PRELIMINARY GEOTECHNICAL INVESTIGATION

For Local Structure Plan

LOTS 50 and M1456
GREAT NORTHERN HIGHWAY
MUCHEA
WESTERN AUSTRALIA

DECEMBER 2020
Ref: 20049

FOR
Tallangatta Beef Pty Ltd
c/- iParks Property Group Pty

Brown Geotechnical

CONDITIONS RELATING TO THIS REPORT

1. This report has been prepared for the sole use of Tallangatta Beef Pty Ltd. It has been issued in accordance with the agreed terms and scope detailed in the proposal for the investigation. No responsibility or liability to any third party is accepted for any damages arising out of the use of this report.

2. This report has been prepared by suitably qualified and experienced personnel for the purposes stated herein. Every care is taken with the report as it relates to interpretation of sub-surface conditions, discussion of findings and recommendations given. No responsibility for the consequences of extrapolation by others is accepted by the company.

3. Findings and conclusions produced in the report are based on the investigation of the sub-surface through isolated locations. Conditions between investigated sites are based on extrapolation, interpretation and professional estimates. Unexpected variations in ground conditions often occur which cannot always be anticipated. The conclusions and recommendations in the report were considered accurate at the time of issue and based on certain assumptions at the time. Conditions and assumptions change with time and may affect the accuracy of the report.

4. Certain content within this report is based on information provided by the client and/or other parties and the accuracy of this information cannot be guaranteed.

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6. The recommendations of this report should be considered a starting point. Recommendations should be continuously reviewed during the earthworks stage as sub-surface information and results from monitoring become available. It is strongly recommended that the Company be retained to provide consultancy and/or inspections during the earthwork stages.

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1 Introduction

In November 2020 Brown Geotechnical was commissioned by iParks Property Group on behalf of the client – Tallangatta Beef Pty Ltd to undertake a preliminary geotechnical investigation for the development of a Local Structure Plan at Lots 50 and M1456 Great Northern Highway, Muchea (the site), refer Figure 1. This report presents the results of the investigation conducted at the site. The fieldwork was carried out over the 19th and 20th November 2020. Details of the site were supplied by planners iParks Property Group Pty.

Note: It should be noted that this is a preliminary geotechnical investigation for the development of a Local Structure Plan. In portions of the site where soils are non-homogenous, or where boundaries lines are drawn on Figures, for example between zones of different soil types or site classification, additional investigation should be undertaken. The conclusions in this report are based on limited sampling and testing, and should be used as starting point for further detailed investigations as the project proceeds.

2 Brief

The brief discussed with the planners required the report to address:

- Subsurface conditions.
- An estimate of existing soil classification in accordance with AS2870 (2011).
- Any earthworks required to obtain a classification suitable for development including estimated additional fill thickness requirements.
- The presents of uncontrolled fill.
- Estimated CBR for road pavement design.
- Suitability of existing soils for use in the development.
- An assessment of acid sulphate soil issues
- Estimated site permeability and likely drainage issues.

3 Desk Studies

The site covers approximately 213ha and consists of large fenced paddocks. The paddocks are mostly grass covered with some areas of trees. A small creek runs east west across the north of the site. The depth varies from 0.5m to 1m.

The geological map for the area indicates the majority of the site to be underlain by the Guildford Formation consisting of clay, sand, silt and gravels. Quartz sand is noted in the centre and along the eastern boundary, with lateritic gravels towards the north eastern corner.

The Perth Groundwater Map indicates the historical maximum groundwater level to be about 50m AHD, approximately 8m below ground level. It is understood that pre-development groundwater monitoring is to be carried out on the site by others.

The acid sulphate soil risk map for the area, indicates soils to be in the No Known Risk category.

The site rises eastwards from approx. 50m along the Great Northern Highway to 93m AHD in the north east. Some steeper slopes rise in the north east, likely associated with the outcropping laterite deposits noted on the geological map.

4 Fieldwork and Laboratory Testing

4.1 Scope of Work

As detailed in the Brown Geotechnical proposal, the following scope of work was undertaken:

- A desk study to determine likely soil types below the site.
- Follow-up fieldwork including a walk-over survey to determine any obvious geological features, hazards and ASS indicators.
- Test holes excavated at approximate 200m centres to confirm soil type identified in the desk study. Some areas allowed limited access, however enough information was collected for the preliminary report.
- Limited soil sampling was carried out for laboratory analysis to determine soil classification and geotechnical properties.
- Laboratory testing included: particle size distribution, Atterberg Limits, percent fines content and organic content.
- In the absence of any high-risk ASS indicators, no preliminary acid sulphate soil testing was required as initially indicated in the proposal.
- Organic content determination was carried out for potential blending ratios of topsoil with clean sand fill for use in the future development.
- Permeability testing was carried out typical soil types encountered for site drainage information.

Test locations are shown on Figure 1, with test hole logs enclosed in Appendix A and penetrometer plots in Appendix B.

4.2 Laboratory Testing

Soil samples were delivered to the NATA accredited Western Geotechnical Laboratory Services for geotechnical testing. The laboratory test certificates are presented in Appendix C.

5 Geotechnical Results

5.1 Subsurface Condition

Subsurface conditions encountered in the test holes and inferred from laboratory test results and PSP plots are described as follows:

5.1.1 Topsoil and Fill

Test holes encountered topsoil consisting of grey silty sand with organics, locally with rootlets. The topsoil varied in thickness from 0.1m to 0.15m, the average across the site being 0.1m.

No uncontrolled fill was encountered in test holes and there were no obvious signs of old structures, foundations or infill areas within the paddocks.

5.1.2 Sand with Silt

Fine to medium grained, sand with low to moderate silt content was encountered in all test holes below the topsoil in the central and north western portion of the site (refer Figure 2). Penetrometer tests show the material to be medium dense. The thickness varied from approximately 0.3m to 0.5m.

The sand extends to greater depths in the north eastern portion of the site, locally >2m and at one locality on the western boundary (refer Figure 2).

5.1.3 Sandy Gravel

Fine to medium grained, gravel with sand was encountered in all test holes below the topsoil in the southern portion of the site (refer Figure 2). Penetrometer tests show the material to be medium dense to dense. The thickness varied from approximately 0.1m to 0.55m.

5.1.4 Laterite (Cemented Sandy Gravel)

A very dense, often cemented, sandy gravel or Laterite was encountered at the surface in TH15 and TH16 on the eastern boundary. The excavator refused in the material at about 0.6m.

5.1.5 Gravelly Sand with Clay

Very dense, fine to medium grained sandy gravel with clay was encountered below the silty sand and sandy gravel areas of the site. The material was occasionally present at the surface in the center of the site in the vicinity of TH7, 11 and 12. Test results show the material to have a moderate fines content, intermediate to low plasticity with a low expansive nature. The material often became hard after about 1m due to pockets of iron rich cementation resulting in slow excavation and often caused refusal of the 5 tonne excavator.

5.1.6 Groundwater

No groundwater was not encountered in test holes. The Perth Groundwater Map indicates the historical maximum groundwater levels to be about 50m AHD, approximately 8m below ground level.

5.2 Laboratory Test Results

Laboratory test results are summarized in Table 1

Table 1 – Classification Test Results

Test Hole No.	Depth (m)	LL (%)	PL (%)	PI (%)	Particle Size Distribution			Organic (%)
					Fines (%)	Sand (%)	Gravel(%)	
TH01	0.2-0.5	NP	NP	NP	13	79	8	
TH06	1.5-2.0	31	13	21	27			
TH14	0.1							5.8
TH14	1.0-1.5	NP	NP	NP	22	71	7	
TH19	0.3-0.8				4	26	70	
TH19	1.0-1.5	28	14	14	19			
TH21	1.5-1.9	35	16	19	24			
TH29	0.1-0.5	NP	NP	NP	5	27	68	
TH29	0.5-1.1	23	17	6				
TH37	1.2-1.6	31	14	17	21			

*Non-plastic

5.3 Soil Permeability

Permeability test results are summarized in Table 2.

Table 2 – Permeability Test Results

Test Location	Testing Material	In-situ Permeability Test Result (m/s)	Drainage Characteristics
P1 (TH12)	Very dense gravelly sand with clay	*$1x10^{-9}$m/s	Poor
P2 (TH01)	Medium dense sand with silt	$5x10^{-4}$m/s	Moderate to Good
P3 (TH19)	Medium dense sandy gravel with silt	$6x10^{-4}$m/s	Moderate to Good

*Estimated: Minimal Soakage

6 Analysis and Conclusions

6.1 Subsurface Conditions (refer Figure 2)

The topsoil has an average thickness of 0.1m. Once the grass and roots are removed the topsoil will be relatively low in organic content. Testing a typical sample gave an organic content of 5.8%. It should be suitable for use as engineering fill when screened and blended with clean sand fill at a ratio of approximately 1:3 (screened topsoil : clean sand). Further testing following screening could bring the ratio down to 1:2 or 1:1 for some portions of the site.

Below the topsoil, much of the site is covered by 0.3-0.5m of granular soils with a moderate silt content (sand and gravels). These soils are non-cohesive, relatively free draining with moderate to good drainage characteristics.

These sand and gravels are underlain by a clayey subgrade across the majority of the site, except for the north east area. The soil is a very dense gravel with clay. The clayey subgrade extends to at least 2.0m. The soils have a moderate to low plastic fines content, an intermediate to low plasticity and a low expansive nature. The drainage in the clayey soil is poor. The material often becomes hard with iron cementation below about 1m which caused refusal of the 5 tonne excavator in most holes.

The north eastern area consists of deeper sands, with hard lateritic soils on the eastern boundary which caused refusal of the 5 tonne excavator close to the surface.

No uncontrolled fill was encountered in test holes.

With respect to the desk study and geological information obtained prior to the fieldwork, it appears that the sands discussed are not as extensive as anticipated, confined only to the north east area. The remainder of the site is underlain by the Guildford Formation as suggested, with the laterite deposits to the east.

6.2 Groundwater

No groundwater was not encountered in test holes. The Perth Groundwater Map indicates the historical maximum groundwater levels to be about 50m AHD, approximately 8m below ground level. It is likely that in times of heavy rainfall, the granular soils above of the clayey subgrade will saturate resulting in a perched water table. The soils would then likely drain towards the creek; or the deeper sand deposits from the raised lateritic area.

6.3 Site Classification and Fill Requirements

Based on this preliminary geotechnical investigation, test hole spacing and limited testing, the classification for the site in accordance with AS 2870 – 2011 can be divided in to two classes. The portion underlain by a clayey subgrade with moderate to low plastic fines content, low plasticity and low expansive nature has an existing classification of Class ‘S’. The portion underlain by deeper sand and laterite has an existing classification of Class ‘A’ (refer Figure 2 and Table 3).

To obtain a site classification of Class 'A' in all areas, additional sand fill will be required. A total of 1.8m of granular material will be required above the clayey subgrade. The approximate thickness of additional fill varies from 0.2m to 1.8m and is shown on Figure 2.

Further investigation will be required to determine the exact boundaries between the site classification zones for specific Lots, and the amount of sand fill required could vary.

