debris, loose and wet materials should be entirely removed from excavated footing areas prior to pouring of concrete.

It is recommended that footing inspections be carried out by a Geotechnical Engineer / consultant during footing excavation to confirm appropriate founding materials, that the recommended serviceability bearing pressures could be met and to ensure that all soft and wet materials have been removed from the foundation footprint prior to concrete placement.

3.7 EARTHQUAKE DESIGN PARAMETERS

A Hazard Factor (Z) of 0.08 and a Site Subsoil Class Ce should be tentatively adopted for earthquake design in accordance with AS1170.4-2007 'Structural Design Actions, Part 4: Earthquake Actions in Australia', including Amendment Nos 1 & 2.

4 Limitations

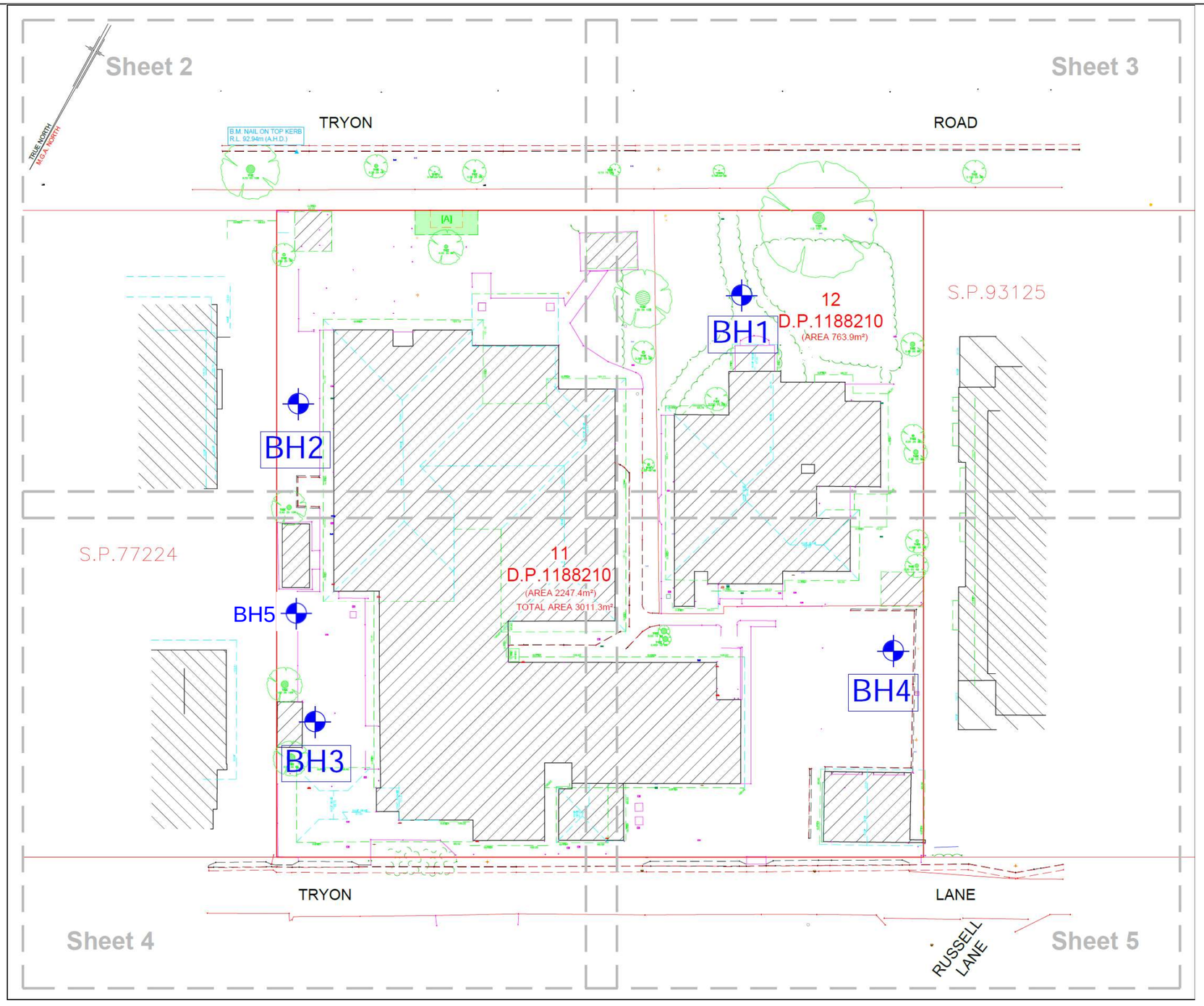
The information is site and project specific in the location investigated and therefore was provided for our client's sole use in accordance with a specific purpose; as such they do not necessarily address all aspects of ground behaviour on the subject site. The responsibility of EG is solely to its client.

Should subsurface conditions encountered on site differ markedly from those anticipated from the information contained in the report, EG should be notified immediately.

Logs of a borehole, recovered core, test pit, or excavated face are an engineering and/or geological interpretation of the subsurface conditions. The reliability of the logged information depends on the drilling/testing method, sampling/observation spacing's and the ground conditions. It is not always possible or economic to obtain continuous high-quality data. It should also be recognised that the volume of material observed or tested is only a fraction of the total subsurface profile.

Interpretation of subsurface information and application to design and construction must take into consideration the spacing of the test locations, the frequency of observations and testing, and the possibility that geological boundaries may vary between observation points.

Appendix A Site Plans

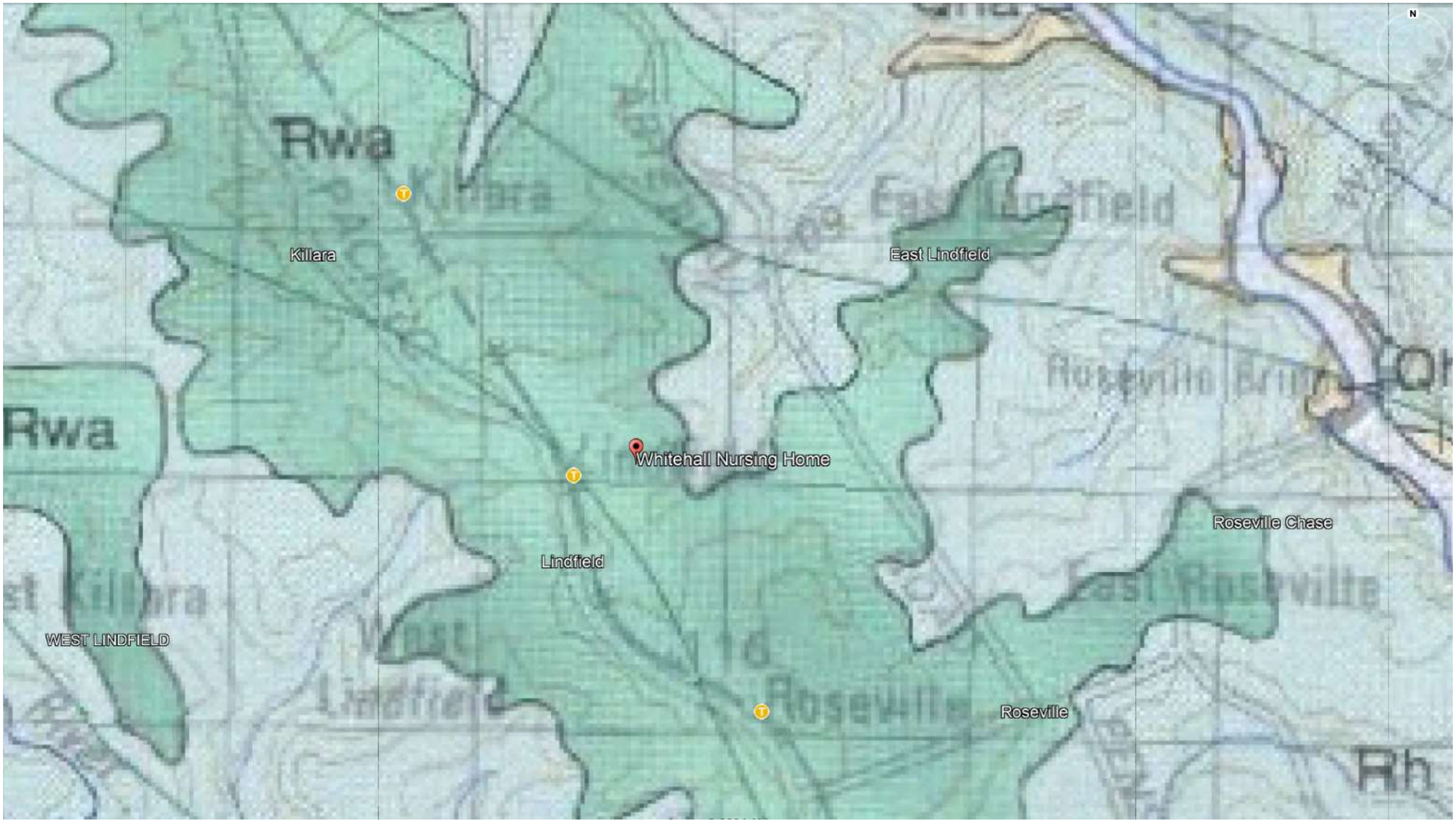


BOREHOLE AND TEST LOCATION

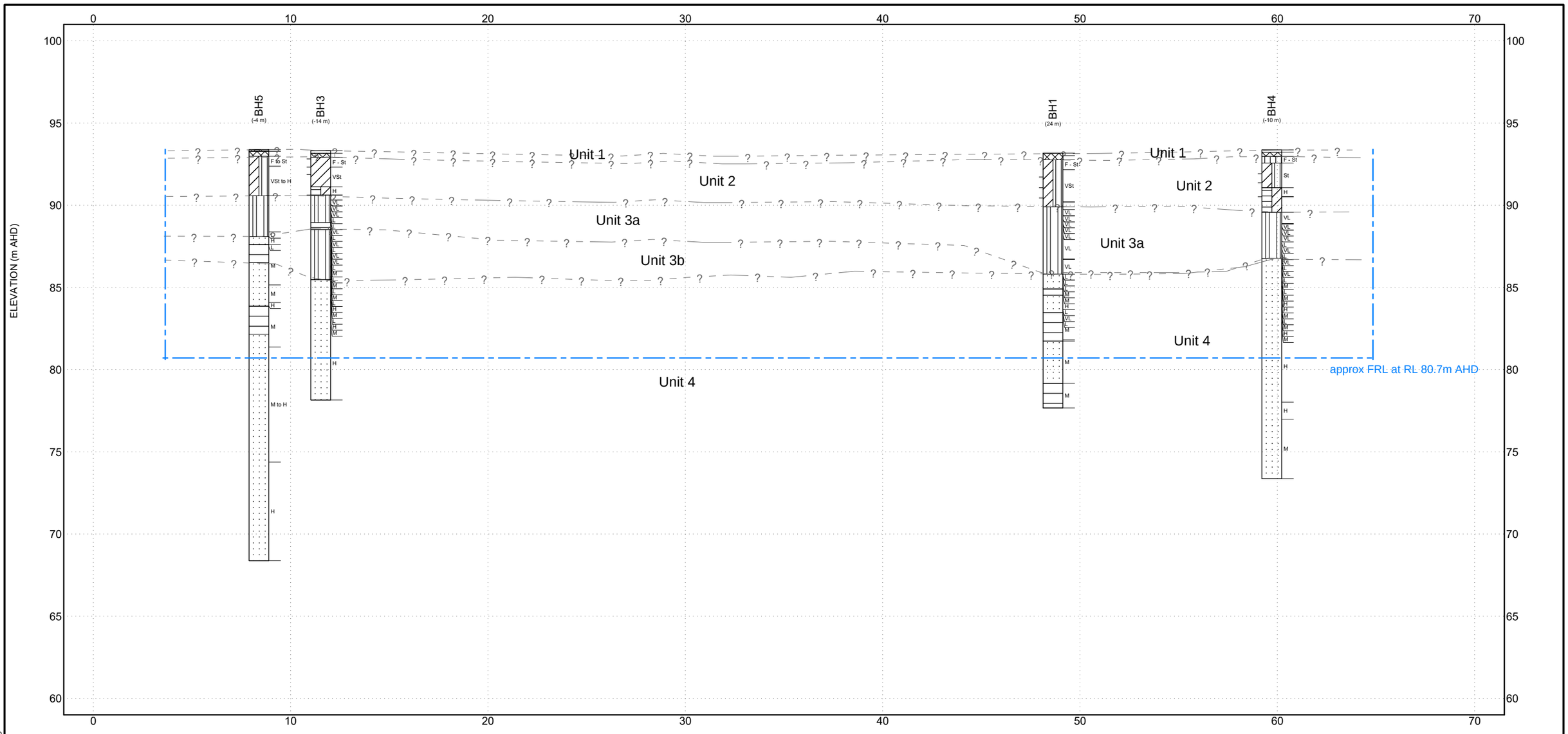
ELITE GEOSCIENCES

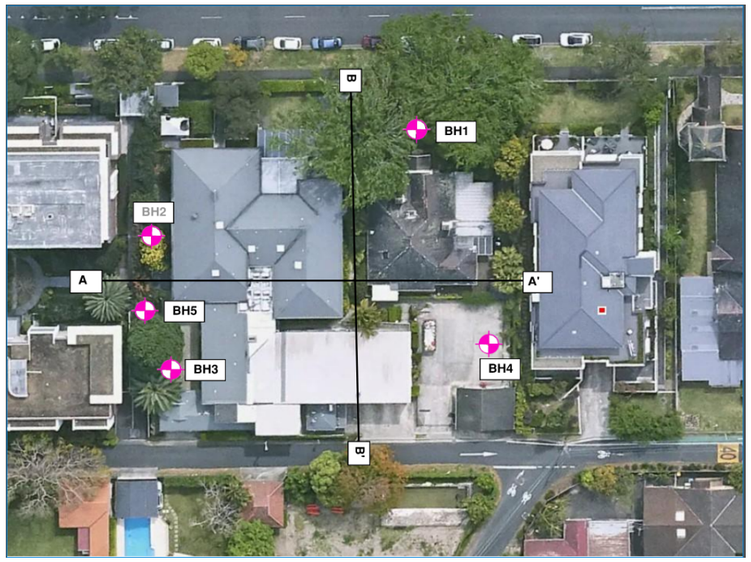
TITLE: **Site Plan**
27-29 Tryon Road, Lindfield NSW 2070

PROJECT NO:	TEST DATE:	PREPARED BY:
2025002	**04/02/2025**	**TH**

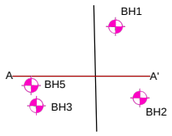


	TITLE:	**Geology Plan** **27-29 Tryon Road, Lindfield NSW 2070**	
ELITE GEOSCIENCES	PROJECT NO: **2025002**	TEST DATE: **04/02/2025**	PREPARED BY: **TH**





MAP KEY
Borehole

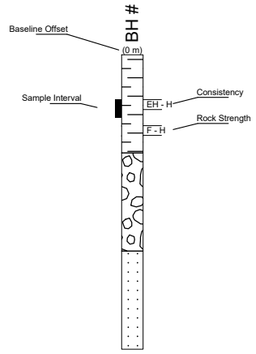


MATERIAL GRAPHIC

- FILL
- CI-CH - Medium to High Plasticity CLAY
- SILTSTONE
- SANDSTONE
- INTERBEDDED SILTSTONE & SANDSTONE
- CONCRETE
- MEDIUM PLASTICITY CLAY
- CL-CI - Low to Medium Plasticity CLAY
- INTERBEDDED MUDSTONE & SANDSTONE
- HIGH PLASTICITY CLAY
- TOPSOIL

H 1:200
0 2 4 6 8 10m
V 1:240
0 2 4 6 8 10m
Coord.System: MGA2020 Zone 56 Height Datum: AHD

POST LEGEND



ELITE GEOSCIENCES	CLIENT Bridgestone Projects		PROJECT Geotechncial Investigation 27-29 Tryon Road, Lindfield	
	DRAWN RC	DATE 05/02/2025		
	CHECKED TH	DATE 05/02/2025	TITLE Geotechnical Cross Section A-A'	
	SCALE H 1:200 V 1:240	A3	PROJECT No 2025002	FIGURE No Figure 1

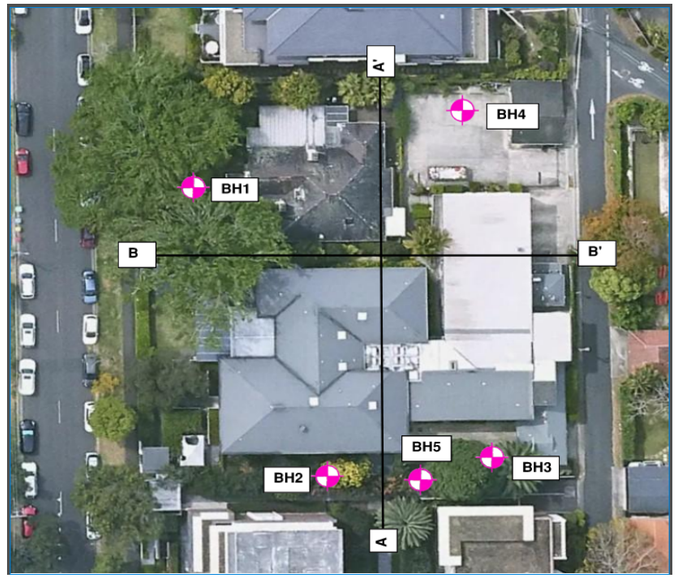
EG- EDITED XC.GLB Fence FENCE A3L LINDFIELD.GPJ CROSS SECTION A-A'.GDW 05/02/2025 09:31 10.03.00.09

ELEVATION (m AHD)

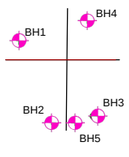
BH1 (9 m) BH2 (-31 m) BH5 (-31 m) BH4 (20 m) BH3 (-28 m)

Unit 1
Unit 2
Unit 3a
Unit 3b
Unit 4

approx FRL at RL 80.7m AHD

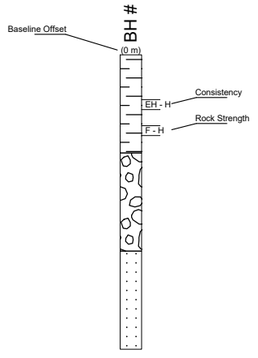


MAP KEY
Borehole



POST LEGEND

- FILL
- CI-CH - Medium to High Plasticity CLAY
- SILTSTONE
- SANDSTONE
- INTERBEDDED SILTSTONE & SANDSTONE
- TOPSOIL
- MEDIUM PLASTICITY CLAY
- CONCRETE
- CL-CI - Low to Medium Plasticity CLAY
- INTERBEDDED MUDSTONE & SANDSTONE
- HIGH PLASTICITY CLAY



H 1:160
0 1 2 3 4 5m
V 1:250
0 2 4 6 8 10m
Coord.System: MGA2020 Zone 56 Height Datum: AHD

ELITE GEOSCIENCES

CLIENT Bridgestone Projects		PROJECT Geotechncial Investigation 27-29 Tryon Road, Lindfield	
DRAWN RC	DATE 05/02/2025		
CHECKED TH	DATE 05/02/2025	TITLE Geotechnical Cross Section B-B'	
SCALE H 1:160 V 1:250	A3	PROJECT No 2025002	FIGURE No Figure 1

EG- EDITED XC.GLB Fence FENCE.A3L LINDFIELD.GPJ CROSS SECTION B-B'.GDW 05/02/2025 09:44 10.03.00.09

Appendix B Borehole Logs

ELITE GEOSCIENCES

Explanatory Notes

The methods of description and classification of soils and rocks used in this report are based on the Australian Standard AS1726-2017 Geotechnical Site Investigations. Material descriptions are deduced from field observation or engineering examination, and may be appended or confirmed by in situ or laboratory testing. The information is dependent on the scope of investigation, the extent of sampling and testing, and the inherent variability of the conditions encountered.

Subsurface investigation may be conducted by one or a combination of the following methods.

Method	
Test Pitting: excavation/trench	
BH	Backhoe bucket
EX	Excavator bucket
R	Ripper
H	Hydraulic Hammer
X	Existing excavation
N	Natural exposure
Manual drilling: hand operated tools	
HA	Hand Auger
Continuous sample drilling	
PT	Push tube
PS	Percussion sampling
SON	Sonic drilling
Hammer drilling	
AH	Air hammer
AT	Air track
Spiral flight auger drilling	
AS	Auger screwing
AD/V	Continuous flight auger: V-bit
AD/T	Continuous spiral flight auger: TC-Bit
HFA	Continuous hollow flight auger
Rotary non-core drilling	
WB	Washbore drilling
RR	Rock roller
Rotary core drilling	
PQ	85mm core (wire line core barrel)
HQ	63.5mm core (wire line core barrel)
NMLC	51.94mm core (conventional core barrel)
NQ	47.6mm core (wire line core barrel)
DT	Diatube (concrete coring)

Sampling is conducted to facilitate further assessment of selected materials encountered.

Sampling method	
Soil sampling	
B	Bulk disturbed sample
D	Disturbed sample
C	Core sample
ES	Environmental soil sample
SPT	Standard Penetration Test sample
U	Thin wall tube 'undisturbed' sample
WS	Environmental water sample
P	Piston Sampler

Field testing may be conducted as a means of assessment of the in situ conditions of materials.

Field testing	
SPT	Standard Penetration Test
HV/PP	Hane Vane (P-Peak R-Residual) / Pocket Penetrometer
Dynamic Penetrometers (blows per noted increment)	
DCP	Dynamic Cone Penetrometer
PSP	Perth Sand Penetrometer
MC	Moisture Content
VS	Vane Shear
PBT	Plate Bearing Test
SP	Single Packer Test
DP	Double Packer Test

If encountered, refusal (R), virtual refusal (VR) or hammer bouncing (HB) of penetrometers may be noted.

The quality of the rock can be assessed by the degree of natural defects/fractures and the following.

Rock quality description	
TCR	Total Core Recovery (%) (length of core recovered divided by the length of core run)
RQD	Rock Quality Designation (%) (sum of axial lengths of core greater than 100mm long divided by the length of core run)

Notes on groundwater conditions encountered may include.

Groundwater	
Not Encountered	Excavation is dry in the short term
Not Observed	Water level observation not possible
Seepage	Water seeping into hole
Inflow	Water flowing/flooding into hole

Perched groundwater may result in a misleading indication of the depth to the true water table. Groundwater levels are also likely to fluctuate with variations in climatic and site conditions.

Notes on the stability of excavations may include.

Excavation conditions	
Stable	No obvious/gross short term instability noted
Spalling	Material falling into excavation (minor/major)
Unstable	Collapse of the majority, or one or more face of the excavation

ELITE GEOSCIENCES

Explanatory Notes: General Soil Description

The methods of description and classification of soils used in this report are based on Australian Standard AS1726-2017 Geotechnical Site Investigations. In practice, a material is described as a soil if it can be remoulded by hand in its field condition. The dominant component is shown in upper case, with secondary components in lower case. In general descriptions cover: soil type, plasticity or particle size/shape, colour, strength or density, moisture and inclusions.

In general, soil types are classified according to the dominant particle on the basis of the following particle sizes.

Soil Classification		Particle Size (mm)
CLAY		< 0.002
SILT		0.002 0.075
SAND	fine	0.075 to 0.21
	medium	0.21 to 0.6
	coarse	0.6 to 2.36
GRAVEL	fine	2.36 to 6.7
	medium	6.7 to 19
	coarse	19 to 63
COBBLES		63 to 200
BOULDERS		> 200

Soil types may be qualified by the presence of minor components on the basis of field examination methods and/or the soil grading.

Terminology	In coarse grained soils		In fine soils
	% fines	% coarse	% coarse
Trace	≤5	≤15	≤15
With	>5, ≤12	>15, ≤30	>15, ≤30

The strength of cohesive soils is classified by engineering assessment or field/lab testing as follows.

Strength	Symbol	Undrained shear strength
Very Soft	VS	≤12kPa
Soft	S	12kPa to ≤25kPa
Firm	F	25kPa to ≤50kPa
Stiff	St	50kPa to ≤100kPa
Very Stiff	VSt	100kPa to ≤200kPa
Hard	H	>200kPa

Cohesionless soils are classified on the basis of relative density as follows.

Relative Density	Symbol	Density Index
Very Loose	VL	<15%
Loose	L	15% to ≤35%
Medium Dense	MD	35% to ≤65%
Dense	D	65% to ≤85%
Very Dense	VD	>85%

The plasticity of cohesive soils is defined by the Liquid Limit (LL) as follows.

Plasticity	Silt LL	Clay LL
Low plasticity	≤ 35%	≤ 35%
Medium plasticity	N/A	> 35% ≤ 50%
High plasticity	> 50%	> 50%

The moisture condition of soil (*w*) is described by appearance and feel and may be described in relation to the Plastic Limit (PL), Liquid Limit (LL) or Optimum Moisture Content (OMC).

Moisture condition and description	
Dry	Cohesive soils: hard, friable, dry of plastic limit. Granular soils: cohesionless and free-running
Moist	Cool feel and darkened colour: Cohesive soils can be moulded. Granular soils tend to cohere
Wet	Cool feel and darkened colour: Cohesive soils usually weakened and free water forms when handling. Granular soils tend to cohere

The structure of the soil may be described as follows.

Zoning	Description
Layer	Continuous across exposure or sample
Lens	Discontinuous layer (lenticular shape)
Pocket	Irregular inclusion of different material

The structure of soil layers may include: defects such as softened zones, fissures, cracks, joints and root-holes; and coarse grained soils may be described as strongly or weakly cemented.

The soil origin may also be noted if possible to deduce.

Soil origin and description	
Fill	Anthropogenic deposits or disturbed material
Topsoil	Zone of soil affected by roots and root fibres
Peat	Significantly organic soils
Colluvial	Transported down slopes by gravity/water
Aeolian	Transported and deposited by wind
Alluvial	Deposited by rivers
Estuarine	Deposited in coastal estuaries
Lacustrine	Deposited in freshwater lakes
Marine	Deposits in marine environments
Residual soil	Soil formed by in situ weathering of rock, with no structure/fabric of parent rock evident
Extremely weathered material	Formed by in situ weathering of geological formations, with the structure/fabric of parent rock intact but with soil strength properties

The origin of the soil generally cannot be deduced solely on the appearance of the material and the inference may be supplemented by further geological evidence or other field observation. Where there is doubt, the terms ‘possibly’ or ‘probably’ may be used

ELITE GEOSCIENCES

Explanatory Notes: General Rock Description

Description of Rock

i. Rock name (BLOCK LETTERS)

ii. Grain size and mineralogy

iii. Colour

iv. Fabric and texture

v. Features, inclusions, minor components, moisture content and durability

vi. Strength

vii. Weathering and/or alteration

viii. Rock mass properties – discontinuities and structure of rock

ix. Interpreted stratigraphic unit

x. Additional observations including geological structure

Simple rock names are used to provide a reasonable engineering description, rather than a precise geological classification and have been completed in general accordance with AS1726-2017. The rock name is chosen by considering the nature and shape of the grains or crystals, the texture and fabric of the rock material, the geological structure and setting, and information from the geological map of the area. Further guidance on the naming of rocks can be found in AS1726-2017, Tables 15, 16, 17 and 18. Typical rock types are described below, though subject to site specific variations.