Table 3 – Definition of Site Classifications (Australian Standard AS2870-2011)

Class	Foundation
A	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites with only slight ground movement for moisture changes (y_s<20mm).
M	Moderately reactive clay or silt sites, which can experience moderate ground movement from moisture changes (y_s 20-40mm).
H1	Highly reactive clay site, which can experience moderate to high ground movement from moisture changes (y_s 40-60mm)
H2	Highly reactive clay site, which can experience high ground movement from moisture changes (y_s 60-75mm)
E	Extremely reactive sites, which can experience extreme ground movement from moisture changes (y_s>75mm)
P	Sites which include: soft soils, such as soft clays or silts or loose sands; landslip; mine subsidence; collapsing soils; soils subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise

y_s: Characteristic Surface Movement

6.4 Earthworks

6.4.1 Introduction

All earthworks should be undertaken in accordance with AS3798-1996 “Guidelines on earthworks for commercial and residential developments”. This section should act as a guide to likely earthwork requirements for the site, pending a detailed investigation.

6.4.2 Topsoil and Fill Management

A thin layer of topsoil is present across the site. It is not suitable for foundation support and should be removed along with trees and roots then replaced with clean sand fill. The topsoil may be used in landscaping following the removal of any tree roots, unless screened and blended as described below. A geotechnical inspection will be required to confirm topsoil stripping.

6.4.1 Blending of Topsoil for use as Engineering Fill

Topsoil in most areas of the site appears to be of lower quality i.e. lower in organic and fines content. An option would be to blend the screened topsoil with clean sand fill to reduce the organic and fines content to acceptable levels for use in residential or commercial development. Limited testing on non-screened topsoil, but with grass and roots removed, suggest a ratio of approximately 1:3 (screened topsoil : clean sand) to be appropriate. Further testing following screening could bring the ration down to 1:2 or 1:1 for portions of the site.

Ongoing tests for organic and fines content would be required post screening and on the blended soil to confirm suitability for use in the development.

6.4.2 Proof Rolling

Following the removal of topsoil, prior to footing placement or placing any additional fill on site, the surface should be proof rolled to achieve at least 95% SMDD for residential and 98% SMDD for commercial developments.

6.4.3 Imported Fill Material

Any sand fill imported to obtain site formation levels should be compacted in layers not more than 300mm thick to at least 95% SMDD for residential and 98% SMDD for commercial developments. In-situ density tests should be carried out to calibrate a PSP to specific densities of the compacted material to check fill compaction. Moisture conditioning (wetting) of the sand may to be required to optimise compaction. Imported sand should ideally contain less than 5% non-plastic fines to maintain good drainage conditions.

Following excavation for foundations, the bases of pad and strip footings should also be compacted to achieve at least 95% SMDD for residential and 98% SMDD for commercial developments.

6.4.4 Earthwork Inspections

A geotechnical engineer should inspect the site following the removal of vegetation, trees, roots and unsuitable materials, and to confirm the compaction of the subsurface following proof rolling. Inspections and auditing of the earthworks should be carried out by the geotechnical engineer to enable confirmation of the final site classification.

6.5 Suitability of In-situ Soils as Engineering Fill

The majority of the in-situ sands, particularly in the central and north area, contain a moderate fines content but zero plasticity. The soils will be suitable for use as engineering fill in the future development but have a reduced permeability due to the raised silt content. Blending with clean sand fill would reduce the fines content and increase drainage potential.

The sandy gravel with clay could also be blended with clean sand to reduce the fines. The material may be appropriate as a base layer above the existing clayey subgrade if major earthworks are required and removal of the existing granular soils is necessary.

6.6 Design CBR

Assuming the subgrade material below the road pavement or car park areas will be the natural in-situ near surface sand, a design CBR of 20 is suitable pavement design. Pavements founded on the sandy gravels could have a higher CBR of at least 30. Pavements founded within imported sand fill will require CBR testing during earthworks.

6.7 Retaining Wall Parameters

The site is gently sloping to the west and some retaining maybe required in the development. The following retaining wall parameters have been based on a compacted dense sand soil with ϕ=40^o.

γ=19 kN/m^3
Ko=0.36
Ka=0.22
Kp=4.6

The parameters detailed above assume design of the retaining structure and compaction of the foundations are in accordance with AS 4678-2002, and that backfill material is composed of clean cohesionless sand.

6.8 Acid Sulphate Soils

The acid sulphate soil risk map for the area indicate soils below the site to be in the No Known Risk category. The walkover survey and descriptions from test holes indicated no soils associated with high-risk ASS.

6.9 Site Permeability and Drainage Recommendations

The near surface sand and gravels contain moderate fines, zero plasticity and are free draining. The drainage condition within the sands prior to proof rolling is moderate to good. Permeability of approx. 5x10^{-4}m/s was recorded. Permeability of the underlying clayey subgrade was poor.

For soakwell installation, additional sand fill may be required in some areas, especially where the clayey subgrade approaches the existing surface. A suitably designed drainage system would allow for the use of soakwells if sufficient height, say at least 1.2m, is obtained above the clayey subgrade and the groundwater. Further permeability testing and groundwater monitoring is recommended as part of the detailed geotechnical investigation to refine these observations.

If clean fill sand is to be imported on to the site to raise site formation levels, permeability can vary depending on the source, and could vary between 1x10^{-3} and a 1x10^{-5} m/s based on observed results on typical Perth fill sands.

Permeability and drainage conditions may be reduced during earthworks due to compaction of in-situ and imported sands. Over compaction during earthworks can seriously reduce soil permeability. It is recommended that further permeability testing be carried out following earthworks to confirm parameters used during drainage design.

BROWN GEOTECHNICAL

Ferry Haryono
Senior Geotechnical Engineer

Reviewed by
Ken Brown
Senior Geotechnical Engineer

REFERENCES

1. Standards Australia AS 2870 (2011). Residential Slabs and Footings – Construction.

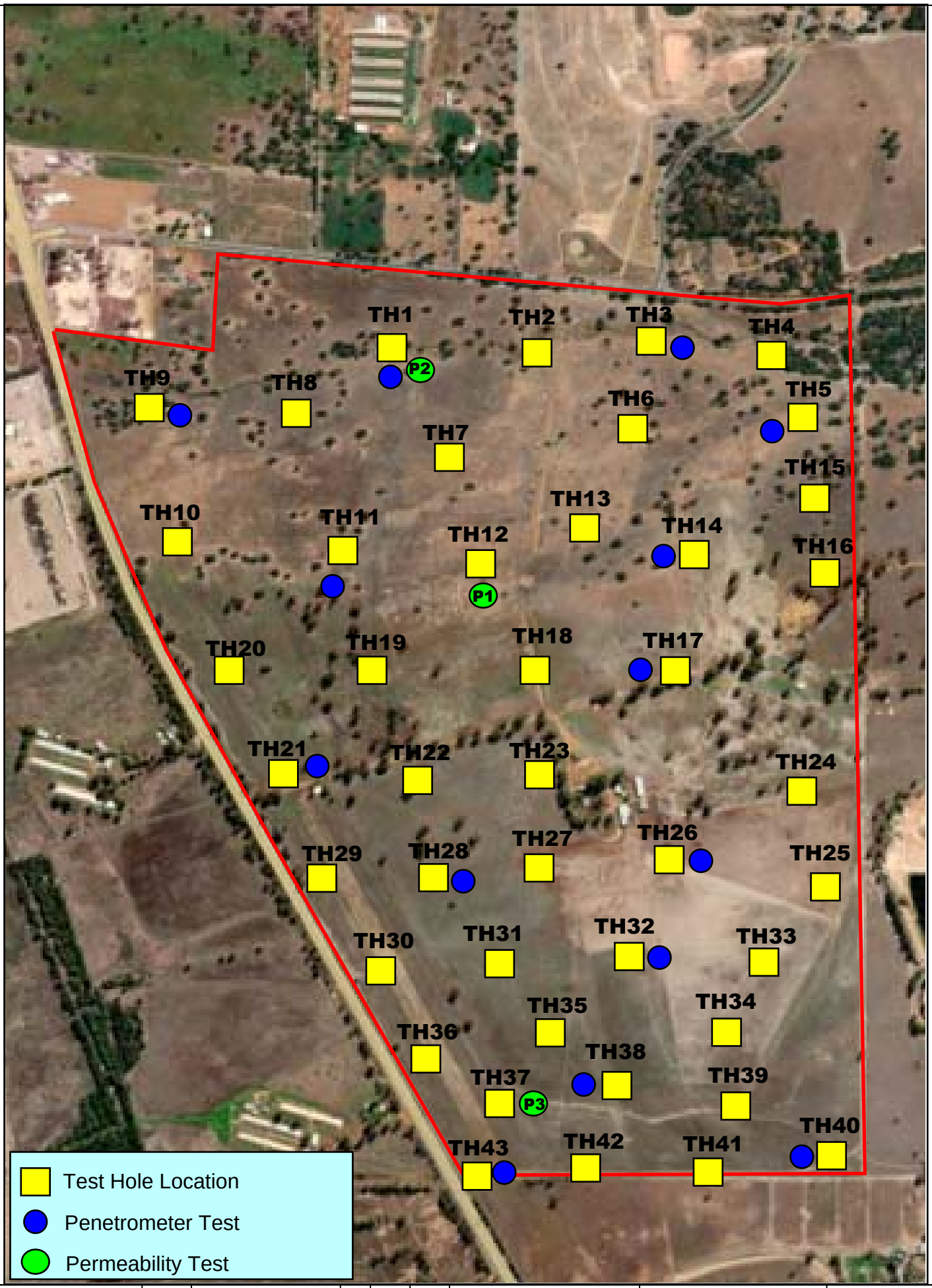
2. Geological Survey of Western Australia. 1:50,000 Environmental Geology Series, Perth.