Rock Type	Description	Example of Rock Name
Sedimentary	Formed by deposited beds of sediments, have grains that are cemented together and often rounded. Significant porosity	COMMON: Conglomerate, Breccia, Sandstone, Mudstone, Siltstone, Claystone ≥90% CARBONATE: Limestone, Dolomite, Calcirudite, Calcarenite, Calcisiltite, Calcilutite PYROCLASTIC: Agglomerate, Volcanic Breccia, Tuff
Igneous	Formed from molten rock and have a crystalline texture. Typically massive and low porosity. Rock types are from coarse to fine grained.	HIGH QUARTZ CONTENT: Granite, Microgranite, Rhyolite MODERATE QUARTZ CONTENT: Diorite, Microdiorite, Andesite LOW QUARTZ CONTENT: Gabbro, Dolerite, Basalt
Metamorphic	Formed when rocks are subject to heat and/or pressure and have typically have directional fabric. Typically have low porosity and crystalline structure. Rock types are from coarse to fine grained	FOLIATED: Gneiss, Schist, Phyllite, Slate NON-FOLIATED: Marble, Quartzite, Serpentinite, Hornfels
Duricrust	Formed as part of a weathering profile and show evidence of being cemented in situ. Cementation is typically irregular and exhibits replacement textures.	Ferricrete (Iron oxides and hydroxides) Silicrete (Silica) Calcrete (Calcium carbonate) Gypcrete (Gypsum)

Note: ( ) denotes dominant cementing mineralogy

Colour

Colour is described in the moist condition, using simple terms such as black, white, grey, red, brown, orange, yellow, purple, green, blue, etc. These may be modified as necessary, e.g. by 'pale', 'dark' or 'mottled'. Borderline colours are described as a combination of these colours. Refer to the core photographs accompanying borelogs for colour charts to assist with colour identification.

Grain Size

Terms describing dominate grain size in sedimentary rocks.

Term	Grain size
Coarse	Mainly 0.6 mm to 2 mm
Medium	Mainly 0.2 mm to 0.6 mm
Fine	Mainly 0.06mm (just visible) to 0.2 mm

Terms describing dominate grain size in igneous and metamorphic rocks

Term	Grain size
Coarse	Mainly greater than 2 mm
Medium	0.06 mm to 2 mm
Fine	Mainly less than 0.06 mm (just visible) to 0.2mm

Bedding and Fabric

Term	Definition
Massive	No obvious development of bedding – rock appears homogenous
Bedding	Layering produced by changes in sedimentation which may be defined by grain size, color or other features
Laminations	Similar to bedding but developed in layer thicknesses of less than 20mm
Foliation	The parallel arrangement of minerals due to metamorphic processes

Cleavage	A type of foliation developed in fine grained metamorphic rocks such as slates
Indistinct Fabric	There is little effect on strength - properties
Distinct Fabric	The rock may break more easily parallel to the fabric

Rock Strength

Term (Code)	UCS (MPa)	$Is_{(50)}$ (MPa)	Field Guide to Strength
Very Low (VL)	0.6 – 2	> 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 3 cm thick can be broken by finger pressure.
Low (L)	2 - 6	> 0.1 to ≤ 0.3	Easily scored with a knife; indentations 1 mm to 3 mm show in the specimen with firm blow of the pick point; has dull soun under hammer. A piece of core 150 mm long 50 mm in diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium (M)	6 - 20	> 0.3 to ≤ 1.0	Readily scored with a knife; a piece of core 150 mm long by 50 mm in diameter can be broken by hand with difficulty.
High (H)	20 - 60	> 1 to ≤ 3	A piece of core 150 mm long by 50 mm in diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High (VH)	60 - 200	> 3 to ≤ 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High (EH)	>200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Rock strength is assessed by laboratory Uniaxial Compressive Strength (UCS) testing and/or Point Load Strength Index (PLT) testing to obtain the Is(50) the strength table implies a 20 times correlation between Is(50) and UCS used for classification. Note however, multiplier may range from 4 (e.g. some carbonated and low strength rocks) to 40 (e.g. some igneous rocks and/or some high strength rocks). A site specific correlation based on testing, previous investigation or literature may be used where the strength of the rock mass which may be considered weaker due to the available. These terms refer to the strength of the rock material and not to effect of rock defects.

Rock Weathering

Term (Code)	Definition
Residual soil (RS)	Soil developed on extremely weathered rock. The rock mass structure and substance fabric are no longer evident but the soil has not been significantly transported.
Extremely weathered (EW)	Rock is weathered to such an extent that it has 'soil' properties, i.e, it either disintegrates or can be remoulded in water, b the texture of original rock is still evident.
Highly weathered (HW)	Distinctly weathered (DW)*	Whole rock material is discoloured usually by extent that iron staining or bleaching and other signs of chemical or physical decomposition are evident. Porosity and strength may be increased or decreased compared to the fresh rock usually as a result of iron leaching or deposition. The colour and strength of the original rock substance is no longer recognisable	*Where is it not practical to distinguish between 'HW' and MW'. 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
Moderately weathered (MW)		Whole rock material is discoloured usually by staining that original colour of the fresh rock is no longer recognisable	
Slightly weathered (SW)		Rock is slightly discoloured but shows little or no change of strength from fresh rock	
Fresh rock (F)		Rock shows no sign of decomposition or staining	

Rock Alteration

Term (Code)	Definition
Extremely altered (XA)	Rock is altered to such an extent that it has 'soil' properties, i.e, it either disintegrates or can be remoulded in water, b the texture of original rock is still evident.
Highly Altered (HA)	Distinctly Altered (DA)	Whole rock material is discoloured usually by extent that iron staining or bleaching and other signs of chemical or physical decomposition are evident. Porosity and strength may be increased or decreased compared to the fresh rock usually as a result of iron leaching or deposition. The colour and strength of the original rock substance is no longer recognisable	*Where is it not practical to distinguish between 'HA' and MA'. Rock strength usually changed by alteration The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of

Moderately Altered (MA)		Whole rock material is discoloured usually by staining that original colour of the fresh rock is no longer recognisable	weathering products in pores
Slightly altered (SA)		Rock is slightly discoloured but shows little or no change of strength from fresh rock	

Rock Core Recovery

TCR = Total Core Recovery (%)

$$\frac{Length\ of\ Core\ Recovered}{Length\ of\ Core\ Run} x\ 100$$

SCR = Solid Core Recovery (%)

$$\frac{Sum\ Length\ of\ Cylindrical\ Core\ Recovered}{Length\ of\ Core\ Run} x\ 100$$

RQD = Rock Quality Designation (%)

$$\frac{Sum\ Length\ of\ Sound\ Core\ Pieces > 100mm\ in\ legnth}{Length\ of\ Core\ Run} x\ 100$$

Types of Discontinuities

Term	Code	Description
Parting	BP	A surface or crack across which the rock has little or no tensile strength. Parallel or sub-parallel to layering (e.g. bedding) or a planar anisotropy in the rock material (e.g. cleavage). May be open or closed.
Joint	JT	A surface or crack with no apparent shear displacement and across which the rock ahs little or no tensile strength, but which is not parallel or sub-parallel to layering or to planar anisotropy in the rock material. May be open or closed.
Sheared Surface	SS	A near planar, curved or undulating surface which is usually smooth, polished or slickensided and which show evidence of shear displacement
Shear Zone	SZ	A zone with roughly parallel planar boundaries of rock substance consisting of closely spaced joints with smooth slickensided surfaces often curved. The joints divide the rock mass into unit blocks usually of lenticular or wedge shape.
Sheared Seam	SSe	Seam of soil material with roughly parallel almost planar boundaries, composed of soil materials with roughly parallel near planar, curved or undulating boundaries cut by closely spaced joints, sheared surfaces or other defects. Some of the defects are usually curved and intersect to divide the mass into lenticular or wedge-shaped blocks.
Crushed Seam	CS	A zone or seam with roughly parallel planar boundaries of rock substance composed of disoriented, usually angular, fragments of the host rock substance which may be more weathered than the host rock. The seam has soil properties
Infilled Seam	IS	Seam of soil material usually with distinct roughly parallel boundaries formed by the migration of soil into an open cavity or joint, infilled seams less than 1 mm thick may be described as a veneer or coating on a joint surface.
Extremely Weathered Seam	EWS	Seam of soil material, often with gradational boundaries. Formed by weathering of the rock material in place.
Seam	SM	Seam of soil material, often with gradational boundaries whereby the origin is not able to be distinguished in the field

Note: RMS specific terms such as drill breaks (DB) and handling breaks (HB) are used on the logs which are not strictly defined by AS1726-2017. These breaks are not included as natural discontinuity for fracture spacing calculations

Discontinuity Observation

Term	Code	Description
Clean	CN	No visible coating or infill
Stain	SN	No visible coating or infill but surfaces are discoloured by mineral staining
Veneer	VNR	A visible coating or soil or mineral substance but usually unable to be measured. If discontinuous over the plane, patchy veneer.
Coating <1 mm	CT	A visible coating or infilling of soil or mineral substance. Describe composition and thickness.
Filling (Filled) >1 mm	FLD	A visible filling of soil or mineral substance. Describe composition and

Infill Material

Code	Description	Code	Description
Ca	Calcite	Gp	Gypsum
Ch	Chlorite	Mn	Manganese
Cl	Clay	MS	Secondary mineral

Co	Coal	Py	Pyrite
Fe	Limonite / Ironstone	Um	Unidentified mineral
Fe Cl	Iron oxide clay	Qz	Quartz
Fl	Feldspar	X	Carbonaceous

Discontinuity Planarity

Term	Definition
CU	Curved – A defect with a gradual change in orientation
IR	Irregular – A defect with many sharp changes in orientation
PL	Planar – Defect forms a continuous plane without variation in orientation
ST	Stepped – A defect with distinct sharp steps or step
UN	Undulose – A defect with undulations

Discontinuity Roughness

Abbreviation	Description
RF	Rough – Many small surface irregularities generally related to the grain size of the parent rock
SM	Smooth – Few or no surface irregularities related to the grain size of the parent rock
PO	Polished – Planes have a distinct sheen or a smoothness
S	Slickensided – Planes have a polished, grooved or striated surface consistent with differential movement of the parent rocs along the plane
VR	Very rough – many large surface irregularities, amplitude generally more than 1mm

Discontinuity Spacing

Spacing (mm)	Description
>6000	Extremely Widely Spaced
2000 - 6000	Very Widely Spaced
600 - 2000	Widely Spaced
200 - 600	Medium Spaced
60 - 200	Closely Spaced
20 - 60	Very Closely Spaced
<20	Extremely Closely Spaced

Visual log

A diagrammatic plot of defects showing type, spacing and orientation in relation to the core axis.

Defects open in situ or clay sealed

Defects closed in-situ

Drill induced fractures or handling breaks

Infilled seam

Water

WATER			
	Water level at date shown		Partial water loss
	Water inflow		Complete water loss

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO :BH1
FILE / JOB NO : 305001322
SHEET : 1 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330750.997, N: 6261339.566 (56 MGA2020) SURFACE ELEVATION : 93.170 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : MG

DATE STARTED : 14/5/24 DATE COMPLETED : 14/5/24 DATE LOGGED : 14/5/24 LOGGED BY : RN CHECKED BY : TH

DRILLING						MATERIAL						
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T		E	Not Encountered	1.00m SPT 4, 8, 14 N=22	0.0 93.2			0.15m FILL: SAND: dark grey, fine to medium grained sand, trace sub-angular, fine to medium grained gravel	M		FILL
								FILL: CLAYEY SAND: dark brown, fine to medium grained sand, medium plasticity clay	M		
								0.40m SILTY CLAY: red-brown, medium to high plasticity	M	F - St	RESIDUAL SOIL
		F		1.45m 1.50m U	1.0 92.2			1.00m SILTY CLAY: pale grey to grey, brown-orange, brown-yellow, medium to high plasticity	M	VSt	
				2.10m	2.0 91.2						
		H		2.50m SPT 13, 15/80mm N=R 2.73m				2.97m Continued as Cored Drill Hole			
					3.0 90.2						
					4.0 89.2						
					5.0 88.2						
					6.0 87.2						
					7.0 86.2						
					8.0 85.2						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:44 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH1
FILE / JOB NO : 305001322
SHEET : 2 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330750.997, N: 6261339.566 (56 MGA2020) SURFACE ELEVATION : 93.170 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : MG