3. Department of Water. *Perth Groundwater Map*

4. Standards Australia AS3798-2011. “Guidelines on earthworks for commercial and residential developments”.

5. Standards Australia AS 4678-2002. Earth-Retaining Structures.

FIGURES



BG
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Date	Description	Drawn	Checked	Approved
21.11.2020	Test Location Plan	kb	fh	kb

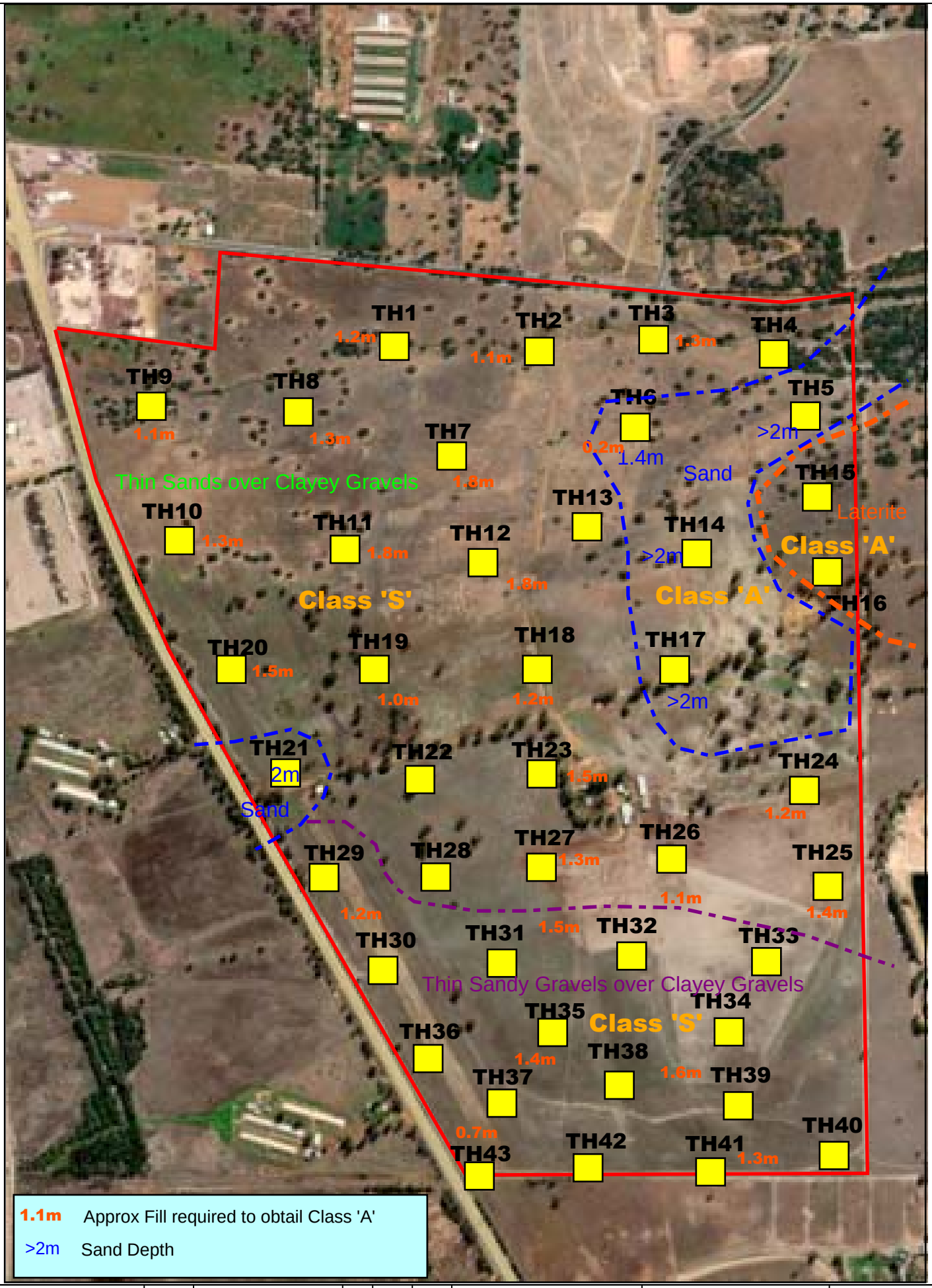
TEST LOCATION PLAN

LOTS 50 AND M1456
GREAT NORTHERN HIGHWAY
MUCHEA

CLIENT

Tallangatta Beef Pty Ltd

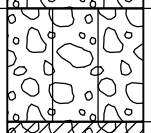
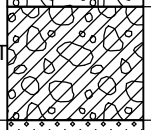
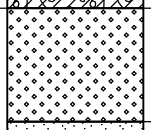
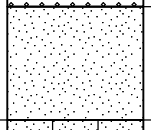
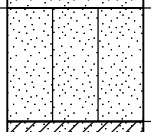
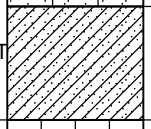
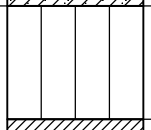
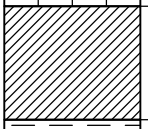
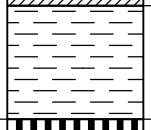
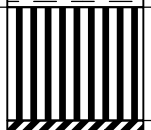
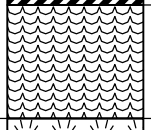
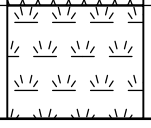
Drawing No. 20049 Fig1
Scale: NTS
Sheet Size: A4
Job No. 20049
FIGURE 1



BG Brown Geotechnical	Date	Description	Drawn	Checked	Approved	Subsoil Conditions	CLIENT	Drawing No. 20049 Fig2
	21.11.2020	Test Location Plan	kb	fh	kb			Scale: NTS
						LOTS 50 AND M1456 GREAT NORTHERN HIGHWAY MUCHEA	Tallangatta Beef Pty Ltd	Sheet SIze: A4
								Job No. 20049
								FIGURE 2

APPENDIX A

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BOREHOLE NUMBER TH01

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CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405491 6504955

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry	Fines=8% Sand=79% Gravel=13%	
			0.5					
	Not Encountered				GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0					
			1.5					
						REFUSAL Borehole TH01 terminated at 1.6m		
			2.0					
			2.5					

BOREHOLE NUMBER TH02

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR --- **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405738 6505809

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5					
	Not Encountered				GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0					
			1.5					
						REFUSAL Borehole TH02 terminated at 1.8m		
			2.0					
			2.5					

BOREHOLE NUMBER TH03

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405992 6505834

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5					
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0					
						REFUSAL Borehole TH03 terminated at 1m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH04

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406198 6505805

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
	Not Encountered		0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0					
			1.5					
						REFUSAL Borehole TH04 terminated at 1.6m		
			2.0					
			2.5					

BOREHOLE NUMBER TH05

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR --- **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406306 6505635

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
	Not Encountered		0.5		SP-SM	SAND: Medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			1.0					
			1.5					
			2.0					
						Borehole TH05 terminated at 2m		
			2.5					

BOREHOLE NUMBER TH06

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR --- **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406306 6505635

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered		0.0			TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5					
			1.0					
			1.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry	LL=34 PL=13 Fines=27% LS=6%	
			2.0			Borehole TH06 terminated at 2m		
			2.5					

BOREHOLE NUMBER TH07

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405567 6505550

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			0.5			REFUSAL Borehole TH07 terminated at 0.5m		
			1.0					
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH08

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405251 6505641

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GM	GRAVELLY SAND:Medium dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0			REFUSAL Borehole TH08 terminated at 1m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH09

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 404995 6505634

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5					
	Not Encountered				GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0					
			1.5					
			2.0					
						Borehole TH09 terminated at 2m		
			2.5					

BOREHOLE NUMBER TH10

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405083 6505388

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0			REFUSAL Borehole TH10 terminated at 0.9m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH11

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405447 6505378

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			0.5					
						REFUSAL Borehole TH11 terminated at 0.6m		
			1.0					
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH12

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405709 6505396

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			0.5			REFUSAL Borehole TH12 terminated at 0.5m		
			1.0					
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH13

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406306 6505635

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, yellowish brown & grey, with silt, trace gravel, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0			REFUSAL Borehole TH13 terminated at 1.1m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH14

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR _____ **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406082 6505424

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
	Not Encountered		0.5		SP-SM	SAND: Medium dense, fine to medium grained, yellowish brown & grey, with silt and gravel, dry	Fines=22% Sand= 71% Gravel=7%	
			1.0					
			1.5					
			2.0			Borehole TH14 terminated at 2m		
			2.5					

BOREHOLE NUMBER TH15

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406323 6505444

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered		0.5			TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	GRAVELLY SAND / LATERITE: Very dense (cemented), fine to coarse, brown, dry		
			1.0			REFUSAL Borehole TH15 terminated at 0.6m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH16

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** _____ **DATUM** _____

DRILLING CONTRACTOR _____ **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406312 6505233

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
			0.5		GPS	GRAVELLY SAND / LATERITE: Very dense (cemented), fine to coarse, brown, dry		
			1.0			REFUSAL Borehole TH16 terminated at 0.8m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH17

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR --- **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406063 6505177

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
	Not Encountered		0.5		SP-SM	SAND: Loose to medium dense, fine to coarse grained, grey, with silt, trace gravel, dry		
			1.0					
			1.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			2.0			REFUSAL Borehole TH17 terminated at 1.6m		
			2.5					

BOREHOLE NUMBER TH18

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405768 6505169

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to coarse grained, grey, with silt, trace gravel, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0					
			1.5					
						REFUSAL Borehole TH18 terminated at 1.6m		
			2.0					
			2.5					

BOREHOLE NUMBER TH19

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405463 6505127

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
	Not Encountered		0.5		GPS	SANDY GRAVEL: Medium dense to dense, fine to coarse grained, grey, trace silt, dry	Fines=4% Sand=26% Gravel=70%	
			1.0		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry	LL=28 PL=14 Fines=19% LS=4%	
			1.5			REFUSAL Borehole TH19 terminated at 1.8m		
			2.0					
			2.5					

BOREHOLE NUMBER TH20

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 20/10/20 **COMPLETED** 20/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405178 6505190

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense to dense, fine to coarse grained, grey, trace silt, dry		
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			0.5					
			1.0					
			1.5					
						REFUSAL Borehole TH20 terminated at 1.6m		
			2.0					
			2.5					

BOREHOLE NUMBER TH21

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405246 6504978

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
	Not Encountered		0.5		SP-SM	SAND: Medium dense, fine to coarse grained, yellowish brown & grey, with silt, trace gravel, dry		
			1.0					
			1.5			with some clay below 1.5m	LL=35 PL=16 Fines=24% LS=6%	
			2.0					
						Borehole TH21 terminated at 2m		
			2.5					

BOREHOLE NUMBER TH22

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405246 6504978

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5					
	Not Encountered				GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0					
			1.5					
						REFUSAL Borehole TH22 terminated at 1.9m		
			2.0					
			2.5					

BOREHOLE NUMBER TH23

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405762 405762

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0			REFUSAL Borehole TH23 terminated at 0.8m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH24

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406273 6504973

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5					
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
						REFUSAL Borehole TH24 terminated at 0.7m		
			1.0					
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH25

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR --- **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406284 6504795

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
						REFUSAL Borehole TH25 terminated at 0.7m		
			1.0					
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH26

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405946 6504827

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0			REFUSAL Borehole TH26 terminated at 1m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH27

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405784 6504955

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt, trace gravel, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
						REFUSAL Borehole TH27 terminated at 0.7m		
			1.0					
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH28

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405541 6504777

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					SP-SM	SAND: Loose to medium dense, fine to medium grained, grey, with silt and gravel, dry		
			0.5					
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0					
						REFUSAL Borehole TH28 terminated at 1m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH29

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405342 6504804

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry	Fines=5% Sand=27% Gravel=68%	
	Not Encountered		0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry	LL=23 PL=17 LS=2%	
			1.0					
						REFUSAL Borehole TH29 terminated at 1.3m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH30

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR --- **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405416 6504605

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
	Not Encountered		0.5					
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown, dry		
			1.0					
						REFUSAL Borehole TH30 terminated at 1.3m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH31

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR --- **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405570 6504604

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
						REFUSAL Borehole TH31 terminated at 0.7m		
			1.0					
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH32

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405859 6504616

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0			REFUSAL Borehole TH32 terminated at 0.8m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH33

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405984 6504614

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0			REFUSAL Borehole TH33 terminated at 0.7m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH34