DATE STARTED : 14/5/24 DATE COMPLETED : 14/5/24 DATE LOGGED : 14/5/24 LOGGED BY : RN CHECKED BY : TH

CASING DIAMETER : HWT BARREL (Length) : 3.00 m BIT : Step BIT CONDITION : New

DRILLING					MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 93.2						
					1.0 92.2						
					2.0 91.2						
					2.97m		START CORING AT 2.97m				
HQ	0% LOSS	0% NO CORE 5.20	14		3.0 90.2		SILTY CLAY: brown-orange, medium to high plasticity (RESIDUAL SOIL)				
					3.27m						
				Is(50) d=0.09 a=0.25 MPa			SILTSTONE: red-brown, grey, grey to dark grey, bedded at 0°-10°	EW			3.27-3.43: EWS Clay
											3.48-3.54: CZ
											3.65: BP 5° CN CU S
								EW			3.76-3.82: EWS Clay
					4.0 89.2						3.92-3.97: JT 90° SN PR S
											3.97-4.04: CZ
								EW			4.04-4.08: EWS Clay
											4.08-4.13: JT 70 - 90° SN IR S
											4.23-4.32: CZ
								EW			4.32-4.36: EWS Clay
								EW			4.43-4.56: EWS Clay
											4.64: BP 5 - 10° CN CU S
					5.0 88.2						4.70-4.90: JT 70 - 90° CN IR S
											4.92-5.00: JT 70 - 90° CN IR S
								EW			5.00-5.20: EWS Clay
		5.20			5.20m						
	0% LOSS	0% NO CORE 7.36	64	Is(50) d=0.07 a=0.05 MPa			SILTSTONE: grey to dark grey, 10-15% sandstone laminations at 0°-15°, grey fine grained	HW			5.30-5.37: JT 60° Clay IR S
											5.47: BP 5° CN PR S
											5.60: BP 5° CN PR S
											5.67: BP 5° CN PR S
					6.0 87.2						5.83: BP 10° CN PR S
											5.94: BP 5 - 15° Clay IR S
											5.97: BP 10° CN PR S
											6.01: DB
											6.10: BP 0° CN PR S
											6.19: JT 10° CN PR S
				Is(50) d=0.01 a=0 MPa				EW			6.43-6.47: EWS Clay
								HW			6.63: BP 5° CN PR S
											6.86-6.90: JT 45° CN PR S
					7.0 86.2						7.10: BP 0 - 5° Sand IR S
											7.13: BP 10 - 20° CN PR S
											7.19: BP 15° CN PR S
		7.36			7.36m						
	0% LOSS	0% NO CORE	71				SANDSTONE: pale grey to grey, fine to medium grained, 5% carbonaceous laminations at 0°-20°, iron stained	MW			7.40: BP 15° CN PR S
								EW			7.46-7.51: EWS Sandy Clay
								MW			7.60-7.65: EWS Clay
								EW			7.76: BP 5° CN UN S
								MW			7.81: BP 5° Clay PR S
					8.0 85.2						7.95: BP 5° SN PR RF

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:43 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH1
FILE / JOB NO : 305001322
SHEET : 3 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330750.997, N: 6261339.566 (56 MGA2020) SURFACE ELEVATION : 93.170 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stratacore DRILLER : MG

DATE STARTED : 14/5/24 DATE COMPLETED : 14/5/24 DATE LOGGED : 14/5/24 LOGGED BY : RN CHECKED BY : TH

CASING DIAMETER : HWT BARREL (Length) : 3.00 m BIT : Step BIT CONDITION : New

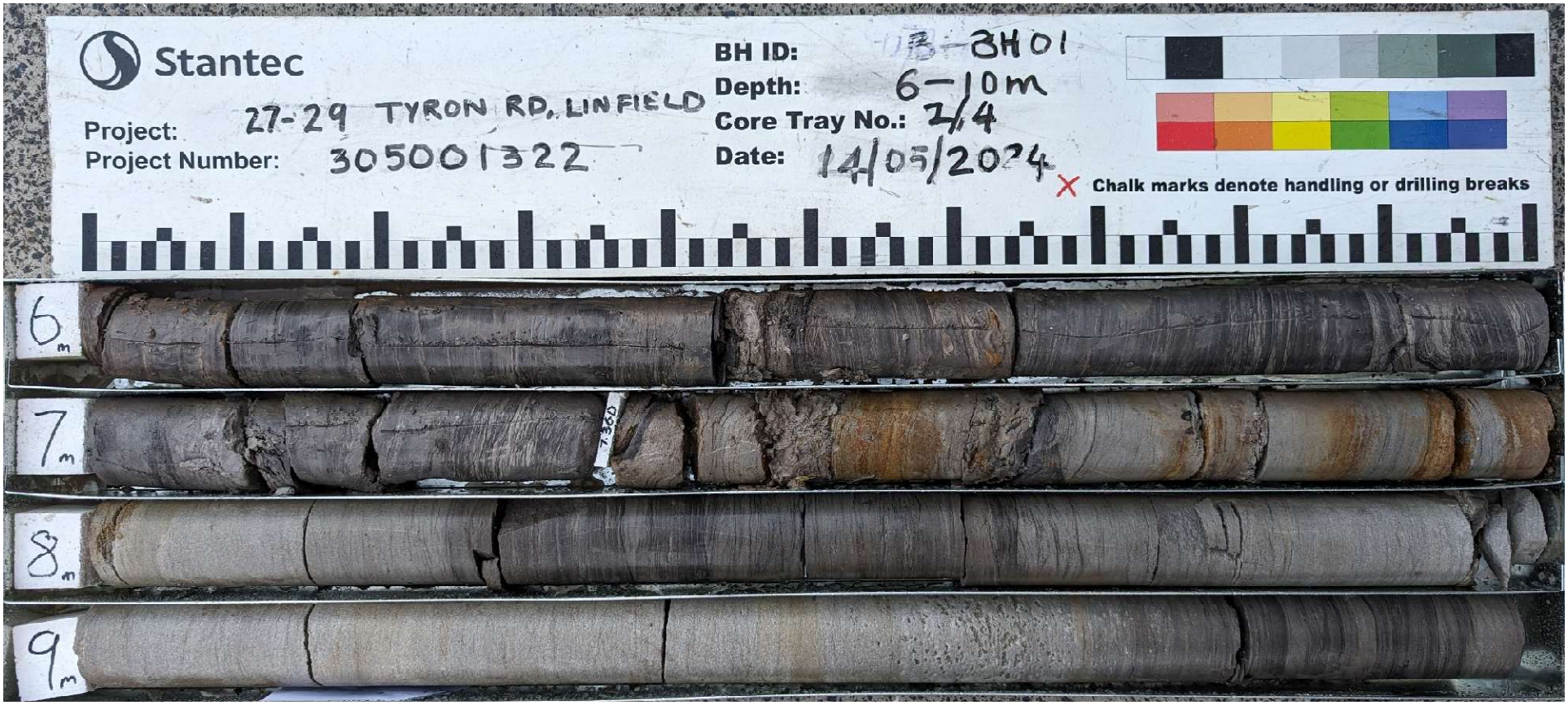
DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
HQ	0% LOSS	0% NO CORE	71	Is(50) d=0.22 a=1.02 MPa	8.0 85.2		8.26m	SW			8.02: DB 8.14: DB
							INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%) AT 0°-5°: grey, fine grained sandstone, grey to dark grey siltstone	SW			8.26-8.34: JT 70° CN PR RF
							8.64m				8.49: BP 0° CN PR S
							SANDSTONE: pale grey to grey, fine to medium grained, <5% carbonaceous laminations at 0°-5°	SW			8.60: DB 8.74: DB
				UCS =7.3 MPa 8.94m							
					9.0 84.2						8.95-9.00: CZ 9.15: DB
				Is(50) d=0.19 a=0.28 MPa							9.40: BP 5° CN PR S
							9.70m	MW			
							INTERBEDDED AND INTERLAMINATED SANDSTONE (70%) AND SILTSTONE (30%) AT 0°-10°: grey, fine to medium grained sandstone, grey to dark grey siltstone	HW MW SW			9.80: BP 0° CN PR S
					10.0 83.2						
		10.33									10.17: JT 5 - 10° CN IR RF 10.27: JT 5°
		0% NO CORE	74								10.55: BP 0° CN PR S 10.57: BP 0° CN PR S
											10.86: BP 0° CN PR S 10.95-10.96: BP 0° CN PR S
					11.0 82.2						11.00-11.16: JT 70 - 90° CN CU S
				Is(50) d=0.16 a=1.47 MPa			11.43m				11.35-11.43: EWS Clay
							SANDSTONE: pale grey to grey, fine to medium grained, 5% carbonaceous laminations at 0°-15°	EW SW			11.67: BP 0° CN PR S
											11.96: BP 0° CN PR S
					12.0 81.2						12.17-12.19: BP 0° CN PR S 12.28: BP 10° CN UN S 12.37-12.54: JT 80° CN IR RF
				Is(50) d=0.67 a=0.65 MPa				F			
					13.0 80.2						12.99: DB
		13.32									
		0% NO CORE	89								13.47: BP 5° CN CU S
							14.00m				13.96: BP 0° CN PR S
					14.0 79.2		INTERBEDDED AND INTERLAMINATED SILTSTONE (75%) AND SANDSTONE (25%) AT 0°-15°: dark grey siltstone, grey, grey to pale grey, fine to medium sandstone	F			14.12: BP 0° CN PR S 14.18: BP 0° CN PR S
				Is(50) d=0.16 a=1.52 MPa							14.56: BP 0° CN PR S 14.65: BP 5° CN CU S 14.73: BP 5° CN CU S
					15.0 78.2						14.88: BP 10° CN PR S 15.14: BP 0° CN PR S
		15.50					15.50m				
							BOREHOLE BH1 TERMINATED AT 15.50 m Target depth				
					16.0 77.2						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:43 10.03.00.09

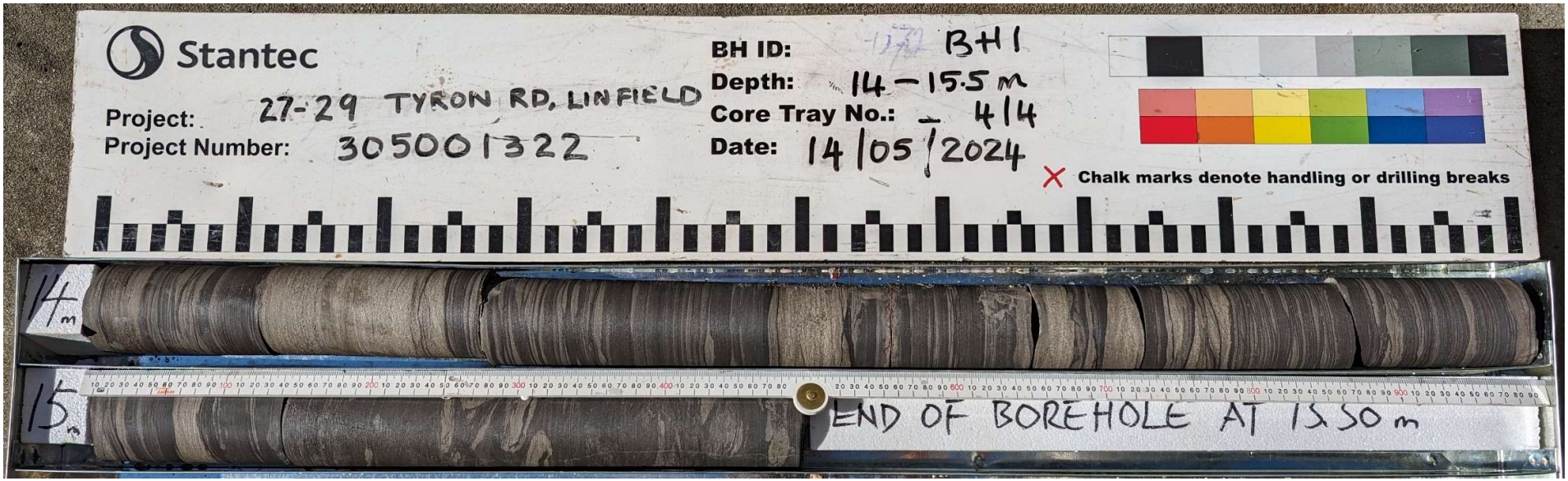
	TITLE: **Borehole Core Photographs – BH1** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 4** **2.97 – 6.00m (3.03m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**

	TITLE: **Borehole Core Photographs – BH1** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 2 OF 4** **6.0 – 10.0m (4.0m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**



	TITLE: **Borehole Core Photographs – BH1** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 3 OF 4** **10.0 – 14.0m (4.0m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**

	TITLE: **Borehole Core Photographs – BH1** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 4 OF 4** **14.0 – 15.5m (1.5m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**



	TITLE:	**Borehole SPT Photographs – BH1** **27-29 Tryon Road, Lindfield**		
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	SPT PHOTOS
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO :BH2
FILE / JOB NO : 305001322
SHEET : 1 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330724.092, N: 6261305.741 (56 MGA2020) SURFACE ELEVATION : 93.210 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stantec DRILLER : MG

DATE STARTED : 15/5/24 DATE COMPLETED : 15/5/24 DATE LOGGED : 15/5/24 LOGGED BY : RN CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T		E	Not Encountered	D 0.40m	0.0 93.2			0.10m TOPSOIL: SILTY SAND: dark grey, fine to medium grained sand, trace fine gravel, rootlets	M		TOPSOIL
								FILL: SILTY CLAY: dark grey, medium to high plasticity	M		FILL
								0.40m SILTY CLAY: pale grey, medium to high plasticity		F - St	RESIDUAL SOIL
				1.00m SPT 5, 10, 14 N=24 1.45m	1.0 92.2						
		F							M		
				2.00m U	2.0 91.2					VSt	
		H		2.50m SPT 9, 19, 14/60mm N=R 2.86m				2.80m			
					3.0 90.2			3.00m SILTSTONE: grey to dark grey, recovered as clayey silt, medium plasicity, inferred extremely weathered, very low strength			BEDROCK
								Continued as Cored Drill Hole			
					4.0 89.2						
					5.0 88.2						
					6.0 87.2						
					7.0 86.2						
					8.0 85.2						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:44 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH2
FILE / JOB NO : 305001322
SHEET : 2 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330724.092, N: 6261305.741 (56 MGA2020) SURFACE ELEVATION : 93.210 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 MOUNTING : Track CONTRACTOR : Stantec DRILLER : MG

DATE STARTED : 15/5/24 DATE COMPLETED : 15/5/24 DATE LOGGED : 15/5/24 LOGGED BY : RN CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 3.00 m BIT : Step BIT CONDITION : Fair

DRILLING					MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 93.2						
					1.0 92.2						
					2.0 91.2						
					3.0 90.2		3.00m START CORING AT 3.00m				
NMLC		0% NO CORE	32	Is(50) d=0.05 a=0.08 MPa			3.21m SILTY CLAY: pale grey, yellow-brown, medium to high plasticity (RESIDUAL SOIL)				
	0% LOSS						SILTSTONE: grey to dark grey, yellow-brown, bedded with clay seams at 0°-10°, heavily iron stained	HW EW HW			3.21-3.36: CZ 3.36-3.52: EWS Clay 3.56: JT 5° SN PR S 3.58-3.70: CZ 3.70-3.81: JT 80° CN PR S
					4.0 89.2			EW HW EW HW			3.92-4.00: EWS Clay 4.00-4.09: CZ 4.09-4.14: EWS Clay 4.18: BP 0° CN PR S 4.20-4.25: EWS Clay 4.25-4.40: CZ
							4.45m SILTSTONE: dark grey, indistinctly bedded at 0°-10°, iron stained	EW HW EW HW			4.40-4.43: EWS Clay 4.46: BP 0° SN PR S 4.48-4.54: JT 70° CN PR S 4.60-4.64: CZ 4.72: BP 5° Clay CU S
				Is(50) d=0.02 a=0.11 MPa			4.89m SILTSTONE: grey, grey to dark grey, indistinctly bedded at 0°-10°, slightly iron stained				
					5.0 88.2						5.00-5.21: CZ 5.26: JT 20° CN PR S 5.36: DB 5.53: DB 5.68-5.71: JT 60° CN IR S 5.85: BP 5° CN PR S
				Is(50) d=0.05 a=0.08 MPa							
		5.99									
		0% NO CORE	33	UCS =0.22 MPa 6.30m	6.0 87.2						6.00-6.02: CZ 6.07-6.14: JT 60° SN PR S
							6.50m SILTSTONE: grey to dark grey, 5-10% sandstone laminations at 0°-10°, grey, fine grained	MW			6.30-6.51: CZ
	0% LOSS							EW			6.57-6.83: JT 80 - 90° SN PR S 6.83-7.10: EWS Clay
					7.0 86.2			HW			7.16: JT 30° CN CU S 7.25-7.70: JT 70 - 90° CN IR S
								MW			
					8.0 85.2						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:43 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH2
FILE / JOB NO : 305001322
SHEET : 3 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330724.092, N: 6261305.741 (56 MGA2020) | SURFACE ELEVATION : 93.210 (AHD) | ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MI2 | MOUNTING : Track | CONTRACTOR : Stantec | DRILLER : MG

DATE STARTED : 15/5/24 | DATE COMPLETED : 15/5/24 | DATE LOGGED : 15/5/24 | LOGGED BY : RN | CHECKED BY : TH

CASING DIAMETER : HQ | BARREL (Length) : 3.00 m | BIT : Step | BIT CONDITION : Fair

DRILLING: PROGRESS (DRILLING & CASING, WATER) | (NO CORE PER RUN %) DRILL DEPTH | RQD (%) | SAMPLES & FIELD TESTS | DEPTH (m) RL (m AHD)

MATERIAL: GRAPHIC LOG | DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable) | Weathering | ESTIMATED STRENGTH Is(50) (● - Axial, ○ - Diametral; VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH)

FRACTURES: NATURAL FRACTURE (mm) (20, 40, 100, 300, 1000) | ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other

Drilling & casing: NMLC

Drilling runs

Run to depth (m)	No core	RQD (%)	Water
8.90	0% NO CORE	33	0% LOSS
11.90	0% NO CORE	69	0% LOSS
15.05	0% NO CORE	85	0% LOSS

Samples & field tests

Depth (approx.)	Test
8.1 m	Is(50) d=0.06 a=0.15 MPa
9.6 m	Is(50) d=0.14 a=1.18 MPa
11.1 m	Is(50) d=0.31 a=3.43 MPa
12.6 m	Is(50) d=0.73 a=1.44 MPa
14.1 m	Is(50) d=0.15 a=0.69 MPa

Depth / RL

8.0 (85.2), 9.0 (84.2), 10.0 (83.2), 11.0 (82.2), 12.0 (81.2), 13.0 (80.2), 14.0 (79.2), 15.0 (78.2), 16.0 (77.2)

Description

Depth to (m)	Description
8.86m	SILTSTONE: grey to dark grey, 5-10% sandstone laminations at 0°-10°, grey, fine grained *(continued)*
11.21m	SANDSTONE: grey, pale grey to grey, fine to medium grained, 5-10% carbonaceous laminations at 0°-10°
11.53m	INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%) AT 0°-10°: dark grey siltstone, grey, fine grained sandstone
15.05m	SANDSTONE: pale grey to grey, fine to medium grained, 5% carbonaceous laminations at 0°-10°

BOREHOLE BH2 TERMINATED AT 15.05 m
Target depth

Weathering (top to bottom): MW, HW, MW, MW, HW, MW, SW, HW, EW, MW, SW, MW, F, F, MW, HW, SW, F, HW, MW, SW

Additional data

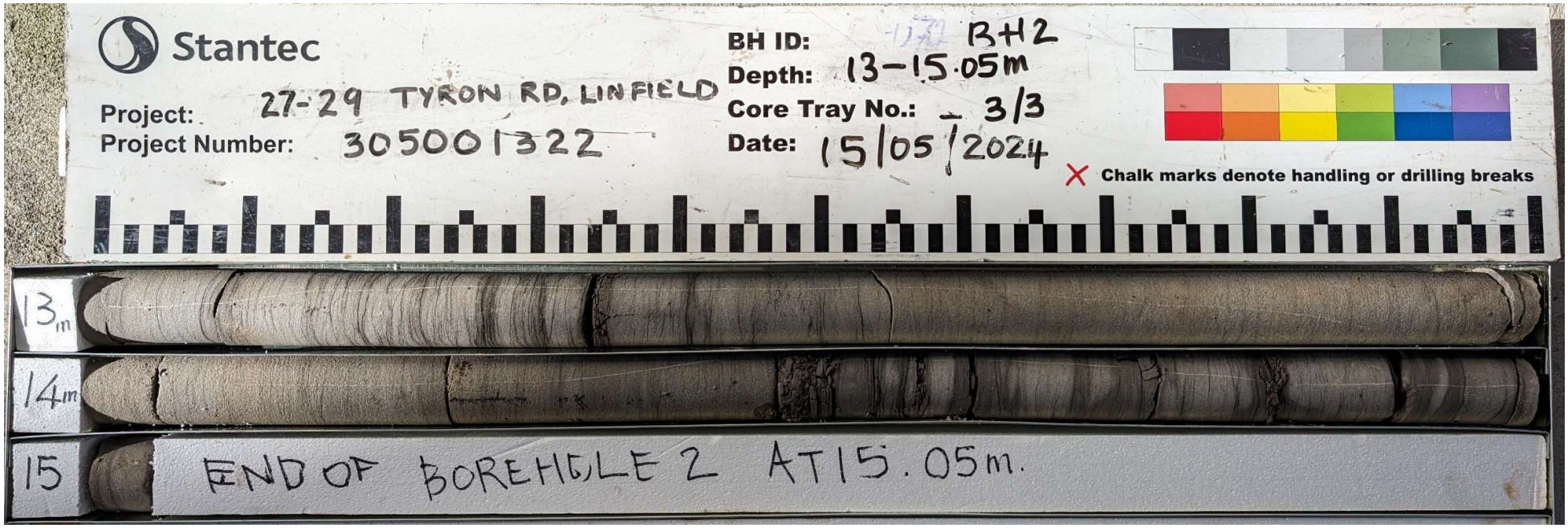
- 8.00-8.03: JT 40° CN PR S
- 8.03-8.06: JT 45° CN PR S
- 8.12: BP 5° CN PR S
- 8.20: DB
- 8.33: JT 5 - 10° CN PR S
- 8.39: JT 5 - 10° CN PR S
- 8.47-8.55: CZ Clayey Sand
- 8.65: BP 5° CN PR S
- 8.85: BP 5° CN PR S
- 8.90-9.00: CZ
- 9.03: BP 5° CN PR S
- 9.08-9.23: CZ
- 9.27: BP 5° CN PR S
- 9.33: BP 0° CN PR RF
- 9.39: BP 0° CN PR S
- 9.53: BP 5° CN CU S
- 9.59: DB
- 9.73: BP 5° CN PR S
- 9.77-9.80: EWS Sandy Clay
- 9.85: BP 5° CN CU S
- 10.07: DB
- 10.22-10.27: JT 45° CN IR RF
- 10.32: BP 5° CN CU S
- 10.48-10.50: JT 30° CN PR S
- 10.61: BP 0° CN PR S
- 11.01: BP 0° CN PR S
- 11.06: JT 30° CN PR S
- 11.07: JT 10° CN PR S
- 11.10: BP 0° CN PR S
- 11.30-11.38: JT 85° CN PR RF
- 11.41: BP 0° CN PR S
- 11.53: BP 10° CN CU S
- 11.54: BP 10° CN UN S
- 11.58: BP 5° CN CU RF
- 11.66: DB
- 11.76: BP 5° CN PR S
- 11.82: BP 5° CN PR S
- 11.94: BP 0° CN PR S
- 12.03: BP 0° CN PR S
- 12.47: DB
- 12.74: DB
- 12.85: DB
- 13.09: DB
- 13.34: BP 0° CN PR S
- 13.54: JT 0 - 20° CN CU S
- 13.97: DB
- 13.99: DB
- 14.04: DB
- 14.24: DB
- 14.46-14.51: CZ
- 14.54: BP 0° CN PR S
- 14.57: BP 0° CN PR S
- 14.60: BP 0° CN PR S
- 14.70-14.73: JT 90° CN ST RF
- 14.81: BP 0° Sand PR RF
- 14.90: BP 5 - 10° CN CU S
- 14.98: DB

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

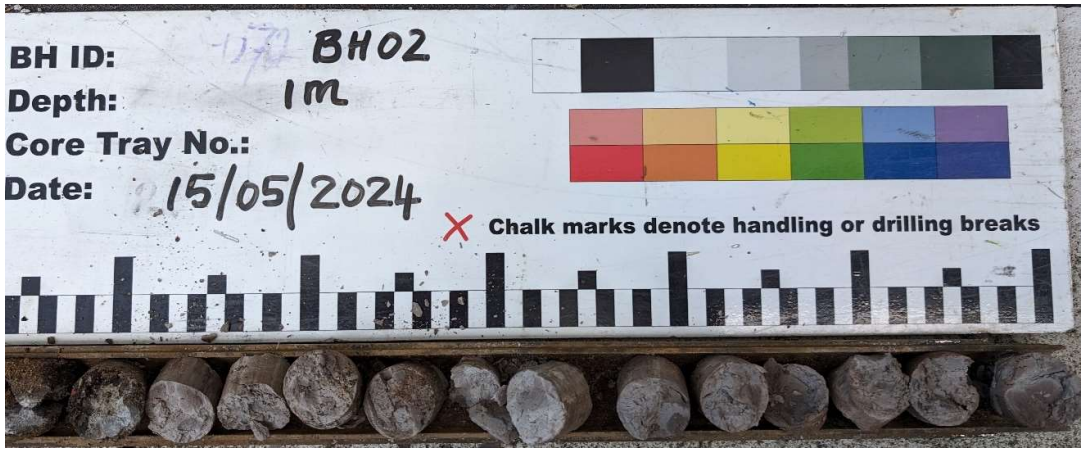
	TITLE: **Borehole Core Photographs – BH2** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **15/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 3** **3.0 – 8.0m (5.0m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**

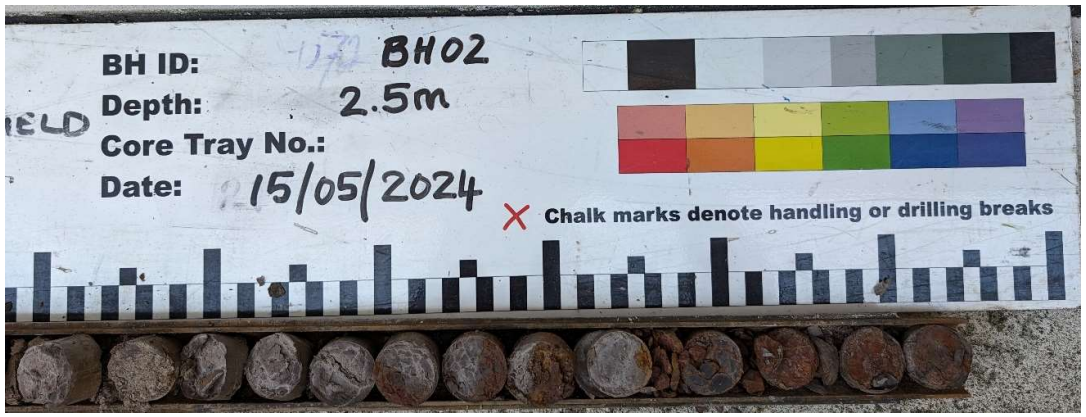
	TITLE: **Borehole Core Photographs – BH2** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **15/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 2 OF 3** **8.0 – 13.0m (5.0m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**

	TITLE: **Borehole Core Photographs – BH2** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **15/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 3 OF 3** **13.00 – 15.05m (2.05m Length)**
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**



	TITLE:	**Borehole SPT Photographs – BH2** **27-29 Tryon Road, Lindfield**		
	PROJECT NO: **305001322**	TEST DATE: **15/05/2024**	INCLINATION: **-90 degree**	SPT PHOTOS
	DRILL RIG: **MI2**	CONTRACTOR: **Stratacore**	LOGGED BY: **RN**	CHECKED BY: **TH**





NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO :BH3
FILE / JOB NO : 305001322
SHEET : 1 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330736.410, N: 6261289.101 (56 MGA2020) SURFACE ELEVATION : 93.320 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 14/5/24 DATE COMPLETED : 14/5/24 DATE LOGGED : 14/5/24 LOGGED BY : SL CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T		H	Not Encountered	0.20m D 0.40m	0.0 93.3			0.16m CONCRETE			ROAD SURFACE
		E		D 0.50m 0.60m D				0.40m FILL: CLAYEY SAND: grey, fine to medium grained sand, high plasticity clay, trace sub-angular, fine grained gravel	M		FILL
				1.00m SPT 6, 8, 16 N=24	1.0 92.3			SILTY CLAY: orange-brown, medium plasticity, trace ironstone gravels	M	F - St	RESIDUAL SOIL
		F		1.45m			CI			VSt	
					2.0 91.3			2.20m			
		H		2.40m SPT 10, 19/150mm N=R 2.70m			CL-CI	SILTY CLAY: grey, brown, orange-brown, low to medium plasticity, trace ironstone gravels, some rock fabrics visible	M	H	WEATHERED MATERIAL
								2.70m Continued as Cored Drill Hole			
					3.0 90.3						
					4.0 89.3						
					5.0 88.3						
					6.0 87.3						
					7.0 86.3						
					8.0 85.3						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:44 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH3
FILE / JOB NO : 305001322
SHEET : 2 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330736.410, N: 6261289.101 (56 MGA2020) SURFACE ELEVATION : 93.320 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 14/5/24 DATE COMPLETED : 14/5/24 DATE LOGGED : 14/5/24 LOGGED BY : SL CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 3.00 m BIT : Step BIT CONDITION : Fair

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 93.3						
					1.0 92.3						
					2.0 91.3						
							2.70m START CORING AT 2.70m				
NMLC	0% Water LOSS	0% NO CORE	28	Is(50) d=0 a=0 MPa	3.0 90.3		SILTSTONE: orange-brown, grey to dark grey, bedded at 0°-10°, heavily iron stained	EW HW EW HW EW HW EW			2.70-3.00: EWS Clay 3.15-3.23: CZ 3.23-3.27: EWS Clay 3.34-3.35: BP 5° Clay PR S 3.35-3.49: EWS 3.52-3.54: JT 0° Clay PR S
		3.78									
	0% Water LOSS	0% NO CORE	58		4.0 89.3		SILTSTONE: grey, indistinctly beddat at 0°-10°, iron stained	MW MW HW MW			3.69-3.78: EWS Clay 3.78-3.82: CZ 3.83: BP 5° CN PR S 3.89: BP 10° SN CU S 4.04: JT 20° CN PR S 4.09-4.13: JT 20 - 60° SN IR S 4.12-4.17: JT 50° Clay PR S
							4.37m				
				Is(50) d=0.08 a=0.18 MPa			INTERLAMINATED SILTSTONE (50%) AND SANDSTONE (50%) AT 0°-5°: brown-yellow, orange-brown siltstone, grey, fine to medium grained sandstone, iron stained	HW			4.33: BP 0° CN PR S 4.38-4.41: JT 40° Sand IR RF 4.44: JT 10 - 20° Clay CU S 4.47: JT 0 - 15° Clay CU S 4.52: BP 10° SN CU S 4.65: DB 4.78: BP 5° SN PR S
							4.80m				
					5.0 88.3		SILTSTONE: grey to dark grey, 10-15% sandstone laminations at 0°-10°, grey, fine grained	MW HW EW HW MW SW			5.08: JT 25° Healed 5.15: DB 5.24: BP 0° SN UN S 5.32-5.38: EWS Clay 5.38-5.42: CZ 5.47: BP 10° SN PR S 5.55: BP 0° SN PR S 5.61: BP 5° CN PR S 5.67: BP 10° CN PR S 5.75: BP 10° CN UN S
		6.09									
		0% NO CORE	74	Is(50) d=0.17 a=0.77 MPa	6.0 87.3			MW SW MW			5.97: DB 6.06: BP 0° CN PR S 6.08: BP 10° CN PR S 6.18-6.21: JT 40° CN PR S 6.21-6.23: JT 30° CN PR S 6.26: BP 5° Clay CU S 6.46-6.47: BP 5° Clay CU S 6.53: JT 10° CN IR RF 6.59: BP 0° CN PR S 6.66: DB 6.70: BP 0° CN CU S
	0% Water LOSS			UCS =16 MPa	7.0 86.3			SW			6.93: BP 0° CN PR S 7.07: DB 7.11: DB
				7.36m Is(50) d=0.01 a=1.36 MPa							7.33: BP 0° CN PR S 7.44: DB
							7.84m	MW EW SW			7.63: BP 0° Clay PR S 7.64-7.79: JT 75° CN PR S 7.79-7.84: EWS Clay
					8.0 85.3						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:43 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH3
FILE / JOB NO : 305001322
SHEET : 3 OF 3

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330736.410, N: 6261289.101 (56 MGA2020) SURFACE ELEVATION : 93.320 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 14/5/24 DATE COMPLETED : 14/5/24 DATE LOGGED : 14/5/24 LOGGED BY : SL CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 3.00 m BIT : Step BIT CONDITION : Fair

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
NMLC	0% Water LOSS	8.13	74		8.0 85.3		SANDSTONE: grey, fine to medium grained, 5-10% carbonaceous laminations at 0°-10° *(continued)*	SW			8.00: BP 0° Clay PR S 8.02: BP 0° CN CU S
		0% NO CORE	96								8.26: BP 0° CN PR S 8.36: BP 0° CN PR S 8.41: DB
											8.65-8.67: JT 5 - 20° Sandy Clay CU S
											8.86: DB 8.96: DB
				Is(50) d=0.11 a=0.6 MPa	9.0 84.3			MW			9.04: BP 0° CN PR S 9.07: JT 5 - 15° Clay IR S 9.17: BP 5° CN CU S
								SW			9.39-9.41: JT 0 - 15° Sandy Clay CU S
											9.71: JT 0 - 20° CN IR RF 9.74: JT 10° CN IR RF
					10.0 83.3						
		10.49									10.32: DB 10.47: DB
		0% NO CORE	100	Is(50) d=0.11 a=0.79 MPa			10.72m				10.72: BP 0° CN PR S
							SANDSTONE: grey, fine to medium grained, 5% carbonaceous laminations at 0°-10°	F			10.94: BP 5° CN CU S
					11.0 82.3						
					12.0 81.3						12.11: DB
				Is(50) d=0.8 a=2.86 MPa							12.41: DB
					13.0 80.3						12.85: DB 13.15: DB
		13.52									13.41: DB
		0% NO CORE	100	Is(50) d=1.24 a=1.54 MPa							13.82: DB 13.98: DB 14.14: DB 14.25: BP 10° CN PR S
					14.0 79.3						14.60: DB
		15.17			15.0 78.3		15.17m BOREHOLE BH3 TERMINATED AT 15.17 m Target depth				
					16.0 77.3						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:43 10.03.00.09

	TITLE: **Borehole Core Photographs – BH3** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 3** **2.7 – 7.0m (4.3m Length)**
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**

	TITLE: **Borehole Core Photographs – BH3** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 2 OF 3** **7.0 – 12.0m (5.0m Length)**
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**

	TITLE: **Borehole Core Photographs – BH3** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 3 OF 3** **12.00 – 15.17m (3.17m Length)**
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**

	TITLE:	**Borehole SPT Photographs – BH3** **27-29 Tryon Road, Lindfield**		
	PROJECT NO: **305001322**	TEST DATE: **14/05/2024**	INCLINATION: **-90 degree**	SPT PHOTOS
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO :BH4
FILE / JOB NO : 305001322
SHEET : 1 OF 4

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330776.684, N: 6261315.884 (56 MGA2020) SURFACE ELEVATION : 93.370 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 13/5/24 DATE COMPLETED : 13/5/24 DATE LOGGED : 13/5/24 LOGGED BY : SL CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
AD/T	0% LOSS	H	Not Encountered		0.0 93.4			0.14m CONCRETE			ROAD SURFACE
								FILL: SILTY SANDY CLAY: yellow-brown, grey, high plasticity, fine to medium grained sand, trace sub-angular, fine grained gravel	M		FILL
								0.40m SILTY CLAY: orange, high plasticity			RESIDUAL SOIL
							CH		M	F - St	
								0.80m SILTY CLAY: yellow, orange, red, grey to pale grey, medium to high plasticity			
				1.00m SPT 4, 4, 8 N=12	1.0 92.4						
		E		1.45m 1.50m							
				D			CI-CH		M	St	
				2.00m	2.0 91.4						
								2.30m SILTY CLAY: grey, red-brown, low to medium plasticity, trace ironstone gravels			
		F-H		2.50m SPT 14, 17, 6/50mm N=R 2.85m			CL-CI		M	H	
								2.85m Continued as Cored Drill Hole			
					3.0 90.4						
					4.0 89.4						
					5.0 88.4						
					6.0 87.4						
					7.0 86.4						
					8.0 85.4						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:44 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH4
FILE / JOB NO : 305001322
SHEET : 2 OF 4

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330776.684, N: 6261315.884 (56 MGA2020) SURFACE ELEVATION : 93.370 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 13/5/24 DATE COMPLETED : 13/5/24 DATE LOGGED : 13/5/24 LOGGED BY : SL CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 3.00 m BIT : Step BIT CONDITION : Fair

DRILLING					MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 93.4						
					1.0 92.4						
					2.0 91.4						
							2.85m START CORING AT 2.85m				
NMLC	0% LOSS	0% NO CORE	5	Is(50) d=0 a=0 MPa	3.0 90.4		SILTY CLAY: pale grey to grey, orange-brown, yellow-brown, low to medium plasticity, trace ironstone gravels (WEATHERED MATERIAL)				
							3.80m				
					4.0 89.4		SILTSTONE: grey to dark grey, yellow-brown, indistinctly bedded at 0°-5°, iron stained	HW			3.93-4.01: CZ 4.05: BP 5° CN PR S 4.11-4.21: CZ
		4.48									4.29-4.42: JT 90° Clay IR S
		0% NO CORE	64	Is(50) d=0.15 a=0.19 MPa				EW HW EW HW			4.47-4.48: CZ 4.48-4.52: EWS Clay 4.64: BP 0° CN PR S 4.65-4.71: EWS Clay 4.81: DB 4.88: DB
							5.00m				
					5.0 88.4		SILTSTONE: grey to dark grey, 10-15% sandstone laminations at 0°-15°, grey, fine grained	MW			5.00-5.12: JT 60 - 90° CN IR RF 5.17-5.35: JT 70 - 90° CN IR RF
								MW HW			5.57: BP 5° SN PR S 5.68: JT 10° SN CU S 5.75: JT 10° SN CU S 5.85: BP 5° CN CU S
	0% LOSS			Is(50) d=0.02 a=0.11 MPa	6.0 87.4			MW HW MW HW			6.24: BP 10° CN PR S
							6.60m				
							SANDSTONE: grey, fine to medium grained, 5-10% carbonaceous laminations at 0°-10°	MW			6.57: BP 5° CN PR S 6.62: BP 10° CN PR S 6.69-6.76: JT 80° CN IR RF
					7.0 86.4						6.86-6.92: CZ 6.92-7.12: JT 90° CN PR RF 7.12-7.17: CZ
		7.17									
		0% NO CORE	76	UCS =13 MPa 7.59m Is(50) d=0.02 a=0.7 MPa				SW			7.29: BP 0° CN PR S 7.59: DB
								MW			7.76: BP 0° CN CU S 7.78-7.93: JT 70° CN PR S 7.96: BP 10° CN UN S
					8.0 85.4						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:44 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH4
FILE / JOB NO : 305001322
SHEET : 3 OF 4

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330776.684, N: 6261315.884 (56 MGA2020) SURFACE ELEVATION : 93.370 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 13/5/24 DATE COMPLETED : 13/5/24 DATE LOGGED : 13/5/24 LOGGED BY : SL CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 3.00 m BIT : Step BIT CONDITION : Fair

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
NMLC	0% LOSS	0% NO CORE 8.61	76		8.0 85.4		SANDSTONE: grey, fine to medium grained, 5-10% carbonaceous laminations at 0°-10° *(continued)*	SW F EW F			8.06: BP 0° CN CU S 8.27-8.30: EWS Sandy Clay
	0% LOSS	0% NO CORE 10.81	90	Is(50) d=0.09 a=1.03 MPa	9.0 84.4			SW			8.79: BP 5° CN CU S 8.89: DB 9.14: BP 0° CN PR S 9.27-9.32: JT 80° CN UN RF 9.32-9.65: JT Healed
	0% LOSS	0% NO CORE 13.84	100	Is(50) d=0.18 a=0.84 MPa UCS =24 MPa 11.27m Is(50) d=1.12 a=1.06 MPa Is(50) d=0.85 a=1.75 MPa	10.0 83.4 11.0 82.4 12.0 81.4 13.0 80.4			MW SW F			9.65-9.67: BP 5° CN CU S 9.67-9.78: JT 70 - 90° CN IR RF 9.82: BP 10° Clay PR S 10.18: BP 10° CN PR S 10.36: DB 10.51: DB 10.91: BP 0° CN CU S 11.27: DB 11.41: DB 12.10: DB 12.49: DB 12.72: DB 12.85: DB 12.96: DB 13.04: BP 0° CN UN S
	0% LOSS	0% NO CORE	97	Is(50) d=0.14 a=1.94 MPa	14.0 79.4 15.0 78.4		15.35m SANDSTONE: pale grey to grey, medium to coarse grained, 5-10% carbonaceous laminations at 0°-10°	F			13.99: DB 14.11: DB 14.38: DB 14.73: DB 14.95: DB 15.12: DB 15.27: BP 5° CN PR S 15.35: BP 5° Clay CU S
					16.0 77.4						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:44 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO :BH4
FILE / JOB NO : 305001322
SHEET : 4 OF 4