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406020 6504417

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0			REFUSAL Borehole TH34 terminated at 1m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH35

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405736 6504450

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0			REFUSAL Borehole TH35 terminated at 0.9m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH36

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405519 6504466

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0			REFUSAL Borehole TH36 terminated at 0.7m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH37

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405588 6504333

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
	Not Encountered		0.5					
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0				LL=31 PL=14 Fines=21% LS=6%	
			1.5					
						REFUSAL Borehole TH37 terminated at 1.6m		
			2.0					
			2.5					

BOREHOLE NUMBER TH38

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405777 6504329

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Medium dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0			REFUSAL Borehole TH38 terminated at 0.7m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH39

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406096 6504327

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Dense, fine to medium grained, grey, with silt, dry		
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			0.5			REFUSAL Borehole TH39 terminated at 0.5m		
			1.0					
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH40

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406357 6504220

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Dense, fine to medium grained, grey, with silt, dry		
			0.5					
					GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0					
						REFUSAL Borehole TH40 terminated at 1m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH41

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 406108 6504220

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Dense, fine to medium grained, grey, with silt, dry		
	Not Encountered		0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0					
			1.5			REFUSAL Borehole TH41 terminated at 1.6m		
			2.0					
			2.5					

BOREHOLE NUMBER TH42

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** **DATUM**

DRILLING CONTRACTOR **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405842 6504214

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
	Not Encountered					TOPSOIL: Loose, dark grey, silty sand with rootlets		
					GPS	SANDY GRAVEL: Dense, fine to medium grained, grey, with silt, dry		
			0.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			1.0					
						REFUSAL Borehole TH42 terminated at 1.3m		
			1.5					
			2.0					
			2.5					

BOREHOLE NUMBER TH43

BG Brown Geotechnical

CLIENT Tallangatta Beef Pty Ltd **PROJECT NAME** LOTS 50 and M1456

PROJECT NUMBER 20049 **PROJECT LOCATION** MUCHEA

DATE STARTED 21/10/20 **COMPLETED** 21/10/20 **R.L. SURFACE** --- **DATUM** ---

DRILLING CONTRACTOR --- **SLOPE** 90° **BEARING** ---

EQUIPMENT 5 tonne excavator **HOLE LOCATION** 405652 6504213

HOLE SIZE 0.5mx1.5m **LOGGED BY** FH **CHECKED BY** KB

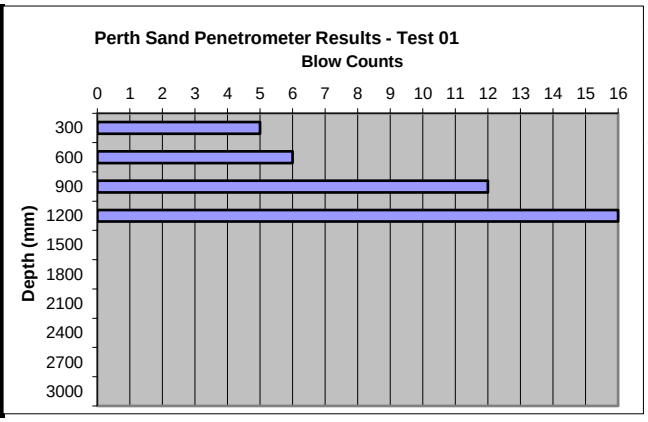
NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Loose, dark grey, silty sand with rootlets		
	Not Encountered		0.5		GPS	SANDY GRAVEL: Dense, fine to medium grained, grey, with silt, dry		
			1.0					
			1.5		GP-GC	GRAVELLY SAND with CLAY: Very dense, fine to coarse, yellowish brown & grey, dry		
			2.0			REFUSAL Borehole TH43 terminated at 1.8m		
			2.5					

APPENDIX B

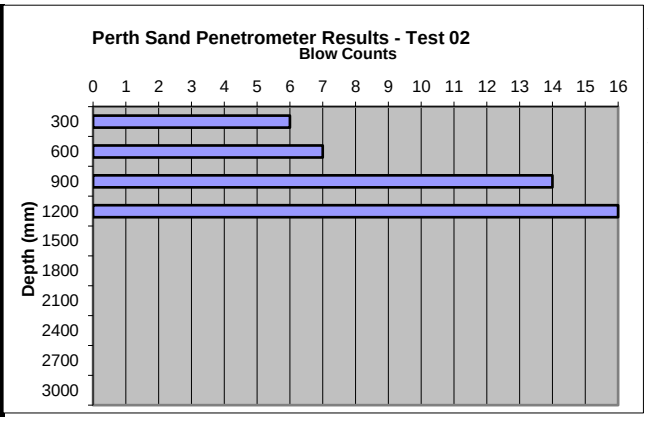
Perth Sand Penetrometer Test Plots

Depth (mm)	Blow Counts
300	5
600	6
900	12
1200	16
1500	
1800	
2100	
2400	
2700	
3000	



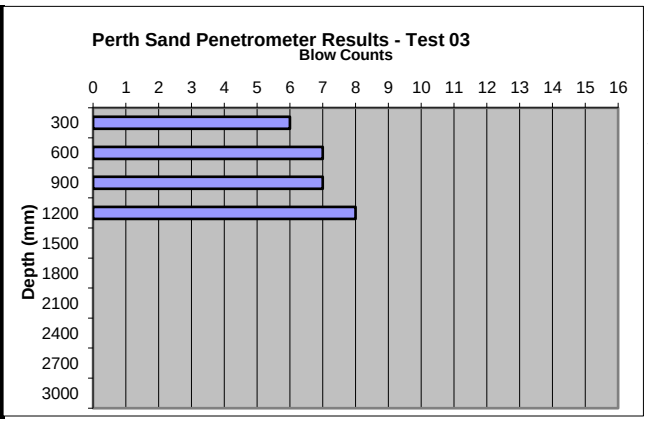
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH01

Depth (mm)	Blow Counts
300	6
600	7
900	14
1200	16
1500	
1800	
2100	
2400	
2700	
3000	



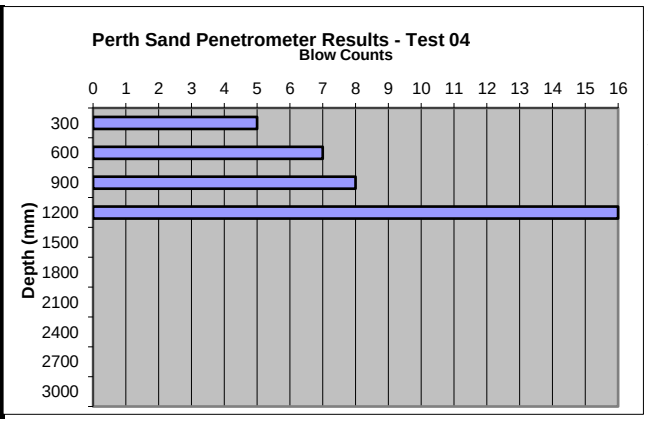
Job Name: Lot 50 & M1456
Job No: 20049
Date: 20/11/2020
Location: TH03

Depth (mm)	Blow Counts
300	6
600	7
900	7
1200	8
1500	
1800	
2100	
2400	
2700	
3000	



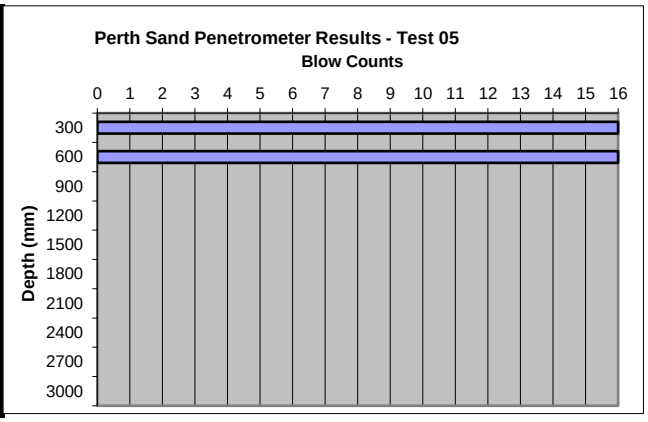
Job Name: Lot 50 & M1456
Job No: 20049
Date: 20/11/2020
Location: TH05

Depth (mm)	Blow Counts
300	5
600	7
900	8
1200	16
1500	
1800	
2100	
2400	
2700	
3000	



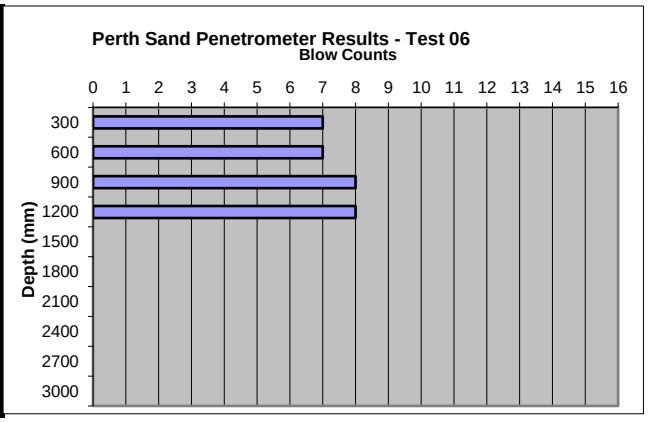
Job Name: Lot 50 & M1456
Job No: 20049
Date: 20/11/2020
Location: TH09

Depth (mm)	Blow Counts
300	16
600	16
900	
1200	
1500	
1800	
2100	
2400	
2700	
3000	



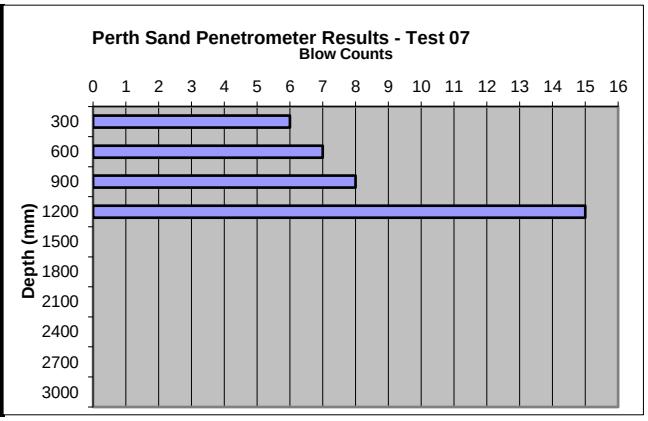
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH11

Depth (mm)	Blow Counts
300	7
600	7
900	8
1200	8
1500	
1800	
2100	
2400	
2700	
3000	



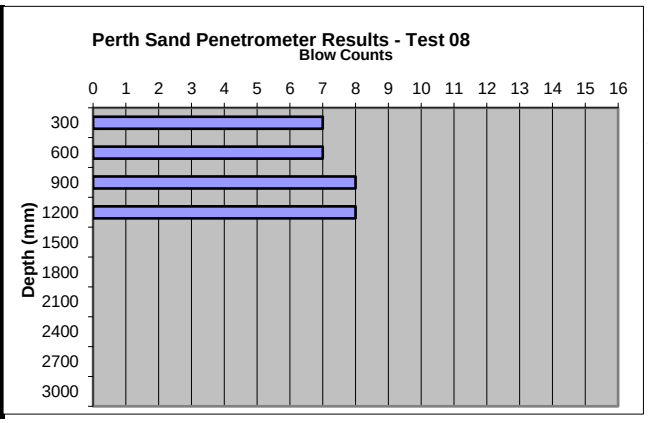
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH14

Depth (mm)	Blow Counts
300	6
600	7
900	8
1200	15
1500	
1800	
2100	
2400	
2700	
3000	



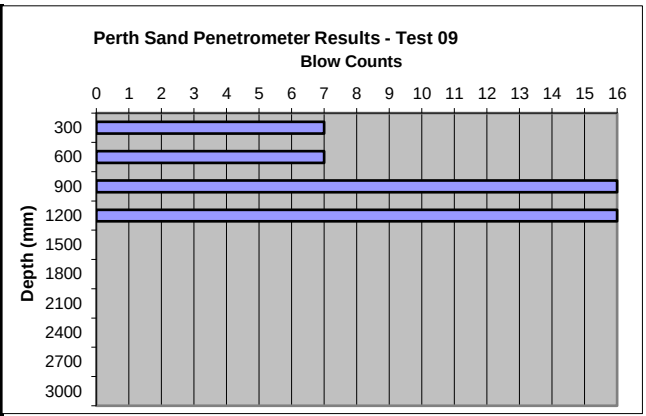
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH17

Depth (mm)	Blow Counts
300	7
600	7
900	8
1200	8
1500	
1800	
2100	
2400	
2700	
3000	



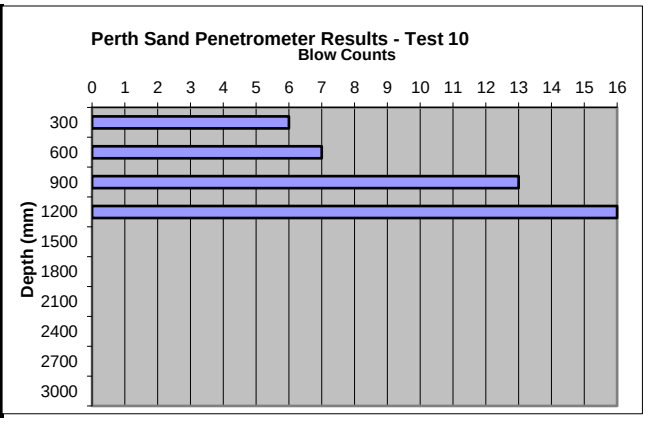
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH21

Depth (mm)	Blow Counts
300	7
600	7
900	16
1200	16
1500	
1800	
2100	
2400	
2700	
3000	



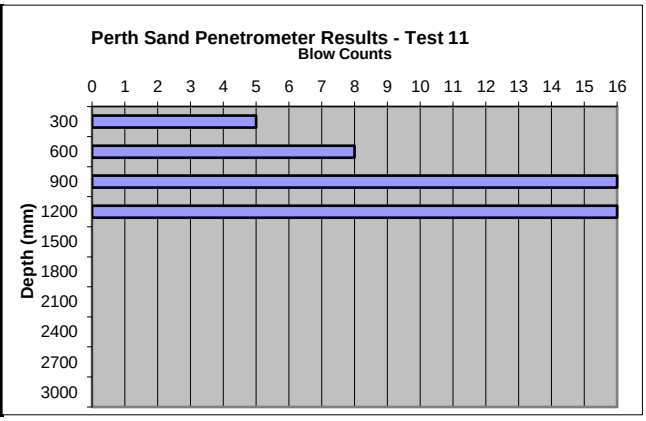
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH26

Depth (mm)	Blow Counts
300	6
600	7
900	13
1200	16
1500	
1800	
2100	
2400	
2700	
3000	



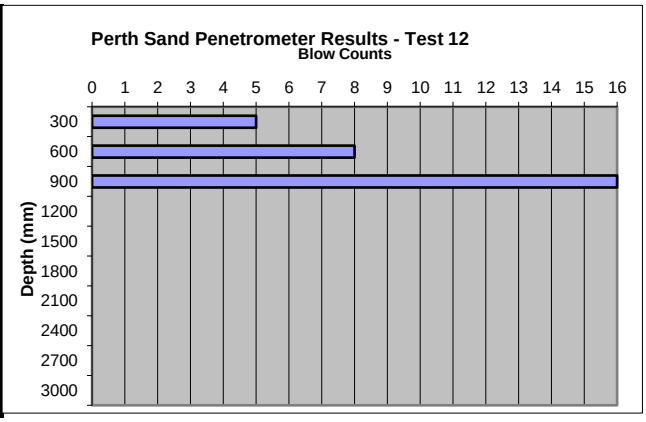
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH28

Depth (mm)	Blow Counts
300	5
600	8
900	16
1200	16
1500	
1800	
2100	
2400	
2700	
3000	



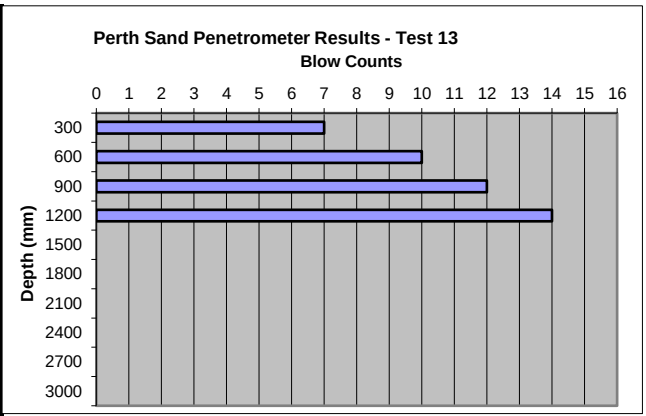
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH32

Depth (mm)	Blow Counts
300	5
600	8
900	16
1200	
1500	
1800	
2100	
2400	
2700	
3000	



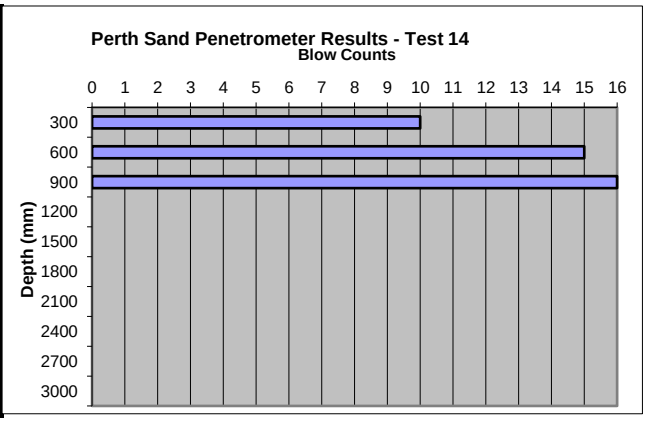
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH38

Depth (mm)	Blow Counts
300	7
600	10
900	12
1200	14
1500	
1800	
2100	
2400	
2700	
3000	



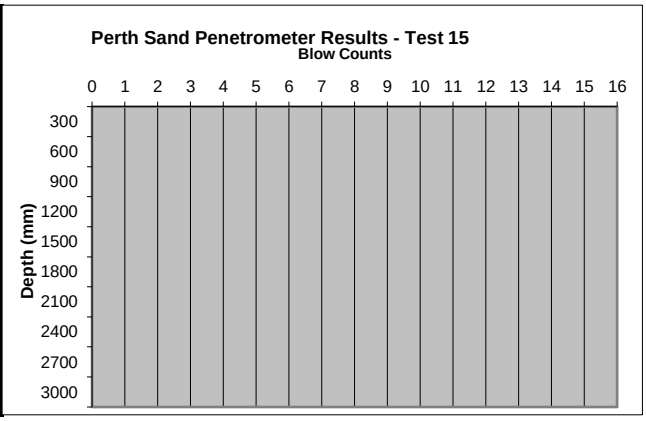
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH40

Depth (mm)	Blow Counts
300	10
600	15
900	16
1200	
1500	
1800	
2100	
2400	
2700	
3000	



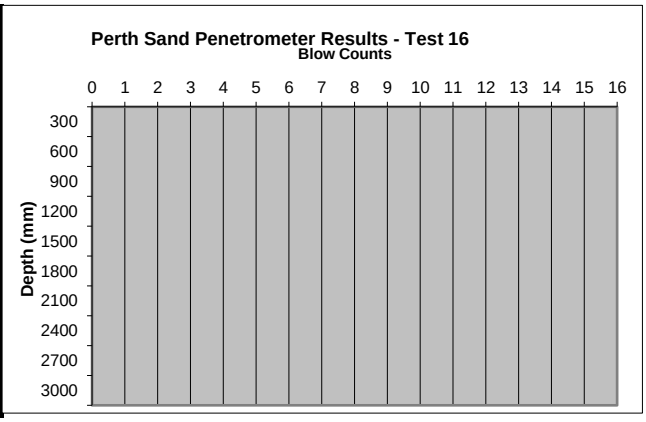
Job Name: Lot 50 & M1456 Muchae
Job No: 20049
Date: 20/11/2020
Location: TH43

Depth (mm)	Blow Counts
300	
600	
900	
1200	
1500	
1800	
2100	
2400	
2700	
3000	



Job Name:
Job No:
Date:
Location:

Depth (mm)	Blow Counts
300	
600	
900	
1200	
1500	
1800	
2100	
2400	
2700	
3000	



Job Name:
Job No:
Date:
Location:

APPENDIX C

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

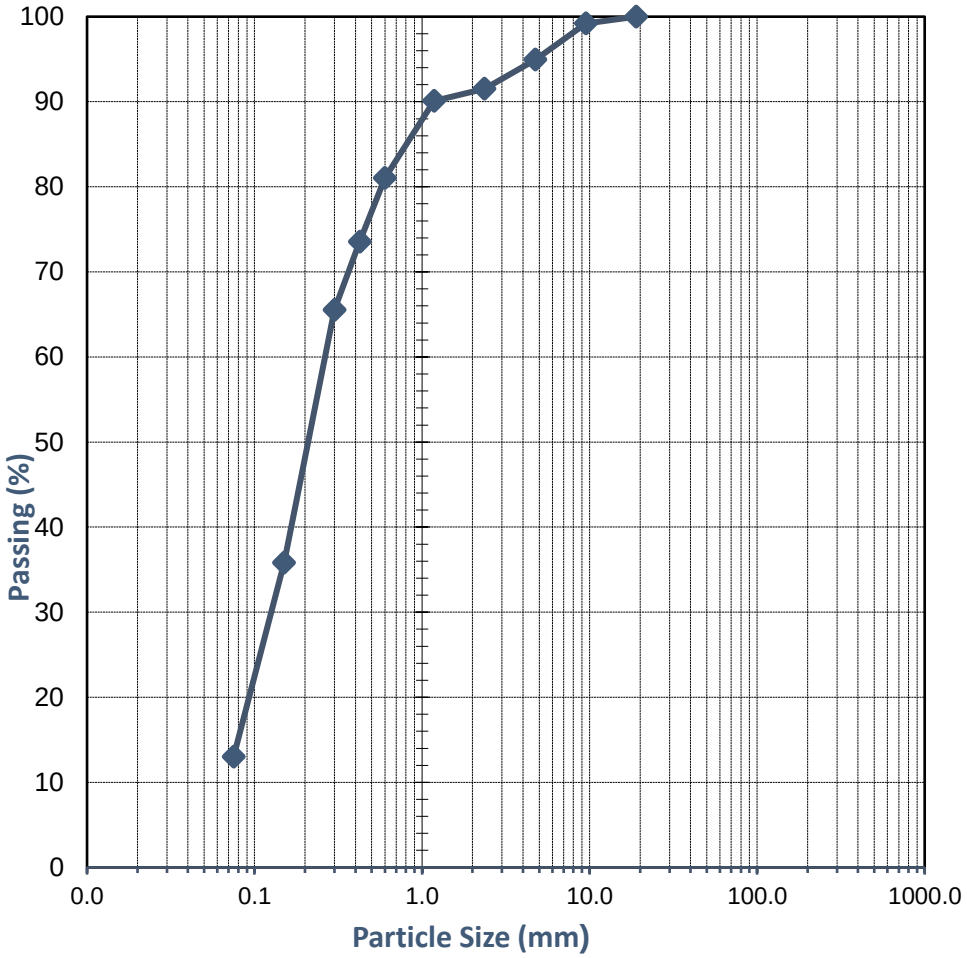
TEST REPORT - AS 1289.3.6.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9800_1_PSD
Project:	Tallangatta	*Sample No.*	WG20/9800
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH1 0.2-0.5m	*Date Tested:*	28-29/10/2020

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method: Sampled by Client, Tested as Received

Sieve Size (mm)	Percent Passing Sieve (%)
150.0	
100.0	
75.0	
37.5	
19.0	100
9.5	99
4.75	95
2.36	92
1.18	90
0.600	81
0.425	74
0.300	66
0.150	36
0.075	13



Comments:

Approved Signatory:

Name: Brooke Elliott

Date: 30-October-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

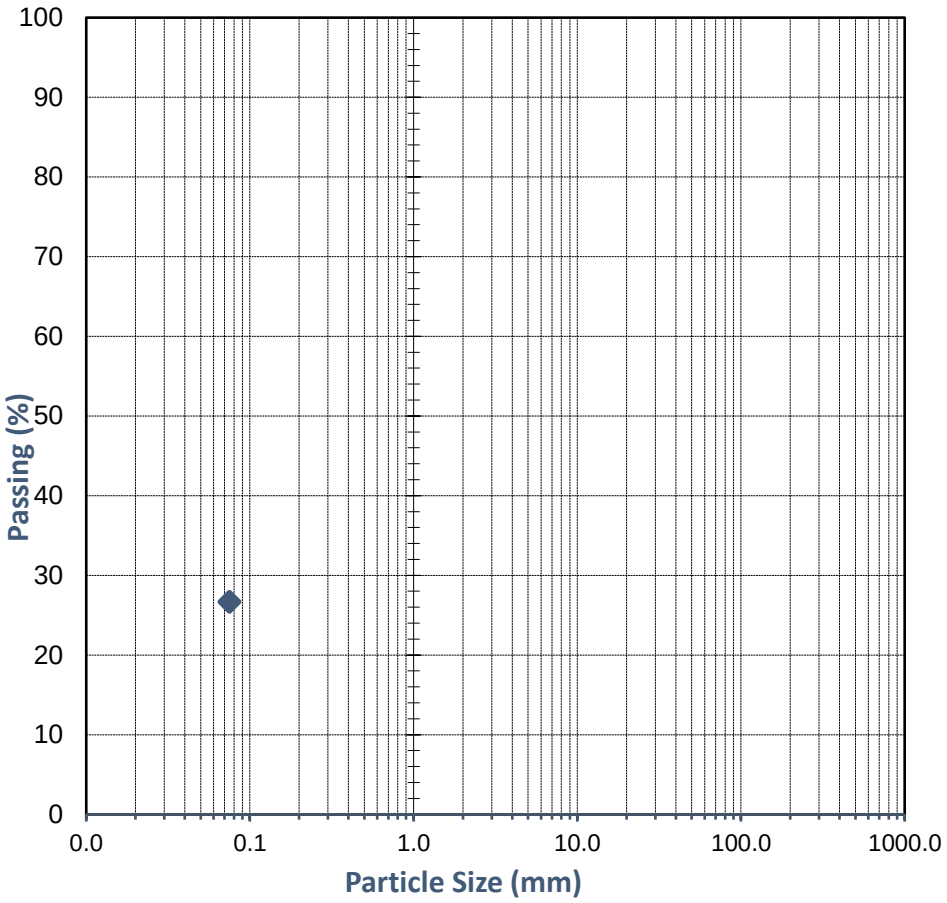
TEST REPORT - AS 1289.3.6.1 (% Fines)

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9801_1_%FINES
Project:	Tallangatta	*Sample No.*	WG20/9801
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH6 1.5-2.0m	*Date Tested:*	28-29/10/2020

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method: Sampled by Client, Tested as Received

Sieve Size (mm)	Percent Passing Sieve (%)
75.0	
37.5	
19.0	
9.5	
4.75	
2.36	
1.18	
0.600	
0.425	
0.300	
0.150	
0.075	27



Comments: Clients request for the % Fines of Material passing 0.075mm only.

Approved Signatory:

Name: Brooke Elliott

Date: 30-October-2020

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.1.1, 3.2.1, 3.3.1 & 3.4.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9801_1_PI
Project:	Tallangatta	*Sample No.*	WG20/9801
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH6 1.5-2.0m	*Date Tested:*	29-10-2020

TEST RESULTS - Consistency Limits (Casagrande)

Sampling Method:	**Sampled by Client, Tested as Received**
History of Sample:	**Oven Dried <50°C**
Method of Preparation:	**Dry Sieved**

AS 1289.3.1.1	**Liquid Limit (%)**	**34**
AS 1289.3.2.1	**Plastic Limit (%)**	**13**
AS 1289.3.3.1	**Plasticity Index (%)**	**21**
AS 1289.3.4.1	**Linear Shrinkage (%)**	**6.5**
AS 1289.3.4.1	**Length of Mould (mm)**	**250**
AS 1289.3.4.1	**Condition of Dry Specimen:**	**Cracked, Curled**

Comments:

Approved Signatory:

Name: Brooke Elliott

Date: 02-November-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599

Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - ASTM D2974-14 (Test Method C)

Client:	Brown Geotechnical	*Ticket No.*	S1ϕнy
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/ϕулл_1_ORG
Project:	Tallangatta	*Sample No.*	WG20/9802-1
Location:	Muchae	*Date Sampled:*	2л-мл-2020
Sample Identification:	TH14 0.1m	*Date Tested:*	нy-мл-2020

TEST RESULTS - Organic Content

Sampling Method: Sampled by Client, Tested as Received

Testing Completed By: KT

Furnace Temperature (°C): 440

Sample Number	Sample Identification	Ash Content (%)	Organic Content (%)
WG20/9802-1	S1	94.2	5.8
0	0	#DIV/0!	#DIV/0!
0	0	#DIV/0!	#DIV/0!
0	0	#DIV/0!	#DIV/0!
0	0	#DIV/0!	#DIV/0!
0	0	#DIV/0!	#DIV/0!
0	0	#DIV/0!	#DIV/0!
0	0	#DIV/0!	#DIV/0!
0	0	#DIV/0!	#DIV/0!

Comments:

Approved Signatory:

Name: Brooke Elliott

Date:30-October-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599

Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

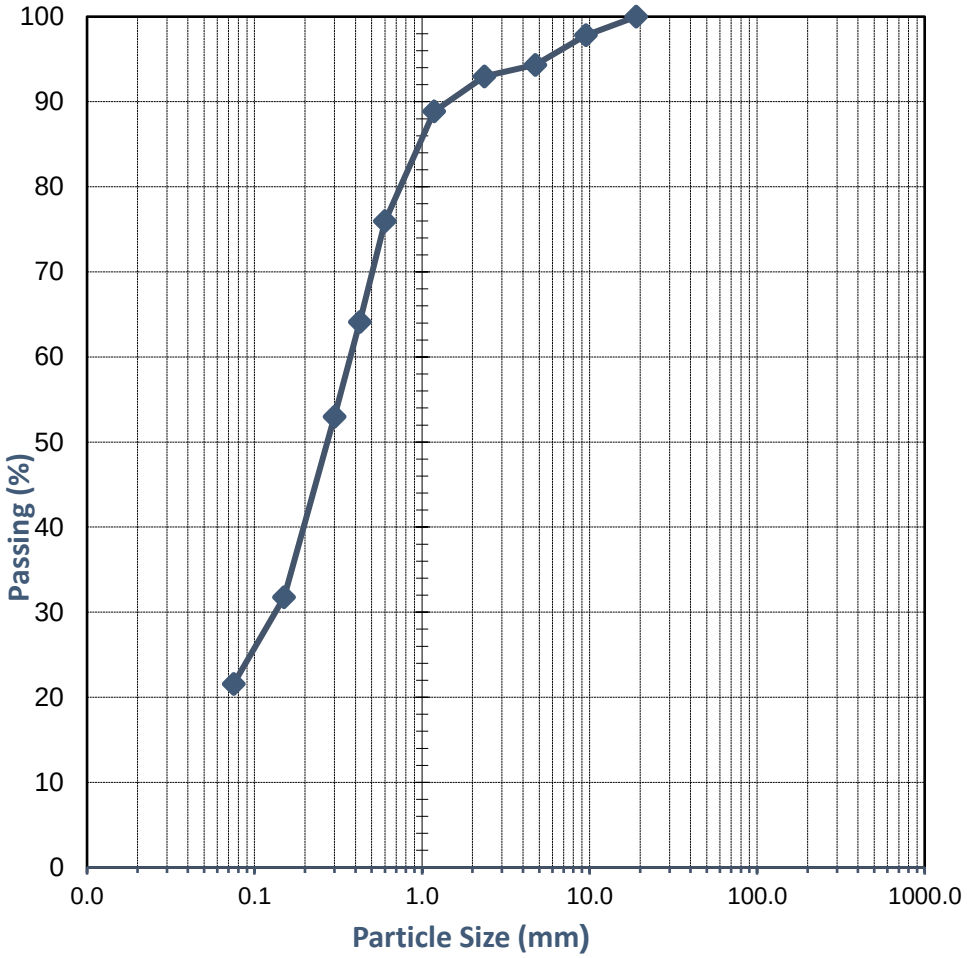
TEST REPORT - AS 1289.3.6.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9802_1_PSD
Project:	Tallangatta	*Sample No.*	WG20/9802
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH14 1.0-1.5m	*Date Tested:*	28-29/10/2020

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method: Sampled by Client, Tested as Received

Sieve Size (mm)	Percent Passing Sieve (%)
150.0	
100.0	
75.0	
37.5	
19.0	100
9.5	98
4.75	94
2.36	93
1.18	89
0.600	76
0.425	64
0.300	53
0.150	32
0.075	22



Comments:

Approved Signatory:

Name: Brooke Elliott

Date: 30-October-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

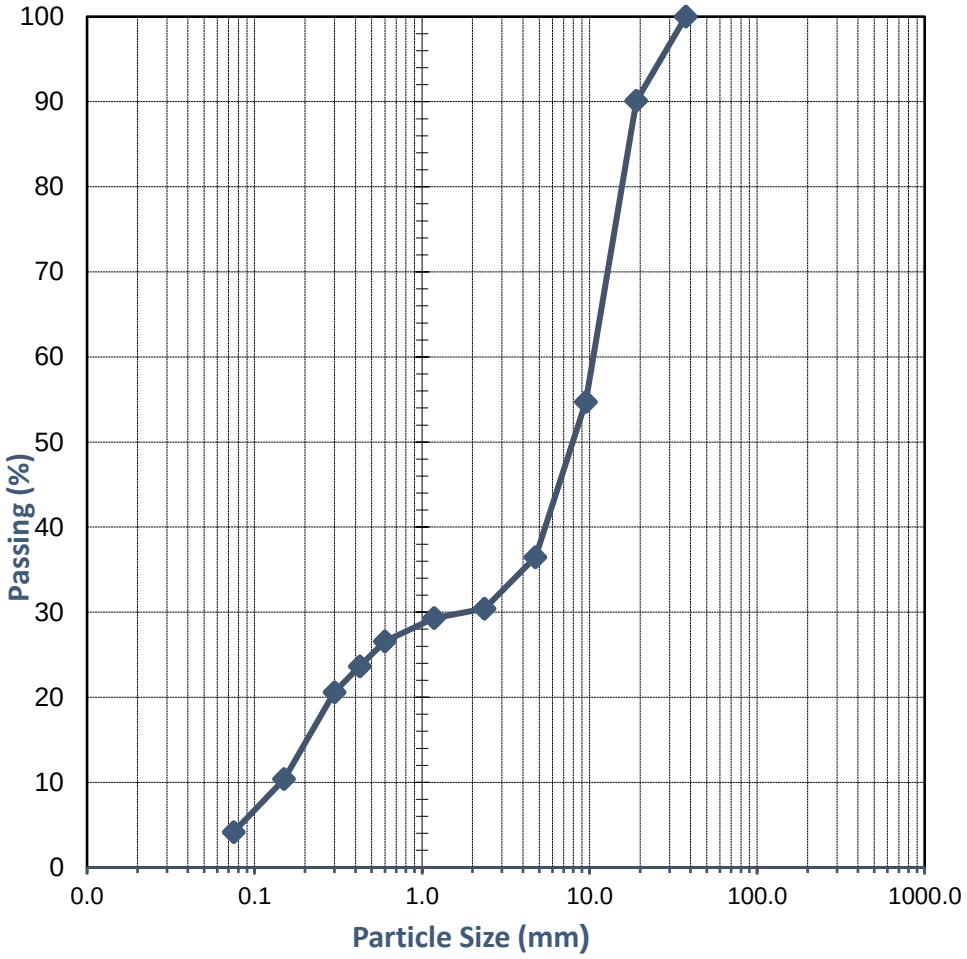
TEST REPORT - AS 1289.3.6.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9803_1_PSD
Project:	Tallangatta	*Sample No.*	WG20/9803
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	Th19 0.3-0.8m	*Date Tested:*	28-29/10/2020

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method: Sampled by Client, Tested as Received

Sieve Size (mm)	Percent Passing Sieve (%)
150.0	
100.0	
75.0	
37.5	100
19.0	90
9.5	55
4.75	36
2.36	30
1.18	29
0.600	27
0.425	24
0.300	21
0.150	10
0.075	4



Comments:

Approved Signatory:

Name: Brooke Elliott

Date: 30-October-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

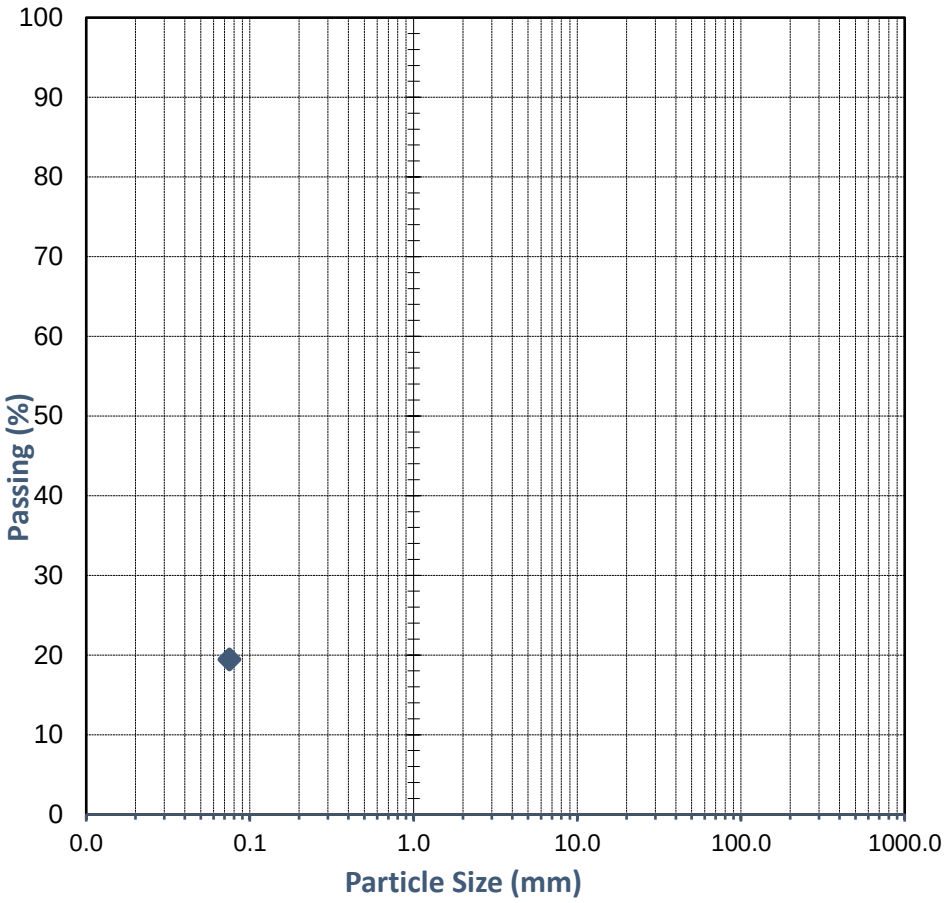
TEST REPORT - AS 1289.3.6.1 (% Fines)

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9804_1_%FINES
Project:	Tallangatta	*Sample No.*	WG20/9804
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH19 1.0-1.5m	*Date Tested:*	28-29/10/2020

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method: Sampled by Client, Tested as Received

Sieve Size (mm)	Percent Passing Sieve (%)
75.0	
37.5	
19.0	
9.5	
4.75	
2.36	
1.18	
0.600	
0.425	
0.300	
0.150	
0.075	19



Comments: Clients request for the % Fines of Material passing 0.075mm only.

Approved Signatory:

Name: Brooke Elliott

Date: 02-November-2020

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.1.1, 3.2.1, 3.3.1 & 3.4.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9804_1_PI
Project:	Tallangatta	*Sample No.*	WG20/9804
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH19 1.0-1.5m	*Date Tested:*	29-10-2020

TEST RESULTS - Consistency Limits (Casagrande)

Sampling Method:	**Sampled by Client, Tested as Received**
History of Sample:	**Oven Dried <50°C**
Method of Preparation:	**Dry Sieved**

AS 1289.3.1.1	**Liquid Limit (%)**	**28**
AS 1289.3.2.1	**Plastic Limit (%)**	**14**
AS 1289.3.3.1	**Plasticity Index (%)**	**14**
AS 1289.3.4.1	**Linear Shrinkage (%)**	**4.0**
AS 1289.3.4.1	**Length of Mould (mm)**	**250**
AS 1289.3.4.1	**Condition of Dry Specimen:**	**-**

Comments:

Approved Signatory:

Name: Brooke Elliott

Date: 02-November-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

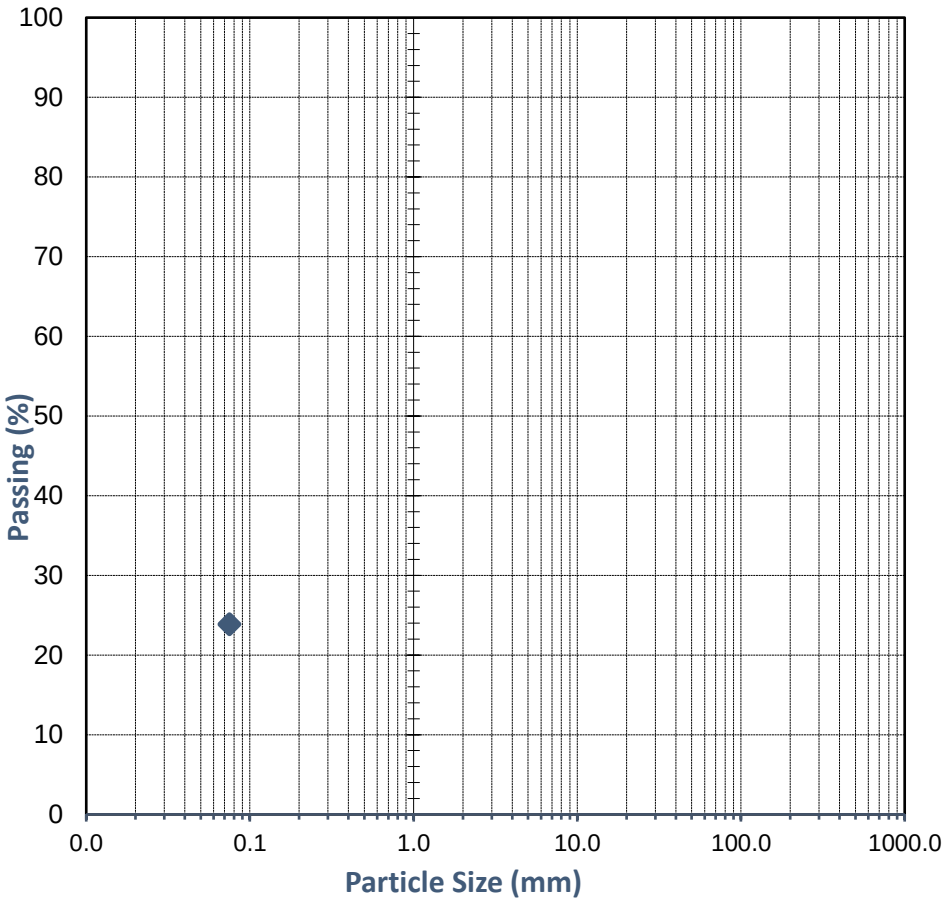
TEST REPORT - AS 1289.3.6.1 (% Fines)

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9805_1_%FINES
Project:	Tallangatta	*Sample No.*	WG20/9805
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH21 1.5-1.9m	*Date Tested:*	28-29/10/2020

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method: Sampled by Client, Tested as Received

Sieve Size (mm)	Percent Passing Sieve (%)
75.0	
37.5	
19.0	
9.5	
4.75	
2.36	
1.18	
0.600	
0.425	
0.300	
0.150	
0.075	24



Comments: Clients request for the % Fines of Material passing 0.075mm only.

Approved Signatory:

Name: Brooke Elliott

Date: 30-October-2020

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.1.1, 3.2.1, 3.3.1 & 3.4.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9805_1_PI
Project:	Tallangatta	*Sample No.*	WG20/9805
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH21 1.5-1.9m	*Date Tested:*	29-10-2020

TEST RESULTS - Consistency Limits (Casagrande)

Sampling Method:	**Sampled by Client, Tested as Received**
History of Sample:	**Oven Dried <50°C**
Method of Preparation:	**Dry Sieved**

AS 1289.3.1.1	**Liquid Limit (%)**	**35**
AS 1289.3.2.1	**Plastic Limit (%)**	**16**
AS 1289.3.3.1	**Plasticity Index (%)**	**19**
AS 1289.3.4.1	**Linear Shrinkage (%)**	**6.0**
AS 1289.3.4.1	**Length of Mould (mm)**	**250**
AS 1289.3.4.1	**Condition of Dry Specimen:**	**Cracked**

Comments:

Approved Signatory:

Name: Brooke Elliott

Date: 02-November-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599

Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

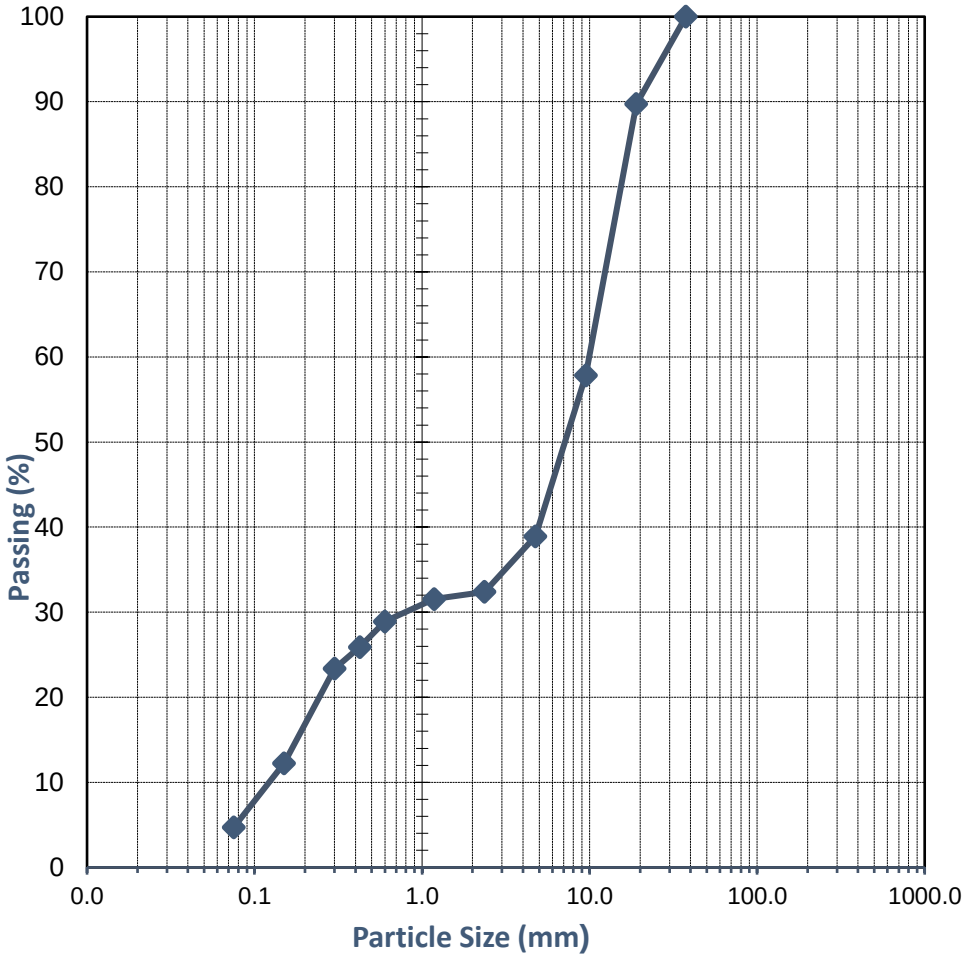
TEST REPORT - AS 1289.1.1*,3.6.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9806_1_PSD
Project:	Tallangatta	*Sample No.*	WG20/9806
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH29 0.1-0.5m	*Date Tested:*	28-10-2020

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method: Sampled by Client, Tested as Received

Sieve Size (mm)	Percent Passing Sieve (%)
150.0	
100.0	
75.0	
37.5	100
19.0	90
9.5	58
4.75	39
2.36	32
1.18	32
0.600	29
0.425	26
0.300	23
0.150	12
0.075	5



*Comments: *AS 1289.1.1- Deviation from standard: Insufficient sample according to test method requirements. NATA accreditation does not cover the performance of this service.*

Approved Signatory:

Name: Brooke Elliott

Date: 30-October-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.1.1, 3.2.1, 3.3.1 & 3.4.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9807_1_PI
Project:	Tallangatta	*Sample No.*	WG20/9807
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH29 0.5-1.1m	*Date Tested:*	29-10-2020

TEST RESULTS - Consistency Limits (Casagrande)

Sampling Method:	**Sampled by Client, Tested as Received**
History of Sample:	**Oven Dried <50°C**
Method of Preparation:	**Dry Sieved**

AS 1289.3.1.1	**Liquid Limit (%)**	**23**
AS 1289.3.2.1	**Plastic Limit (%)**	**17**
AS 1289.3.3.1	**Plasticity Index (%)**	**6**
AS 1289.3.4.1	**Linear Shrinkage (%)**	**2.0**
AS 1289.3.4.1	**Length of Mould (mm)**	**250**
AS 1289.3.4.1	**Condition of Dry Specimen:**	**Cracked**

Comments:

Approved Signatory:

Name: Brooke Elliott

Date: 02-November-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599

Accredited for compliance with ISO/IEC 17025 - Testing

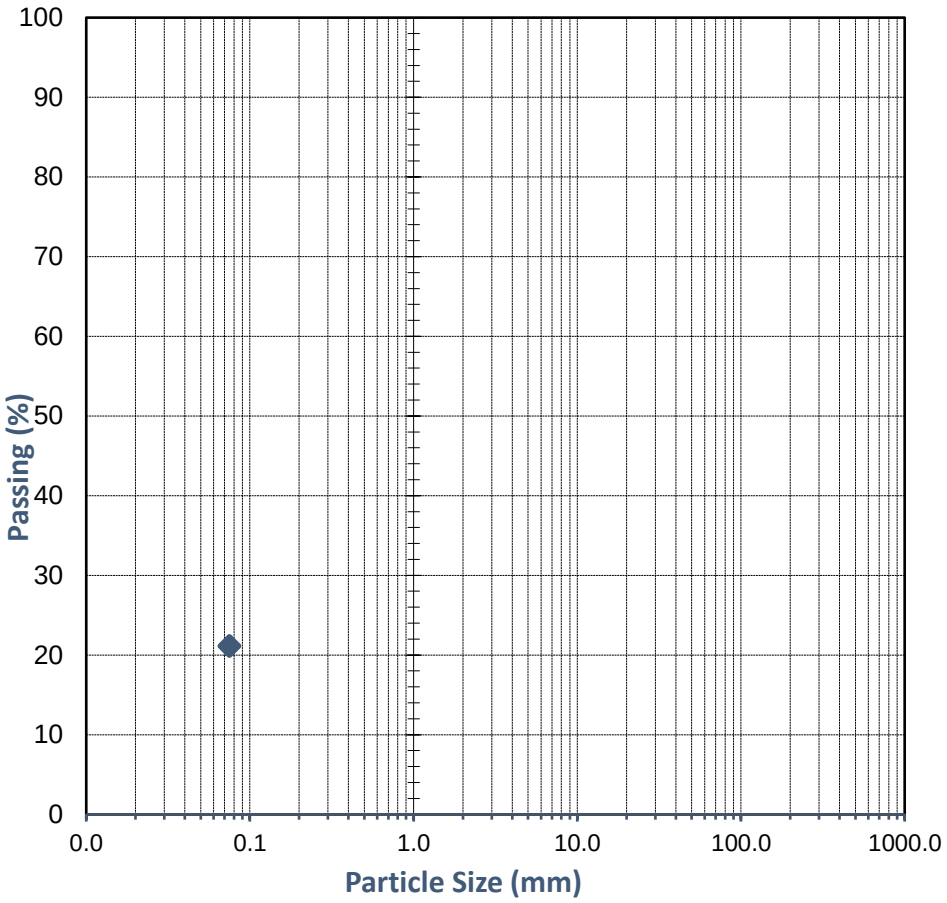
TEST REPORT - AS 1289.3.6.1 (% Fines)

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9808_1_%FINES
Project:	Tallangatta	*Sample No.*	WG20/9808
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH37 1.2-1.6m	*Date Tested:*	28-29/10/2020

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method: Sampled by Client, Tested as Received

Sieve Size (mm)	Percent Passing Sieve (%)
75.0	
37.5	
19.0	
9.5	
4.75	
2.36	
1.18	
0.600	
0.425	
0.300	
0.150	
0.075	21



Comments: Clients request for the % Fines of Material passing 0.075mm only.

Approved Signatory:

Name: Brooke Elliott

Date: 30-October-2020

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing

WESTERN GEOTECHNICAL & Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.1.1, 3.2.1, 3.3.1 & 3.4.1

Client:	Brown Geotechnical	*Ticket No.*	S1928
Client Address:	PO Box 278 Como, WA, 6952	*Report No.*	WG20/9808_1_PI
Project:	Tallangatta	*Sample No.*	WG20/9808
Location:	Muchae	*Date Sampled:*	20-10-2020
Sample Identification:	TH37 1.2-1.6m	*Date Tested:*	29-10-2020

TEST RESULTS - Consistency Limits (Casagrande)

Sampling Method:	**Sampled by Client, Tested as Received**
History of Sample:	**Oven Dried <50°C**
Method of Preparation:	**Dry Sieved**

AS 1289.3.1.1	**Liquid Limit (%)**	**31**
AS 1289.3.2.1	**Plastic Limit (%)**	**14**
AS 1289.3.3.1	**Plasticity Index (%)**	**17**
AS 1289.3.4.1	**Linear Shrinkage (%)**	**6.5**
AS 1289.3.4.1	**Length of Mould (mm)**	**250**
AS 1289.3.4.1	**Condition of Dry Specimen:**	**-**

Comments:

Approved Signatory:

Name: Brooke Elliott

Date: 02-November-2020

NATA WORLD RECOGNISED ACCREDITATION

Accreditation No. 20599
Accredited for compliance with ISO/IEC 17025 - Testing