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330776.684, N: 6261315.884 (56 MGA2020) SURFACE ELEVATION : 93.370 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 13/5/24 DATE COMPLETED : 13/5/24 DATE LOGGED : 13/5/24 LOGGED BY : SL CHECKED BY : TH

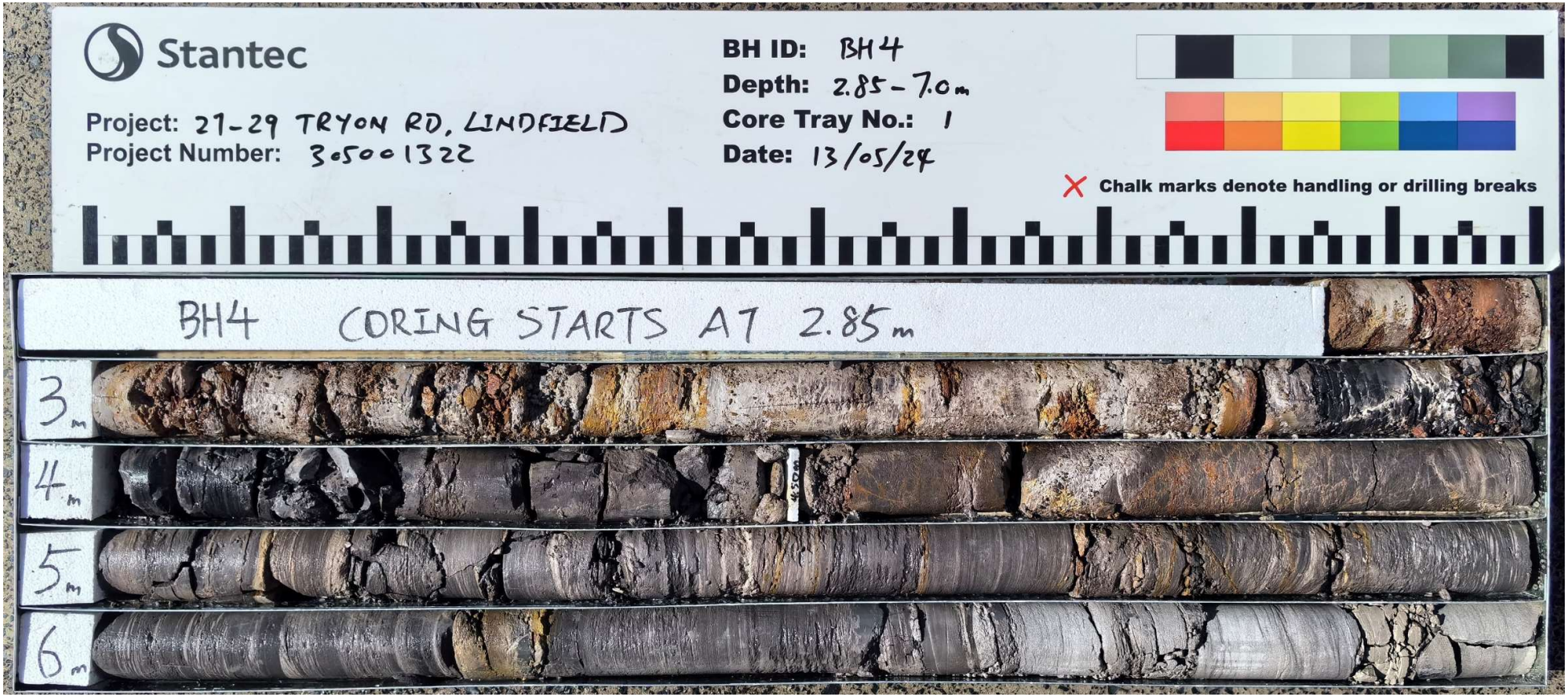
CASING DIAMETER : HQ BARREL (Length) : 3.00 m BIT : Step BIT CONDITION : Fair

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRILL DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
NMLC	0% LOSS	0% NO CORE 16.87	97	Is(50) d=0.77 a=0.8 MPa	16.0 77.4		SANDSTONE: pale grey to grey, medium to coarse grained, 5-10% carbonaceous laminations at 0°-10° *(continued)*	F			
							16.38m				
							SANDSTONE: pale grey to grey, medium to coarse grained, indistinctly bedded, <5% carbonaceous laminations at 0°-10°	F			
	0% LOSS	0% NO CORE 20.00	100	Is(50) d=0.85 a=0.72 MPa	17.0 76.4						
					18.0 75.4						18.46: DB
				Is(50) d=0.4 a=0.9 MPa	19.0 74.4						
					20.0 73.4		20.00m BOREHOLE BH4 TERMINATED AT 20.00 m Target depth				
					21.0 72.4						
					22.0 71.4						
					23.0 70.4						
					24.0 69.4						

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

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 STANTEC_305001322_LINDFIELD.GPJ <<DrawingFile>> 17/Jun/2024 15:44 10.03.00.09

	TITLE: **Borehole Core Photographs – BH4** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **13/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 1 OF 4** **2.7 – 7.0m (4.3m Length)**
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**



	TITLE: **Borehole Core Photographs – BH4** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **13/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 2 OF 4** **7.0 – 12.0m (5.0m Length)**
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**

	TITLE: **Borehole Core Photographs – BH4** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **13/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 3 OF 4** **12.0 – 17.0m (5.0m Length)**
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**

	TITLE: **Borehole Core Photographs – BH4** **27-29 Tryon Road, Lindfield**			
	PROJECT NO: **305001322**	TEST DATE: **13/05/2024**	INCLINATION: **-90 degree**	CORED LENGTH: **BOX 3 OF 4** **17.0 – 20.0m (3.0m Length)**
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**

	TITLE:	**Borehole SPT Photographs – BH4** **27-29 Tryon Road, Lindfield**		
	PROJECT NO: **305001322**	TEST DATE: **13/05/2024**	INCLINATION: **-90 degree**	SPT PHOTOS
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **SL**	CHECKED BY: **TH**

NON-CORE DRILL HOLE - GEOLOGICAL LOG

HOLE NO : BH5
FILE / JOB NO : 2025002
SHEET : 1 OF 5

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330729.13, N: 6261295.84 (56 MGA2020) SURFACE ELEVATION : 93.38 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 23/1/25 DATE COMPLETED : 24/1/25 DATE LOGGED : 24/1/25 LOGGED BY : AS CHECKED BY : TH

DRILLING						MATERIAL					
PROGRESS: DRILLING & CASING	PROGRESS: WATER	DRILLING PENETRATION	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION Soil Type, Colour, Plasticity or Particle Characteristic Secondary and Minor Components	MOISTURE CONDITION	CONSISTENCY RELATIVE DENSITY	STRUCTURE & Other Observations
					0.0 93.4			0.10m TOPSOIL: SILTY SAND: dark grey, fine to medium grained sand, trace fine gravel, rootlets	M		TOPSOIL
								FILL: SILTY CLAY: dark grey, medium to high plasticity	M		FILL
								0.40m SILTY CLAY: pale grey, medium to high plasticity			RESIDUAL SOIL
		E								F to St	
				1.00m SPT 6, 9, 11 N=20	1.0 92.4						
				1.45m			CI-CH		M		
		F								VSt to H	
AD/T HQ Casing			Not Encountered	2.50m SPT 9, 15, 16 N=31	2.0 91.4						
				2.95m				2.80m SILTSTONE: grey to dark grey, recovered as clayey silt, low plasicity, inferred extremely weathered, very low strength			BEDROCK
		H		4.00m SPT 10/50mm N=R	3.0 90.4				D		
					4.0 89.4			4.45m SILTSTONE: pale grey, recovered as gravelly silty clay, low plasticity, inferred moderately weathered, low to medium strength			
					5.0 88.4			5.00m Continued as Cored Drill Hole			
					6.0 87.4						
					7.0 86.4						
					8.0 85.4						

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

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RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA NON-CORE DRILL HOLE 2 LINDFIELD.GPJ <<DrawingFile>> 04/Feb/2025 12:34 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO : BH5
FILE / JOB NO : 2025002
SHEET : 2 OF 5

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330729.13, N: 6261295.84 (56 MGA2020) SURFACE ELEVATION : 93.38 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 23/1/25 DATE COMPLETED : 24/1/25 DATE LOGGED : 24/1/25 LOGGED BY : AS CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 1.50 m BIT : Stepped BIT CONDITION : Good

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRIL. DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● Axial ○ Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
					0.0 93.4						
					1.0 92.4						
					2.0 91.4						
					3.0 90.4						
					4.0 89.4						
					5.0 88.4		5.00m START CORING AT 5.00m				
NMLC				Is(50) d=0.24 a=1.55 MPa			SILTSTONE: dark grey, fractured, bedding planes at 0°-5°	MW			5.00-5.05: FZ 5.07: BP 0° S 5.08: BP 0° S 5.10: BP 0° S 5.12: BP 0° S
							5.28m SANDSTONE: orange to grey, fine to medium grained, with iron staining, bedding planes at 0°-5°	MW			5.20: JT 10° Clay RF 5.26: JT 10° Clay RF 5.28: BP 5° S 5.38: JT 10° RF 5.46: JT 5° IR RF
							5.77m SILTSTONE: dark grey, bedding planes at 0°-5°	HW SW			5.48: JT 5° S 5.62: JT 10° IR RF 5.68-5.70: CS Clay 5.78: JT 45° Clay IR RF 5.90: JT 10° RF 5.95: JT 15° RF
					6.0 87.4						6.01: BP 0° S 6.02: BP 0° S 6.03: BP 0° S 6.08: BP 0° S 6.10: BP 0° S 6.12: BP 0° S 6.15: BP 0° S 6.17: JT 15° RF 6.20: BP 0° S 6.24: JT 10° IR RF 6.50: DB 6.82: JT 10° Clay IR RF 6.95: HB 7.08: HB 7.31: BP 0° S 7.33: BP 10° S
				Is(50) d=0.18 a=0.45 MPa			6.85m				
					7.0 86.4		SANDSTONE: grey to pale grey, fine to medium grained, layered, bedding planes at 0°-20°				
				Is(50) d=0.2 a=0.4 MPa							7.73: BP 15° S 7.80: DB 7.94: BP 10° S
					8.0 85.4						

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

ELITE GEOSCIENCES PTY LTD

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 LINDFIELD.GPJ <<DrawingFiles>> 04/Feb/2025 12:25 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO : BH5
FILE / JOB NO : 2025002
SHEET : 3 OF 5

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330729.13, N: 6261295.84 (56 MGA2020) SURFACE ELEVATION : 93.38 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 23/1/25 DATE COMPLETED : 24/1/25 DATE LOGGED : 24/1/25 LOGGED BY : AS CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 1.50 m BIT : Stepped BIT CONDITION : Good

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRIL. DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
NMLC					8.0 85.4		SANDSTONE: grey to pale grey, fine to medium grained, layered, bedding planes at 0°-20° *(continued)*	SW			
				Is(50) d=0.72 a=0.95 MPa				MW			8.05-8.20: FZ
											8.50-8.88: FZ
					9.0 84.4						8.95-9.00: JTSub-vertical
				Is(50) d=0.5 a=1.02 MPa				SW			9.38: BP 5° S
							9.52m				
							INTERLAMINATED SILTSTONE (70%) AND SANDSTONE (30%) AT 0°-10°: dark grey siltstone, grey, fine grained sandstone, bedding planes at 0°-10°	SW			9.80: BP 5° S
											9.85-10.06: JTSub-vertical
					10.0 83.4						10.15: JT 45° IR RF
											10.22: DB
											10.70: HB
					11.0 82.4						10.92-11.04: JTSub-vertical
											11.07: BP 0° S
							11.22m				11.22: BP 0° S
							SANDSTONE: grey to pale grey, fine to medium grained, layered, bedding planes at 0°-40°				
				Is(50) d=0.46 a=0.63 MPa							11.60: HB
											11.88: BP 5° S
					12.0 81.4			F			12.00-12.03: HB
											12.06: BP 5° S
				Is(50) d=0.4 a=1.06 MPa							
					13.0 80.4						13.08: BP 15° S
											13.44: BP 15° S
				Is(50) d=0.5 a=0.96 MPa							13.60: BP 5° S
											13.78: HB
											13.85: HB
											13.95: HB
					14.0 79.4						13.97: HB
											14.10: BP 15° S
				Is(50) d=0.49 a=1.32 MPa							
					15.0 78.4						15.10: JT 10° Clay RF
											15.25: BP 15° S
											15.33-15.36: FZ
					16.0 77.4						15.95: BP 0° S

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

ELITE GEOSCIENCES PTY LTD

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 LINDFIELD.GPJ <<DrawingFiles>> 04/Feb/2025 12:25 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO : BH5
FILE / JOB NO : 2025002
SHEET : 4 OF 5

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330729.13, N: 6261295.84 (56 MGA2020) SURFACE ELEVATION : 93.38 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 23/1/25 DATE COMPLETED : 24/1/25 DATE LOGGED : 24/1/25 LOGGED BY : AS CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 1.50 m BIT : Stepped BIT CONDITION : Good

DRILLING						MATERIAL			FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRIL. DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
NMLC					16.0 77.4		SANDSTONE: grey to pale grey, fine to medium grained, layered, bedding planes at 0°-40° *(continued)*	F			16.40: BP 10° S
											16.75: BP 5° S
											16.79: BP 5° S
											16.88: DB
				Is(50) d=0.3 a=0.4 MPa	17.0 76.4						17.10: BP 5° S
											17.32: JT 15° S
											17.70: JT 15° S
				Is(50) d=0.2 a=0.4 MPa	18.0 75.4						18.50: JT 5° Clay RF
											18.70: JT 10° Clay RF
				Is(50) d=0.4 a=0.85 MPa	19.0 74.4			F			19.42: DB
											19.88: HB
				Is(50) d=0.8 a=1.3 MPa	20.0 73.4						20.61: HB
				Is(50) d=0.6 a=1.2 MPa	21.0 72.4						21.05: JT 5° RF
											21.48: JT 5° RF
				Is(50) d=0.8 a=1.3 MPa	22.0 71.4						22.20: JT 10° RF
											22.90: DB
				Is(50) d=0.8 a=1.2 MPa	23.0 70.4						23.06: JT 5° RF
					24.0 69.4						

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

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RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 LINDFIELD.GPJ <<DrawingFiles>> 04/Feb/2025 12:25 10.03.00.09

CORED DRILL HOLE LOG

HOLE NO : BH5
FILE / JOB NO : 2025002
SHEET : 5 OF 5

PROJECT : Geotechncial Investigation
LOCATION : 27-29 Tryon Road, Lindfield

POSITION : E: 330729.13, N: 6261295.84 (56 MGA2020) SURFACE ELEVATION : 93.38 (AHD) ANGLE FROM HORIZONTAL : 90°

RIG TYPE : MD300 MOUNTING : Track CONTRACTOR : Traccess DRILLER : SK

DATE STARTED : 23/1/25 DATE COMPLETED : 24/1/25 DATE LOGGED : 24/1/25 LOGGED BY : AS CHECKED BY : TH

CASING DIAMETER : HQ BARREL (Length) : 1.50 m BIT : Stepped BIT CONDITION : Good

DRILLING						MATERIAL				FRACTURES	
PROGRESS: DRILLING & CASING	PROGRESS: WATER	(NO CORE PER RUN %) DRIL. DEPTH	RQD (%)	SAMPLES & FIELD TESTS	DEPTH (m) RL (m AHD)	GRAPHIC LOG	DESCRIPTION ROCK TYPE : Colour, Grain size, Structure (texture, fabric, mineral composition, hardness alteration, cementation, etc as applicable)	Weathering	ESTIMATED STRENGTH Is(50) ● - Axial ○ - Diametral VL -0.1 L -0.3 M -1.0 H -3.0 VH -10.0 EH	NATURAL FRACTURE (mm) 20 40 100 300 1000	ADDITIONAL DATA (joints, partings, seams, zones, etc) Description, orientation, infilling or coating, shape, roughness, thickness, other
NMLC				Is(50) d=0.5 a=1.9 MPa	24.0 69.4		SANDSTONE: grey to pale grey, fine to medium grained, layered, bedding planes at 0°-40° *(continued)*	F			24.10: JT 30° RF 24.30: BP 5° RF 24.85: JT 20° RF
					25.00m 25.0 68.4		BOREHOLE BH5 TERMINATED AT 25.00 m Target depth				
					26.0 67.4						
					27.0 66.4						
					28.0 65.4						
					29.0 64.4						
					30.0 63.4						
					31.0 62.4						
					32.0 61.4						

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

ELITE GEOSCIENCES PTY LTD

RMS LIB 40.3 EXTERNAL REV1.3.GLB Log RTA CORED DRILL HOLE 5 LINDFIELD.GPJ <<DrawingFiles>> 04/Feb/2025 12:25 10.03.00.09

ELITE GEOSCIENCES

TITLE:

Borehole Core Photographs – 27-29 Tryon Road, Lindfield

PROJECT NO:	TEST DATE:	INCLINATION:	CORE LENGTH:
2025002	**23-24 Jan 2025**	**-90 degree**	**5m to 15m**
DRILL RIG:	CONTRACTOR:	LOGGED BY:	CHECKED BY:
MD300	**Traccess**	**AS/TH**	**TH**

ELITE GEOSCIENCES	TITLE: **Borehole Core Photographs – 27-29 Tryon Road, Lindfield**			
	PROJECT NO: **2025002**	TEST DATE: **23-24 Jan 2025**	INCLINATION: **-90 degree**	CORE LENGTH: **15m to 25m**
	DRILL RIG: **MD300**	CONTRACTOR: **Traccess**	LOGGED BY: **AS/TH**	CHECKED BY: **TH**

Appendix C Laboratory Test Results

Uniaxial Compressive Strength

Client	Stantec	**Sample Source**	BH1 8.80-8.94m
Address	Level 9 - The Forum, 203 Pacific Highway, St Leonards, New South Wales 2065	**Sample Description**	Sandstone
Project	27-29 Tryon Road Lindfield (305001322)	**Report #**	S96932-UCS
Job #	S24260-1	**Sample #**	S96932

Test Procedure	AS 4133.4.2.2 Determination of uniaxial compressive strength-Rock strength less than 50 MPa		
Sampling	Sampled by Client - results apply to the sample as received	**Date Sampled**	14/05/2024
Storage History	Sealed	**Storage Environment**	Sealed at as received moisture condition
Sample Curing	-	**Testing Machine**	Matest 2000 kN Compression Machine

Uniaxial Compressive Strength 7.3 MPa

Date Tested:	7/06/2024		Moisture Content:	9.5	%
Specimen Height:	141.4	mm	Duration of Test:	680	seconds
Average Specimen Diameter:	63.2	mm	Rate of Displacement:	< 0.1	mm/min
Failure Type:	Mixed mode				
Other Pertinent Observations:					
Deviation from Standard:	Test specimen length to diameter ratio falls outside of standard limitations of 2.5-3.0.				

NATA

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The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. This document shall not be reproduced, except in full.

Authorised Signatory:

Chris Lloyd

NATA Accredited Laboratory Number: 14874

Date: 11/06/2024

MACQUARIE GEOTECH

Macquarie Geotechnical
14 Carter St
Lidcombe NSW 2141

Uniaxial Compressive Strength

Client	Stantec	**Sample Source**	BH2 6.10-6.30m
Address	Level 9 - The Forum, 203 Pacific Highway, St Leonards, New South Wales 2065	**Sample Description**	Claystone
Project	27-29 Tryon Road Lindfield (305001322)	**Report #**	S96933-UCS
Job #	S24260-1	**Sample #**	S96933

Test Procedure	AS 4133.4.2.2 Determination of uniaxial compressive strength-Rock strength less than 50 MPa		
Sampling	Sampled by Client - results apply to the sample as received	**Date Sampled**	15/05/2024
Storage History	Sealed	**Storage Environment**	Sealed at as received moisture condition
Sample Curing	-	**Testing Machine**	Matest 2000 kN Compression Machine

Uniaxial Compressive Strength 0.22 MPa

Date Tested:	8/06/2024		Moisture Content:	11.2	%
Specimen Height:	137.6	mm	Duration of Test:	843	seconds
Average Specimen Diameter:	52.0	mm	Rate of Displacement:	< 0.1	mm/min
Failure Type:	Mixed mode				
Other Pertinent Observations:					

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Authorised Signatory:

Chris Lloyd

NATA Accredited Laboratory Number: 14874

Date: 11/06/2024

Macquarie Geotechnical
14 Carter St
Lidcombe NSW 2141

Uniaxial Compressive Strength

Client	Stantec	**Sample Source**	BH3 7.11-7.36m
Address	Level 9 - The Forum, 203 Pacific Highway, St Leonards, New South Wales 2065	**Sample Description**	Shale
Project	27-29 Tryon Road Lindfield (305001322)	**Report #**	S96934-UCS
Job #	S24260-1	**Sample #**	S96934

Test Procedure	AS 4133.4.2.2 Determination of uniaxial compressive strength-Rock strength less than 50 MPa		
Sampling	Sampled by Client - results apply to the sample as received	**Date Sampled**	14/05/2024
Storage History	Sealed	**Storage Environment**	Sealed at as received moisture condition
Sample Curing	-	**Testing Machine**	Matest 2000 kN Compression Machine

Uniaxial Compressive Strength 16 MPa

Date Tested:	11/06/2024		Moisture Content:	3.8	%
Specimen Height:	139.3	mm	Duration of Test:	685	seconds
Average Specimen Diameter:	51.8	mm	Rate of Displacement:	< 0.1	mm/min
Failure Type:	Mixed mode				
Other Pertinent Observations:					

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Authorised Signatory:

Chris Lloyd

NATA Accredited Laboratory Number: 14874

Date: 11/06/2024

Macquarie Geotechnical
14 Carter St
Lidcombe NSW 2141

Uniaxial Compressive Strength

Client	Stantec	**Sample Source**	BH4 7.36-7.59m
Address	Level 9 - The Forum, 203 Pacific Highway, St Leonards, New South Wales 2065	**Sample Description**	Sandstone
Project	27-29 Tryon Road Lindfield (305001322)	**Report #**	S96935-UCS
Job #	S24260-1	**Sample #**	S96935

Test Procedure	AS 4133.4.2.2 Determination of uniaxial compressive strength-Rock strength less than 50 MPa		
Sampling	Sampled by Client - results apply to the sample as received	**Date Sampled**	13/05/2024
Storage History	Sealed	**Storage Environment**	Sealed at as received moisture condition
Sample Curing	-	**Testing Machine**	Matest 2000 kN Compression Machine

Uniaxial Compressive Strength 13 MPa

Date Tested:	7/06/2024		Moisture Content:	8.8	%
Specimen Height:	144.2	mm	Duration of Test:	680	seconds
Average Specimen Diameter:	51.6	mm	Rate of Displacement:	< 0.1	mm/min
Failure Type:	Mixed mode				
Other Pertinent Observations:					

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Authorised Signatory:

Chris Lloyd

NATA Accredited Laboratory Number: 14874

Date: 11/06/2024

Macquarie Geotechnical
14 Carter St
Lidcombe NSW 2141

Uniaxial Compressive Strength

Client	Stantec	**Sample Source**	BH4 11.00-11.27m
Address	Level 9 - The Forum, 203 Pacific Highway, St Leonards, New South Wales 2065	**Sample Description**	Sandstone
Project	27-29 Tryon Road Lindfield (305001322)	**Report #**	S96936-UCS
Job #	S24260-1	**Sample #**	S96936

Test Procedure	AS 4133.4.2.2 Determination of uniaxial compressive strength-Rock strength less than 50 MPa		
Sampling	Sampled by Client - results apply to the sample as received	**Date Sampled**	13/05/2024
Storage History	Sealed	**Storage Environment**	Sealed at as received moisture condition
Sample Curing	-	**Testing Machine**	Matest 2000 kN Compression Machine

Uniaxial Compressive Strength 24 MPa

Date Tested:	7/06/2024		Moisture Content:	5.2	%
Specimen Height:	142.8	mm	Duration of Test:	688	seconds
Average Specimen Diameter:	51.7	mm	Rate of Displacement:	< 0.1	mm/min
Failure Type:	Mixed mode				
Other Pertinent Observations:					

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Authorised Signatory:

Chris Lloyd

NATA Accredited Laboratory Number: 14874

Date: 11/06/2024

Macquarie Geotechnical
14 Carter St
Lidcombe NSW 2141

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 353067

Client Details

Client	Macquarie Geotech (Sydney)
Attention	Jacob Lloyd
Address	3 Watt Dr, Bathurst, NSW, 2795

Sample Details

Your Reference	**S24260-1, 27-29 Tryon Rd Lindfield**
Number of Samples	4 Soil
Date samples received	04/06/2024
Date completed instructions received	04/06/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	12/06/2024
Date of Issue	12/06/2024

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Results Approved By
Diego Bigolin, Inorganics Supervisor

Authorised By
Nancy Zhang, Laboratory Manager

Misc Inorg - Soil					
Our Reference		353067-1	353067-2	353067-3	353067-4
Your Reference	UNITS	S96928	S96929	S96930	S96931
Sample ID		BH01	BH02	BH03	BH04
Depth		2.50-2.73	2.50-2.86	2.40-2.70	2.50-2.85
Type of sample		Soil	Soil	Soil	Soil
Date Sampled		14/05/2024	15/05/2024	14/05/2024	13/05/2024
Date prepared	-	04/06/2024	04/06/2024	04/06/2024	04/06/2024
Date analysed	-	07/06/2024	07/06/2024	07/06/2024	07/06/2024
pH 1:5 soil:water	pH Units	5.0	5.4	5.0	5.3
Electrical Conductivity 1:5 soil:water	µS/cm	51	30	30	27
Chloride, Cl 1:5 soil:water	mg/kg	38	<10	<10	<10
Sulphate, SO4 1:5 soil:water	mg/kg	47	32	42	38
Resistivity in soil*	ohm m	200	330	330	370

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA 22nd ED 2510 and Rayment & Lyons. Resistivity is calculated from Conductivity (non NATA). Resistivity (calculated) may not correlate with results otherwise obtained using Resistivity-Current method, depending on the nature of the soil being analysed.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Waters samples are filtered on receipt prior to analysis. Alternatively determined by colourimetry/turbidity using Discrete Analyser.

QUALITY CONTROL: Misc Inorg - Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			04/06/2024	1	04/06/2024	04/06/2024		04/06/2024	[NT]
Date analysed	-			07/06/2024	1	07/06/2024	07/06/2024		07/06/2024	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	1	5.0	4.9	2	99	[NT]
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1	1	51	58	13	105	[NT]
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10	1	38	44	15	103	[NT]
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10	1	47	56	17	114	[NT]
Resistivity in soil*	ohm m	1	Inorg-002	<1	1	200	170	16	[NT]	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported