

21 June 2024

# Shepherdsons Road Rehabilitation

# **Factual Report**

# SHEPHERDSONS ROAD REHABILITATION PROJECT

Hartecs

Job No. NQL2023-0036 | Version 0





#### Rockhampton

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### **Version control**

Document version information	Document version information						
Job number	NQL2023-0036						
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### Review and update history





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# **1.0** INTRODUCTION

#### 1.1 General

CMW Geosciences (CMW) was engaged by Hartecs to carry out a geotechnical investigation of a site for the rehabilitation of the Shepherdsons road in Biloeala.

This report presents the factual findings of our geotechnical investigation based on the encountered ground conditions. The scope of work and associated terms and conditions of our engagement were detailed in our services proposal letter referenced 2128E.Q.1277 Rev0 Proposal\_231027 dated 27 October 2023.

#### **1.2** Proposed Development

The project comprises of rehabilitation of the Shepherdsons Road with an approximate length of four (04) kilometres. Proposed Shepherdsons Road for rehabilitation is highlighted in orange colour in Figure 1.



Figure 1: Site Location Plan

### **1.3** Scope and Objectives

The objective of the geotechnical study along Shepherdsons Road was to gain an appreciation of the geological conditions for the site.



# 2.0 SITE DESCRIPTION

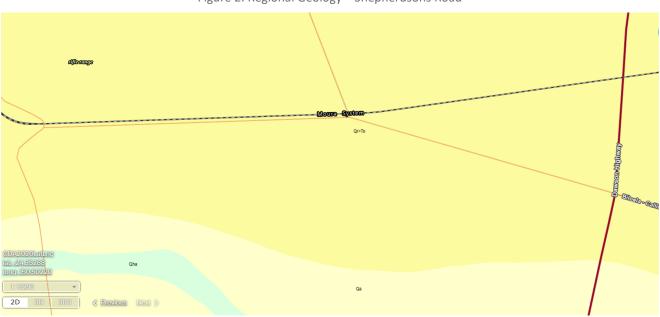
The Shepherdson Road is located in Biloela, off Jambin Dakenbah Road, approximately 6 km north of Biloela town. The existing road has deformations such as rutting, and several pothole patches were observed as well.

The vegetation surrounds along the route was observed at the time of investigations to being moderately sparse. Access to the respective sites was along the Shepherdsons Road.

### 2.1 Surface Conditions and Geology

The overall underlying soil/rock formations across the site comprises of Qr>To Biloela formation. The lithological summary consists of clay, silt, sand, gravel, and soil from colluvial and residual deposits.

Geological map of the proposed area of investigation is shown in the Figure 1 below with detailed descriptions of the units under Table 1.



#### Figure 2: Regional Geology – Shepherdsons Road

Table	1:	Regional	Geology	of Site
-------	----	----------	---------	---------

Rock Unit Key (Surface )	Rock Unit Name	Map Symb ol	Lithological Summary	Dominant Rock	Rock Type	Age	Legend
11420	Qr- QLD>Biloel a Formation	Qr>To	Clay, silt, sand, gravel, and soil: colluvial and residual deposits.	Colluvium	Composite Unit (Dominantly Stratified)	Quaternary	Lorray Qr- QLD Biloela Formation (Qr>To)



### 3.0 FIELD INVESTIGATION

Prior to carrying out the fieldwork, an Occupational Health, Safety and Environmental Management (OHSEM) plan, along with relevant Safe Work Method Statements (SWMS) and Job Hazard Analysis (JHA) documents were prepared to support the safe operation of the field investigation. Following a dial before you dig search, the field investigation was undertaken on 14 May 2024 and 15 May 2024. Field work was carried out under full time observations of a CMW Geotechnical engineer / engineering geologist in general accordance with the AS1726 (2017).

Investigation locations were positioned using a GPS unit to the units' inherent accuracy (typically ± 5m).

#### 3.1 Test Pits

Fieldwork was carried out using 5 Tonne excavator on 14 May 2024 and 15 May 2024. Test pits were excavated by contractor Shaw Bob Cat Hire with a 5-Tonne excavator. Test pits were advanced until the termination criteria were achieved.

Dynamic Cone Penetrometer (DCP) test was carried out from natural subgrade level to 1 m depth or until refusal. Following the investigation, the test pits were reinstated with 2.1 road base material and capped with cold mix. The compaction of the fill material was achieved using Wacker packer and plate compacter. Table 2 summarises the Test Pit ID, depth, and location of the geotechnical investigation conducted.

Engineering logs of the subsurface conditions are presented in Appendix B. The locations of the respective sites referred to above are shown in Appendix A.

Location ID	Drilling Date	Test Pit Depth (m)	Reason for termination	Easting (m)	Northing (m)
TP1	14/05/2024	0.86	Target Depth	246347	7304557
TP2	15/05/2024	1.05	Target Depth	246975	7304583
ТРЗ	15/05/2024	1.05	Target Depth	248139	7304648
TP4	15/05/2024	1.05	Target Depth	248879	7304474
TP5	15/05/2024	1.07	Target Depth	249874	7304206

Table 2: Summary of Test Pit Locations

#### **3.2** Groundwater

No ground water was encountered during the investigation.



### 3.3 Subsurface Conditions

The excavations conducted at site intersected similar soil stratigraphy. The investigation showed that, generally, the road fill material comprises of Gravelly Clayey sand, which is then underlain by alluvial clays.

For details of the strata encountered at each test location, investigation logs for boreholes and test pits are both provided in Appendix B. A summary of the encountered ground conditions is provided in Table 4 below.

Location ID	Road Surface Seal	Fill	Colluvium	Termination Depth	Termination Reason
	SEAL	SAND/GRAVEL	CLAY	(m)	
TP1	0.0-0.01	0.01-0.26 0.26-0.36	0.36-0.86	0.86	Target Depth
TP2	0.0-0.01	0.01-0.3 0.3-0.4	0.4-1.05	1.05	Target Depth
TP3	0.0-0.01	0.01-0.3 0.3-0.4	0.4-1.05	1.05	Target Depth
TP4	0.0-0.01	0.01-0.4	0.4-1.05	1.05	Target Depth
TP5	0.0-0.01	0.01-0.26 0.26-0.4	0.4-1.07	1.07	Target Depth

#### Table 3: Subsurface Conditions



# 4.0 LABORATORY TESTING

### 4.1 Soil Testing

Laboratory testing was carried out in accordance with the requirements of the current edition of AS1289. Where a test was not covered by an Australian Standard, a local or international standard was adopted. Laboratory testing was scheduled by CMW based on the provided brief and carried out by a NATA registered testing authority.

The extent of soil testing carried out to provide the geotechnical parameters required for this study are presented in Table 8.

Table 4: Summary of Soils Laboratory Tests Undertaken

Test	Standard	No. of Tests Scheduled	No. of Tests Received
Atterberg Limits with Linear Shrinkage	AS1289.3.1.1 - 3.4.1	4	4
Particle Size Distribution by Sieve	AS1289.3.6.1	5	5
California Bearing Ratio-single point	AS 1289.6.1.1	5	5

### 4.2 Laboratory Test Results

Table 5 Summary of Particle Size Distribution (Sieve) & Atterberg Limits

Sample	Sample Depth	Sample	Liquid	Linear	Plasticity Index %	% Retained		
Location		Description	Limit %	Shrinkage %		Gravels	Sands	Fines
TP1	0.0-0.3	Clayey sandy GRAVEL	-	-	-	57	31	12
	0.4-0.86	CLAY	63	21.0	35	4	11	85
TP2	0.0-0.3	Clayey sandy GRAVEL	34	3.5	12	57	31	12
TP4	0.0-0.4	Clayey GRAVEL	38	9.0	20	65	15	20
TP5	0.4-1.07	Gravelly CLAY	56	14.0	27	34	16	50



Sample Location	Sample Depth (m)	Maximum Dry Density (t/m³)	Optimum Moisture Content (%)	CBR Value	Swell (%)
TP1	0.4-0.86	1.52	22.0	1.5	0.0
TP2	0.0-0.3	2.02	10.5	13	0.0
TP3	0.4-1.05	1.48	22.0	2.0	6.0
TP4	0.0-0.4	1.84	12.5	35	1.0
TP5	0.4-1.07	1.42	26.5	1.5	3.0

Table 6 Summary of California Bearing Ratio Test Results

### 5.0 SAFETY IN DESIGN

The design landform requires site excavations that may include geotechnical works such as undercuts, temporary excavations, steep fill batters, shear key excavations, deep and shallow subsoil drains. Exposure to these works forms a significant safety risk for contractors and inspectors/ testers.

In conducting our scope of work, we have considered and addressed Safety in Design (SiD) aspects relevant to our understanding of the proposed design and construction work. SiD must consider the construction, operation, maintenance, and ultimate demolition phases of the relevant works.

It is noted that CMW are focussed on design aspects, and whilst we have attempted to be comprehensive in our assessment, it is the Contractors responsibility to cover construction related risks in a more comprehensive manner (being the competent party in that respect). The CMW designs/ specifications for undercuts and drainage elements have been made so that no personnel are ever expected to enter unbattered or unprotected excavations to complete the construction. If at any stage a contractor does not consider that a design for excavations can be safely constructed, then CMW must be contacted immediately to discuss alternative design and/ or methods and avoid risk to personnel.

# 6.0 CLOSURE

This report has been prepared for use by Hartecs in relation to the HTF Pipeline Project in accordance with the scope, proposed uses and limitations described in the report. Should you have further questions relating to the use of your report please do not hesitate to contact us.

Where a party other than Hartecs seeks to rely upon or otherwise use this report, the consent of CMW should be sought prior to any such use. CMW can then advise whether the report and its contents are suitable for the intended use by the other party.



#### USING YOUR CMW GEOTECHNICAL REPORT

Geotechnical reporting relies on interpretation of facts and collected information using experience, professional judgement, and opinion. As such it generally has a level of uncertainty attached to it, which is often far less exact than other engineering design disciplines. The notes below provide general advice on what can be reasonably expected from your report and the inherent limitations of a geotechnical report.

#### Preparation of your report

Your geotechnical report has been written for your use on your project. The contents of your report may not meet the needs of others who may have different objectives or requirements. The report has been prepared using generally accepted Geotechnical Engineering and Engineering Geology practices and procedures. The opinions and conclusions reached in your report are made in accordance with these accepted principles. Specific items of geotechnical or geological importance are highlighted in the report.

In producing your report, we have relied on the information which is referenced or summarised in the report. If further information becomes available or the nature of your project changes, then the findings in this report may no longer be appropriate. In such cases the report must be reviewed, and any necessary changes must be made by us.

#### Your geotechnical report is based on your project's requirements

Your geotechnical report has been developed based on your specific project requirements and only applies to the site in this report. Project requirements could include the type of works being undertaken; project locality, size and configuration; the location of any structures on or around the site; the presence of underground utilities; proposed design methodology; the duration or design life of the works; and construction method and/or sequencing.

The information or advice in your geotechnical report should not be applied to any other project given the intrinsic differences between different projects and site locations. Similarly geotechnical information, data and conclusions from other sites and projects may not be relevant or appropriate for your project.

#### Interpretation of geotechnical data

Site investigations identify subsurface conditions at discrete locations. Additional geotechnical information (e.g. literature and external data source review, laboratory testing etc) are interpreted by Geologists or Engineers to provide an opinion about a site specific ground models, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist due to the variability of geological environments. The actual interface between materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions. Interpretation of factual data can be influenced by design and/or construction methods. Where these methods change review of the interpretation in the report may be required.

#### Subsurface conditions can change

Subsurface conditions are created by natural processes and then can be altered anthropically or over time. For example, groundwater levels can vary with time or activities adjacent to your site, fill may be placed on a site, or the consistency of near surface conditions might be susceptible to seasonal changes. The report is based on conditions which existed at the time of investigation. It is important to confirm whether conditions may have changed, particularly when large periods of time have elapsed since the investigations were performed.

#### Interpretation and use by other design professionals

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical report. To help avoid misinterpretations, it is important to retain the assistance of CMW to work with other project design professionals who are affected by the contents of your report. CMW staff can explain the report implications to design professionals and then review design plans and specifications to see that they have correctly incorporated the findings of this report.

#### Your report's recommendations require confirmation during construction

Your report is based on site conditions as revealed through selective point sampling. Engineering judgement is then applied to assess how indicative of actual conditions throughout an area the point sampling might be. Any assumptions made cannot be substantiated until construction is complete. For this reason, you should retain geotechnical services throughout the construction stage, to identify variances from previous assumption, conduct additional tests if required and recommend solutions to problems encountered on site.

A Geotechnical Engineer, who is fully familiar with the site and the background information, can assess whether the report's recommendations remain valid and whether changes should be considered as the project develops. An unfamiliar party using this report increases the risk that the report will be misinterpreted.

#### Environmental matters are not covered

Unless specifically discussed in your report environmental matters are not covered by a CMW Geotechnical Report. Environmental matters might include the level of contaminants present of the site covered by this report, potential uses or treatment of contaminated materials or the disposal of contaminated materials. These matters can be complex and are often governed by specific legislation.

The personnel, equipment, and techniques used to perform an environmental study can differ significantly from those used in this report. For that reason, our report does not provide environmental recommendations. Unanticipated subsurface environmental problems can have large consequences for your site. If you have not obtained your own environmental information about the project site, ask your CMW contact about how to find environmental risk-management guidance.











# **TEST PIT LOG - TP1**

**Client: Hartecs** 

Project: Shepherdsons Road Rehabilitation Location: Shepherdsons Road-Biloela Project ID: NQL2023-0036 Date: 14/05/2024



1:20

Sheet 1 of 1

#### E.246347m N.7304557m Position: Checked By: PK Elevation Dimensions : m x m Dynamic Cone Penetrometer (Blows/100mm) Consistency/ Relative Density Samples & Insitu Tests Groundwater g Ē Moisture Condition Material Description Soil Type, Plasticity or Particle Characteristics, Colour, Secondary and Minor Components Ē Graphic L Depth Structure & other observations R Depth Type & Results 10 15 Road Surface Seal: GM: Sandy GRAVEL: fine to coarse grained gravel, sub-angular to angular, pale brown, fine to medium grained sand, with low plasticity silt. (Fill) 0.0 - 0.3 1 B 0.0 - 0.3 2 D М 0.3 - 0.4 0.3 - 0.4 0.4 - 0.9 3 B 4 D SP: Clayey Gravelly SAND: fine to coarse grained, pale red mottled orange , fine to medium grained gravel, sub-angular to angular, low plasticity clay, (Fill) CH: CLAY: high plasticity, black, trace sand, fine to medium 14 VD 5 B 0.4 - 0.9 4 6 D grained, trace gravel.(Natural) 4 St to VSt <PL 5 5 5 Test pit terminated at 0.86 m 5 1 6 5 5 2 3 DCP Equipment Ref.: In Situ Vane Equipment Ref.: Pocket Penetrometer Equipment Ref.: Termination Reason: Target Depth Remarks:

This report must be read in conjunction with accompanying notes and abbreviations.



## **TESTPIT PHOTO: TP-01 – TEST PIT PROFILE**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	0.86 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК





# **TESTPIT PHOTO: TP-01 – EXCAVATED MATERIAL**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	0.86 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК
	Naccase and Tep 0-0-26	0.3K	

# **TEST PIT LOG - TP2**

Client: Hartecs

Project: Shepherdsons Road Rehabilitation Location: Shepherdsons Road-Biloela Project ID: NQL2023-0036 Date: 15/05/2024



Sheet 1 of 1

			Pos	ition:	E.24	l6975m N.7304583m												
Checked By: PK Elevation:			ation:									nsions : m x m						
Groundwater	Sample	es & Insitu Tests	RL (m) Depth (m)		(E	(E	(L)	(m)	RL (m)	Graphic Log	Material Description Soil Type, Plasticity or Particle Characteristics. Colour.	Moisture Condition	Consistency/ Relative Density	E   (E	Penetr	ic Con omete 100mn	r	Structure & other observations
Grour	Depth	Type & Results	R	Dept	Grapt	Soil Type, Plasticity or Particle Characteristics, Colour, Secondary and Minor Components	Moi Con	Consi Relative	5	5 1	0 1 	5						
	0.0 - 0.3 0.0 - 0.3	1 B 2 D		-		Road Surface Seal: GC: Clayey sandy GRAVEL: fine to coarse grained, sub-angular to angular, pale brown, fine to coarse grained sand, with low plasticity clay. (Fill) SP: SAND: fine to coarse grained, pale red mottled brown, trace	м											
	0.4 - 1.0	3 B		-		gravel, fine to medium grained, angular (Fill) CH: CLAY: high plasticity, black , (Natural)		VD		13								
	0.4 - 1.0	4 D				CH: CLAY: nign plasticity, black , (Naturai)	<pl< th=""><th>St to VSt</th><th>4</th><th></th><th></th><th></th><th></th></pl<>	St to VSt	4									
				1 -					4				-					
				2		Test pit terminated at 1.05 m												
				-														
				-														
				-														
	Equipment F					In Situ Vane Equipment Ref.: Po	cket P	enetro	omete	r Equ	uipme	ent Re	ef.:					
Term Rema		son: Target Depth																
1 CIII																		

This report must be read in conjunction with accompanying notes and abbreviations.



## **TESTPIT PHOTO: TP-02 – TEST PIT PROFILE**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	1.05 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК
		NQL202 -24.351579	



# **TESTPIT PHOTO: TP-02 – EXCAVATED MATERIAL**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	1.05 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК
	NOL2013-0036 TP	573-0032 C2 b- 1.05 m	
			3-0036 TP-02 + <b>150.506051</b>

15/5/2

# **TEST PIT LOG - TP3**

**Client: Hartecs** 

Project: Shepherdsons Road Rehabilitation Location: Shepherdsons Road-Biloela Project ID: NQL2023-0036 Date: 15/05/2024



1:20

Sheet 1 of 1

#### E.248139m N.7304648m Position: Checked By: PK Elevation Dimensions : m x m Dynamic Cone Penetrometer (Blows/100mm) Consistency/ Relative Density Samples & Insitu Tests Groundwater g Ē Moisture Condition Material Description Soil Type, Plasticity or Particle Characteristics, Colour, Secondary and Minor Components RL (m) Graphic L Depth Structure & other observations Depth Type & Results 10 15 0.0 - 0.3 1 B Road Surface Seal SP: Gravelly Clayey SAND: fine to coarse grained, pale brown , low plasticity clay, with gravel, fine to medium grained, sub-rounded to angular (Fill) 0.0 - 0.3 2 D Μ SP: Gravelly SAND: fine to coarse grained, pale red , fine to D 7 medium grained gravel, sub-angular to angular (Fill) CH: CLAY: high plasticity, black (Natural) 0.4 - 1.0 0.4 - 1.0 3 B 4 D 4 4 4 St to VSt <PL 3 4 5 1 5 Test pit terminated at 1.05 m 5 5 3 3 2 3 DCP Equipment Ref.: In Situ Vane Equipment Ref.: Pocket Penetrometer Equipment Ref.: Termination Reason: Target Depth Remarks:

This report must be read in conjunction with accompanying notes and abbreviations.



## **TESTPIT PHOTO: TP-03 – TEST PIT PROFILE**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	1.05 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК
			B-0036 TP-03 15/5/2024



# **TESTPIT PHOTO: TP-03 – EXCAVATED MATERIAL**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	1.05 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК
	10-0.3m	22023-0036 TPO3 4-1.05 m	3-0036 TP-03 15/5/2024

# **TEST PIT LOG - TP4**

Client: Hartecs

Project: Shepherdsons Road Rehabilitation Location: Shepherdsons Road-Biloela Project ID: NQL2023-0036 Date: 15/05/2024



Sheet 1 of 1

	hecked By:	PK	Positi Eleva		E.24	8879m N.7304474m						Dime	nsions : m x m
					_	m		ity					
Groundwater	Depth	s & Insitu Tests Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description Soil Type, Plasticity or Particle Characteristics, Colour, Secondary and Minor Components	Moisture Condition	Consistency/ Relative Density	(E		100mm		Structure & other observations
	0.0 - 0.4 0.0 - 0.4	1 B 2 D				Road Surface Seal: GC: Clayey GRAVEL: fine to medium grained, sub-angular to angular, pale brown, low plasticity clay, trace sand. (Fill)	м	8					
	0.4 - 1.0 0.4 - 1.0	3 B 4 D				CH: CLAY: high plasticity, black (Natural)	<pl< th=""><th>St</th><th>4 4 4 4 4 5</th><th></th><th></th><th></th><th></th></pl<>	St	4 4 4 4 4 5				
				1		Test pit terminated at 1.05 m			4 5 4 5				
				2									
	Equipment F					In Situ Vane Equipment Ref.:	Pocket F	Penetr	omete	r Equ	uipme	ent Re	əf.:
Term Rem		son: Target Depth											

This report must be read in conjunction with accompanying notes and abbreviations.



## **TESTPIT PHOTO: TP-04 – TEST PIT PROFILE**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	1.05 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК
		NOL202	9-0036 TP-04 15/5/2021



### **TESTPIT PHOTO: TP-04 – EXCAVATED MATERIAL**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	1.05 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК



# **TEST PIT LOG - TP5**

Client: Hartecs

Project: Shepherdsons Road Rehabilitation Location: Shepherdsons Road-Biloela Project ID: NQL2023-0036 Date: 15/05/2024



Sheet 1 of 1

#### E.249874m N.7304206m Position:

Checked By: PK Elevation: Dimensions : m x m	
Samples & Insitu Tests	
Image: second	her observations
0.0 - 0.3   1 B   Road Surface Seal:     0.0 - 0.3   2 D   SP: Gravelly Clayey SAND: fine to coarse grained, pale brown , low plasticity clay, fine to coarse grained gravel, sub-angular to angular (Fill)   M     SP: Gravelly SAND: fine to coarse grained, pale red mottled brown, fine to coarse grained gravel, sub-rounded and sub-   M	
0.4 - 1.1 3 B 0.4 - 1.1 4 D CH: Gravelly CLAY: high plasticity, black, fine to medium grained, angular to sub-angular gravel, with fine to coarse grained sand. (Natural) CH: Gravelly CLAY: high plasticity, black, fine to medium grained sand. (Natural) CH: Gravelly CLAY: high plasticity, black, fine to medium grained sand. (Natural) CH: Gravelly CLAY: high plasticity, black, fine to coarse grained sand. (Natural) CH: Gravelly CLAY: high plasticity, black, fine to medium grained sand. (Natural) CH: Gravelly CLAY: high plasticity, black, fine to medium grained sand. (Natural) CH: Gravelly CLAY: high plasticity, black, fine to medium grained sand. (Natural) CH: Gravelly CLAY: high plasticity, black, fine to medium grained sand. (Natural)	
2   Test pit terminated at 1.07 m   4     4   4   4     4   4	
DCP Equipment Ref.: In Situ Vane Equipment Ref.:	
DCP Equipment Rel.:     In Situ vane Equipment Rel.:     Pocket Penetrometer Equipment Rel.:       Termination Reason: Target Depth     Find Situ vane Equipment Rel.:     Find Situ vane Equipment Rel.:	
Remarks: This report must be read in conjunction with accompanying notes and abbreviations.	



### **TESTPIT PHOTO: TP-05 – TEST PIT PROFILE**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	1.07 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК
			3-0036 TP-05

1012024



# **TESTPIT PHOTO: TP-05 – EXCAVATED MATERIAL**

Client:	Hartecs Group Pty Ltd	Project:	Shepherdsons Road Rehabilitation
Location:	Shepherdsons Road, Queensland 4715	Project No:	NQL2023-0036
Plant:	5-Tonne Excavator	Date:	15/05/2024
Termination Depth:	1.07 m	Contractor:	Shaw Bobcat Hire
Logged by:	АК	Checked by:	РК
	L283-003G TP 05 .2.26M	TT or	22-0036 Pa-0036 Pa-1.07/1 3-0036 TP-05 15/5/2024



# **APPENDIX C** Laboratory Testing Certificates



Address: 7 Lawson Street,

Parkhurst QLD 4702

LaboratoryRockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **QUALITY OF MATERIALS REPORT**

Client:	CMW	GEOSCIENCE	S (EAST COAST	) PTY LTD.			Report N	lumber:	2128/R/86436-1	
Client Address:	Leve	el 3 /1 Breakt	ast Creek Roa	ad, 60 Kingsfo	ord Sr	mith Drive A	Project I	Number:	2128/P/1502	
Project:	NQL	_2023-0036:	Shepherdson	s Road			Lot Num	ber:		
Location:	7 La	awson Street	PARKHURST	QLD 4702			Internal	Test Request:	2128/T/37703	
Component:	Hart	tess Group P	ty Ltd				Client R	eference/s:	NQL2023-0036	
Area Description:	She	pherdsons R	oad				Report [	Date / Page:	17/06/2024	Page 1 of 5
Test Procedures	AS12	289.3.6.1								
Sample Number	2128	8/S/170517				Test Pit N	0:	-	TP1	
Sampling Method	Test	ted As Recei	ved			Depth (m)		(	0-0.3m	
Date Sampled	30/0	30/05/2024								
Sampled By	Clie	nt/Subcontra	ctor Supplied					:	Site 1	
Date Tested	1/06	6/2024				Material S	ource	Insitu		
PSD Preparation	Was	shed				Material T	уре	-		
Atterberg Preparation						Prep Mate	erial > 53.0	mm (%)		
Material Description										
AS Sieve (mm)		Specification Minimum (%)	Percent Passing (%)	Specification Maximum (%)			PARTICL	E SIZE DISTR	RIBUTION GRAPH	1
37.5			100			100				8
26.5			99			1				
19.0			96			80				
13.2			81		()	-				
9.5			73		%) E	60				
6.7			64		Percent Passing (%)	- 00				
4.75			56		t Pa	-				
2.36			43		cen.	40 -				
1.18			32		Pel	1				
0.600			25			20		A A A		
0.425			22			-				
0.300			19			-				
0.150			14				0 0	- 0 0 H	ло4 V	
0.075			12			0.075	0.300 0.150	1.18 0.600 0.425	5.5 6.7 4.75 2.36	37.5 26.5 19.0 13.2
									e Size (mm)	
Test Result		Specification Minimum (%)	Result	Specification Maximum (%)		Test Res	ult	Specification Minimum (%)	Result	Specification Maximum (%)
Liquid Limit (%)					0.07	75/0.425 Fin	es Ratio		0.54	
Plastic Limit (%)					PI x 0.425 Ratio		(%)		-	
Plastic Index (%)					LS x 0.425 Ratio				-	
Linear Shrinkage (%)					Shri	nkage Obse	rvations			

Remarks

Accredited for compliance with ISO/IEC 17025 - Testing



Accreditation Number: Corporate Site Number: 1986 2128 TBa



Address: 7 Lawson Street,

Parkhurst QLD 4702

Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **QUALITY OF MATERIALS REPORT**

Client:   CMM GEOSCIENCES (EAST COAST) PTV LTD.   Report Number:   2128/R/86436-1     Client Address:   Level 3 /1 Breakfast Creak Road, 60 Kingsford Smith Drive A   Project Number:   2128/P/1502     Project   NGL2023-0036: Shepherdsons Rout   Lot Number:   2128/P/1502   Internal Test Request:   2128/P/1503     Component:   Hartes Stroup Pty Ltd   Internal Test Request:   2128/P/1502   Page 2 of     Castion:   Shepherdsons Rout   Test Protective:   Report Date / Page:   NGL2023-0036     Samplen Summer:   128/F/170518   Test Protective:   TP1   Page 2 of     Samplen Summer:   128/F/170518   Test Protective:   Site 2   Test Page:   Site 2     Sampled Sy   Client/Subcontrator: Supplied   Test Pit No:   Test Pit No:   Site 2   Test Pit No:   Test Pit No: <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>														
Project:     NGL2023-0036: Shepherdsons Road     Lot Number:     Internal Test Request:     2128/17/37703       Component:     Hartess Group Pty Ltd     Internal Test Request:     2128/17/37703     Client Reference/s:     NGL2023-0036     Repot Date / Page:     17/06/2024     Page 2 of       Test Procedures     A51289.3.1., A51289.3.1., A51289.3.1., A51289.3.1., A51289.3.1., A51289.3.1., A51289.3.1.     Test Procedures     NGL2023-0036     Repot Date / Page:     17/06/2024     Page 2 of       Sample Number     2128/5/170518     Test Pit No:     TP1     State 2     State 2       Sampled By     Client/Subcontractor Supplied     Depth (m)     0.4-0.86m     State 2       Date Tested     100/6/2024     Material Source     Insitu     Material Source     Insitu       PSD Preparation     Washed     Material Source     Insitu     Material Source     Insitu       19.0     Sandy Clay     Perent     Specification     Perent     Material Source     Insitu       19.0     100     9     100     9     Insitu     Insitu     Insitu     Insitu       19.0     100	Client:	CMV	V GEOSCIENCE	S (EAST COAST	) PTY LTD.				Report N	lumber:	2128/R	/86436-1		
Location:     7 Lawson Street PARKHURST OLD 4702     Internal Test Request:     2128/1737703       Component:     Hartess Group Pty Ltd     Client Reference/s:     NOL2023-0036       Area Description:     Shepherdsons Road     TP1     Page 2 of       Sampling Method     Test Productions     TP1     Description       Sampling Method     Test Pit No:     TP1     Depth (No     Site 2       Sampling Method     Total X-book Record     Site 2     Material Source     Instrume     Site 2       Sampling Method     Total X-book Record     Material Type     -     Prep Material > 53.0mm (%)     Material X-book Record       Step Proparation     Washed     Material Type     -     Prep Material > 53.0mm (%)     Prep Material > 53.0mm (%)       Material Description     Sandy Clay     Prep Material > 53.0mm (%)     Prep Material > 53.0mm (%)     Material X-book Record X	Client Address:	Lev	el 3 /1 Break	fast Creek Ro	ad, 60 Kingsfo	ord S	mith	Drive Al	Project N	Number:	2128/P/	/1502		
Component:   Hartess Group Pty Ltd   Client Reference/s:   NQL2023-0036   Page 2 of     Area Description:   Shepherdsons Road   Report Date / Page:   17/06/2024   Page 2 of     Test Procedures   As1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1.4.S1289.3.1   Test	Project:	NQ	L2023-0036:	Shepherdson	s Road				Lot Num	ber:				
Area Description:     Shepherdsons Road     Report Date / Page:     17/06/2024     Page 2 of       Test Procedures     AS1289.3.6.1.AS1289.3.2.1.AS1289.3.2.1.AS1289.3.2.1.AS1289.3.1.1.AS1289.3.1.1.     Test Pit No:     TP1     Depth (m)     0.4-0.86m       Samplel Number     2128/S/170518     Test Pit No:     TP1     Depth (m)     0.4-0.86m       Date Sampled     30/05/2024     Site 2     Material Source     Insitu     Material Source     Insitu       PSD Preparation     Dry Sieved / Oven Dried     Percent     Specification     Material Type     -     Prep Material > 53.0mm (%)     PARTICLE SIZE DISTRIBUTION GRAPH       19.0     0.6.7     98     Specification     Material Page     -	Location:	7 La	awson Street	PARKHURST	QLD 4702				Internal	Test Request:	2128/T/	37703		
Test Procedures     AS1289.3.6.1, AS1289.3.2.1, AS1289.3.2.1, AS1289.3.2.1, AS1289.3.2.1       Sample Number     2128/S/170518       Sample Number     2128/S/170518       Sample By     Client/Subcontractor Supplied       Date Tested     1006/2024       PSD Preparation     Washed       Atterial Source     Institu       Material Description     Sandy Clay       As Sieve (mm)     Specification funimum (%)       9.5     100       6.7     98       2.36     96       1.18     94       0.600     99       4.75     98       0.300     91       0.425     92       0.300     91       0.150     88       0.075     88       85     96       91.0     91       0.150     85       92     92       0.300     91       0.150     85       92     92       0.300     91       0.425     57.5 12	Component:	Har	tess Group P	ty Ltd					Client Re	eference/s:	NQL202	23-0036		
Sample Number     2128/S/170518     Test Pit No:     TP1       Sampling Method     Tested As Received     Dept Material Source     Insitu       Sampled By     Client/Subcontractor Supplied     Dept Material Source     Insitu       Data Tested     10/06/2024     Material Source     Insitu       PSD Preparation     Washed     Prep Material > 53.0mm (%)     Material Type       Atterberg Preparation     Specification     Maximum (%)     Prep Material > 53.0mm (%)     Material Source       19.0     Specification     Maximum (%)     Prep Material > 53.0mm (%)     Material Source     Insitu       19.0     100     9.5     9.6     9.6     9.9     9.6       4.75     9.8     96     9.2     9.2     0.300     9.3     9.2       0.425     9.2     9.3     9.2     9.2     0.300     Specification     Specification       0.425     9.2     9.3     9.2     9.6     9.6     9.6     9.6     9.6     9.6     9.6     9.6     9.6     9.6     9.6     9.6 <td< td=""><td>Area Description:</td><td>She</td><td>epherdsons R</td><td>oad</td><td></td><td></td><td></td><td></td><td>Report D</td><td>Date / Page:</td><td>17/06/2</td><td>024</td><td>Р</td><td>age 2 of 5</td></td<>	Area Description:	She	epherdsons R	oad					Report D	Date / Page:	17/06/2	024	Р	age 2 of 5
Sampling Method     Tested As Received     Depth (m)     0.4-0.86m       Date Sampled     30/05/2024     Site 2       Sampled By     Client/Subcontactor Supplied     Material Source     Insitu       PSD Preparation     Washed     Material Type     -       Atterberg Preparation     Dyselved / Oven Dried     Prep Material > 53.0mm (%)     Part Tick Size DISTRIBUTION GRAPH       19.0     Specification     Maximum (%)     Part Tick Size DISTRIBUTION GRAPH     -       19.0     100     95     96     96     -     -       19.0     100     95     96     96     -     -     -       19.0     100     95     96     96     -     -     -     -     -       19.0     100     93     96     92     96     92     - <td>Test Procedures</td> <td>AS1</td> <td>289.3.6.1, AS12</td> <td>89.3.1.2, AS128</td> <td>9.3.2.1, AS1289.3</td> <td>3.4.1,</td> <td>AS12</td> <td>289.2.1.1, <i>F</i></td> <td>AS 1289.3.3</td> <td>.1</td> <td></td> <td></td> <td></td> <td></td>	Test Procedures	AS1	289.3.6.1, AS12	89.3.1.2, AS128	9.3.2.1, AS1289.3	3.4.1,	AS12	289.2.1.1, <i>F</i>	AS 1289.3.3	.1				
Date Sampled Sampled By     Oliver/Subcontractor Supplied 10/6/2024     Site 2       Date Tested     10/6/2024     Material Source     Insitu       PSD Preparation     V=verted / Over Dried     Material Type     -       Atterberg Preparation     Systed / Over Dried     Prep Material > 3.0     Material Type     -       Atterberg Preparation     Systed / Over Dried     Prep Material > 3.0     Material Type     -       Ats Sieve (mm)     Specification Minimum (%)     Percent Passing (%)     Specification Maximum (%)     Passing (%)     Material Source     Insitu     -     -       19.0     Specification Minimum (%)     Passing (%)     Specification Maximum (%)     Part ICLE SIZE DISTRIBUTION GRAPH       19.0     99     99     -	Sample Number	212	8/S/170518				Τe	est Pit No	):		TP1			
Sampled By Date Tested     Client/Subcontractor Supplied     Site 2       Material Source     Insitu       PSD Preparation     Vashed     Material Source     Insitu       Atterborg Preparation     Dry Sieved / Over Dried     Prep Material > 50 mm (%)     Prep Material > 50 mm (%)       Material Description     Specification Minimum (%)     Percent Passing (%)     Specification Maximum (%)     Particle SIZE DISTRIBUTION GRAPH       19.0     100     Specification Maximum (%)     Specification Passing (%)     Specification Maximum (%)     Particle SIZE DISTRIBUTION GRAPH       19.0     100     Specification Maximum (%)     Specification Passing (%)     Specification Maximum (%)     Passing (%)     Specification Maximum (%)       19.0     100     100     Specification Passing (%)     Specification Passing (%)     Specification Maximum (%)       19.0     100     100     100     Specification Maximum (%)     Specification Maximum (%)     Specification Maximum (%)       10.050     98     94     94     100     100     100     100     100     100     100     100     100     100     100     100 </td <td>Sampling Method</td> <td>Tes</td> <td>ted As Recei</td> <td>ved</td> <td></td> <td></td> <td>De</td> <td>epth (m)</td> <td></td> <td></td> <td>0.4-0.86</td> <td>m</td> <td></td> <td></td>	Sampling Method	Tes	ted As Recei	ved			De	epth (m)			0.4-0.86	m		
Date Tested     1/06/2024     Material Source     Insitu       PSD Preparation     Washed     Material Source     Insitu       Atterberg Preparation     Dry Sieved / Oven Dried     Prep Material > 53.0mm (%)     Prep Material > 53.0mm (%)       Material Description     Sandy Class     Prep Material > 53.0mm (%)     Prep Material > 53.0mm (%)       Material Description     Specification Minimum (%)     Percent Pressing (%)     Specification Minimum (%)     Prep Material > 53.0mm (%)       19.0     Specification Minimum (%)     Percent Pressing (%)     Specification Minimum (%)     Maximum (%)       19.0     100     (%)     100     (%)     Particle SIZE DISTRIBUTION GRAPH       19.0     100     (%)     99     (%)     0     (%)     0       11.18     94     (%)     92     (%)     0     (%)     0     (%)     (%)       0.075     88     92     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)     (%)	Date Sampled	30/0												
PSD Preparation Atterberg Preparation     Wasked Dry Sieved / Oven Dried     Material Type Prep Material > 53.0mm (%)     Material > 53.0mm (%)       Material Description     Specification Minimum (%)     Precent Passing (%)     Specification Maximum (%)     PARTICLE SIZE DISTRIBUTION GRAPH       19.0     100 <t< td=""><td>Sampled By</td><td>Clie</td><td>ent/Subcontra</td><td>ctor Supplied</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Site 2</td><td></td><td></td><td></td></t<>	Sampled By	Clie	ent/Subcontra	ctor Supplied							Site 2			
Atterberg Preparation     Dry Sieved / Oven Dried     Prep Material > 53.0mm (%)       Material Description     Sandy Clay       As Sieve (mm)     Specification Minimum (%)     Percent Passing (%)     Specification Maximum (%)     PARTICLE SIZE DISTRIBUTION GRAPH       19.0     0.5     100     0	Date Tested	1/06	6/2024				M	aterial So	ource	Insitu				
Material Description   Sandy Clay     AS Sieve (mm)   Specification Minimum (%)   Percent Passing (%)   Specification Maximum (%)   PARTICLE SIZE DISTRIBUTION GRAPH     19.0   100   100   99   100   100     9.5   100   99   96   96   96     1.18   94   94   92   91   40     0.600   93   92   91   40   40   40     0.150   88   85   92   0.300   91   20   40 <td>PSD Preparation</td> <td>Wa</td> <td>shed</td> <td></td> <td colspan="5"></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>	PSD Preparation	Wa	shed							-				
AS Sieve (mm)     Specification Minimum (%)     Percent Passing (%)     Specification Maximum (%)     PARTICLE SIZE DISTRIBUTION GRAPH       19.0     9.5     100     100     99     99     99       4.75     98     96     94     96     91     0       2.36     94     92     93     92     92     92     93     92     93     92     92     93     92     94     94     95     98     95     92     92     94     95     95	Atterberg Preparation	Dry	Sieved / Ove	en Dried						mm (%)				
As Selve ((iiiii))     Minimum (%)     Passing (%)     Maximum (%)     Maximum (%)     Passing (%) <td>Material Description</td> <td>San</td> <td colspan="11"></td>	Material Description	San												
19.0     100 <td>AS Sieve (mm)</td> <td></td> <td></td> <td colspan="6"></td> <td>E SIZE DIST</td> <td>RIBUTI</td> <td>on grapi</td> <td>4</td> <td></td>	AS Sieve (mm)									E SIZE DIST	RIBUTI	on grapi	4	
6.7   99   99   98   96   98   96   94   94   94   94   93   94   93   92   92   91   40 <t< td=""><td>19.0</td><td></td><td></td><td>100</td><td></td><td></td><td>100</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td></t<>	19.0			100			100							-
4.75   98   98   96   96   96   96   94   93   93   93   93   94   93   94   93   94   93   94   93   94   93   92   94   94   94   94   94   94   94   94   93   94   <	9.5			100										
2.36   1.18   96   94   94   94   94   93   92   91   92   91	6.7			99			80	-						
0.150   0.075   88   85   85   20   1   <	4.75			98		(		-						
0.150   0.075   88   85   85   20   1   <	2.36			96		%) (	<u> </u>	-						
0.150   0.075   88   85   85   20   1   <	1.18			94		ssing	60	_						
0.150   0.075   88   85   85   20   1   <	0.600			93		t Pas		-						
0.150   0.075   88   85   85   20   1   <	0.425			92		cent	40	-						
0.075858599 <td></td> <td></td> <td></td> <td>91</td> <td></td> <td>Per</td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>				91		Per		1						
0.075   0.075   85   Image: second se							20	1						
Test ResultSpecification Minimum (%)ResultSpecification Maximum (%)Test ResultSpecification Minimum (%)ResultSpecification Maximum (%)Liquid Limit (%) Plastic Limit (%) Plastic Index (%)630.075/0.425 Fines Ratio Pl × 0.425 Ratio (%) Lis × 0.425 Ratio (%)0.075/0.425 Fines Ratio Pl × 0.425 Ratio (%)0.933220.0Use of the second secon	0.075			85										
Test ResultSpecification Minimum (%)ResultSpecification Maximum (%)Test ResultSpecification Minimum (%)ResultSpecification Maximum (%)Liquid Limit (%) Plastic Limit (%) Plastic Index (%)630.075/0.425 Fines Ratio Pl × 0.425 Ratio (%) Lis × 0.425 Ratio (%)0.075/0.425 Fines Ratio Pl × 0.425 Ratio (%)0.933220.0Use of the second secon							_	-						
Image: constraint of the section of							0		0		 	4 S		н. н. Н. н.
Image: constraint of the section of								.075	.150	1.600 1.425	.18	.36	ب ب	9.0 3.2
Ninimum (%)     Kesuit     Maximum (%)     Nesuit     Minimum (%)     Nesuit     Maximum (%)       Liquid Limit (%)     63     0.075/0.425 Fines Ratio     0.093     0.93       Plastic Limit (%)     28     Pl x 0.425 Ratio (%)     3220.0     3220.0       Plastic Index (%)     35     LS x 0.425 Ratio (%)     1932.0     1932.0								0,	0		e Size (m	ım)		
Liquid Limit (%)     63     0.075/0.425 Fines Ratio     0.93       Plastic Limit (%)     28     Pl x 0.425 Ratio (%)     3220.0       Plastic Index (%)     35     LS x 0.425 Ratio (%)     1932.0	Test Result		Specification Minimum (%)	Result	Specification Maximum (%)			ılt			Result			
Plastic Limit (%)     28     Pl x 0.425 Ratio (%)     3220.0       Plastic Index (%)     35     LS x 0.425 Ratio (%)     1932.0	Liquid Limit (%)	$\neg \uparrow$		63		( )			s Ratio			0.93		
Plastic Index (%)     35     LS x 0.425 Ratio (%)     1932.0	,			28				(%)						
Linear Shrinkage (%) 210 Shrinkage Observations				35							1932.0			
	Linear Shrinkage (%)			21.0					vations	-			-	

Remarks

Accredited for compliance with ISO/IEC 17025 - Testing



Accreditation Number: Corporate Site Number: 1986 2128

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1	Kor	
	Cert	



Address: 7 Lawson Street,

Parkhurst QLD 4702

Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **QUALITY OF MATERIALS REPORT**

			QUAL									
Client:	СМ	W GEOSCIENCE	ES (EAST COAST	) PTY LTD.				Report N	lumber:	2128/R/86	6436-1	
Client Address:	Lev	vel 3 /1 Break	fast Creek Ro	ad, 60 Kingsfo	ord Si	mith Dr	rive Al	Project N	Number:	2128/P/15	502	
Project:	NC	L2023-0036:	Shepherdson	s Road				Lot Num	ber:			
Location:	7 L	awson Street.	PARKHURST	QLD 4702				Internal	Test Request:	2128/T/37	703	
Component:	На	rtess Group P	Pty Ltd					Client Re	eference/s:	NQL2023	-0036	
Area Description:	Sh	epherdsons R	load					Report D	Date / Page:	17/06/202	24	Page 3 of 5
Test Procedures	AS	1289.3.6.1. AS12	289.3.1.2, AS128	9.3.2.1. AS1289.	3.4.1.	AS1289	.2.1.1. AS	S 1289.3.3.	.1			
Sample Number		28/S/170519	,	,	- ,	1	Pit No:			TP2		
Sampling Method		sted As Recei	ved				th (m)			0-0.3m		
Date Sampled	30/	/05/2024										
Sampled By	Clie	ent/Subcontra	ctor Supplied							Site 3		
Date Tested	1/0	6/2024	Material So					urce	Insitu			
PSD Preparation	Wa	ashed		Material Ty				ре	-			
Atterberg Preparation	Dry	/ Sieved / Ove	· · · · · · · · · · · · · · · · · · ·					al > 53.0	mm (%)			
Material Description	Sa	indy Clay										
AS Sieve (mm)		Specification Minimum (%)	Percent     Specification     P       Passing (%)     Maximum (%)     P				P	ARTICL	E SIZE DIST	RIBUTIO	N GRAPH	ł
37.5			100			100						
26.5			98			1						
19.0			94			80 -						1
13.2			84		(0	-					/	
9.5			73		Percent Passing (%)	60 -					/	
6.7			65		ssing	00					× 1	
4.75			57		t Pa	-						
2.36			43		rcen	40 -						
1.18			32		Pe	1						
0.600			25			20 -						
0.425			22				•					
0.300 0.150			19			0						
0.150			15 12				0	0 0		2	ب م 4 	
0.075			12			ç	0.075	0.300	1.18 0.600 0.425	2.36	9.3 6.7 4.75	37.5 26.5 19.0 13.2
										ve Size (mm	)	
Test Result		Specification Minimum (%)	Result	Specification Maximum (%)			est Result	t	Specification Minimum (%		esult	Specification Maximum (%)
Liquid Limit (%)			34	0.075/0.425 Fine			s Ratio		(	).55		
Plastic Limit (%)			22	PI x 0.425 Ratio (		%)		2	58.0			
Plastic Index (%)			12		LS x 0.425 Ratio		5 Ratio	(%)		7	75.3	
Linear Shrinkage (%)			3.5		Shrinkage Obse			/ations	-			

Remarks

Accredited for compliance with ISO/IEC 17025 - Testing



Accreditation Number: Corporate Site Number: 1986 2128 TBa



Address: 7 Lawson Street,

Parkhurst QLD 4702

Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **QUALITY OF MATERIALS REPORT**

Client:	СМ	W GEOSCIENCE	ES (EAST COAST	) PTY LTD.				Report N	lumber:	2128/R/86436-	1
Client Address:	Le	vel 3 /1 Break	fast Creek Ro	ad, 60 Kingsfo	ord S	mith	Drive Al	Project I	Number:	2128/P/1502	
Project:	NG	L2023-0036:	Shepherdson	s Road				Lot Num	ber:		
Location:	7 L	awson Street.	PARKHURST	QLD 4702				Internal	Test Request:	2128/T/37703	
Component:	На	rtess Group P	Pty Ltd					Client R	eference/s:	NQL2023-0036	
Area Description:	Sh	epherdsons R	load					Report [	Date / Page:	17/06/2024	Page 4 of 5
Test Procedures	AS	1289.3.6.1, AS12	289.3.1.2, AS128	9.3.2.1, AS1289.	3.4.1,	AS12	289.2.1.1, A	S 1289.3.3	.1		
Sample Number	21	28/S/170521				Т	est Pit No	:		TP4	
Sampling Method	Te	sted As Recei	ved			D	epth (m)			0-0.4m	
Date Sampled	30/	0/05/2024									
Sampled By	Cli	ent/Subcontra	ctor Supplied							Site 5	
Date Tested	1/0	6/2024				м	laterial Sc	ource	Insitu		
PSD Preparation	Wa	ashed		Material Ty				pe	-		
Atterberg Preparation	Dry	/ Sieved / Air	Dried	-				ial > 53.0	mm (%)		
Material Description	Sa	andy Clay									
AS Sieve (mm)		Specification Minimum (%)	ication Percent Specification P					ARTICL	E SIZE DIST	RIBUTION GR	АРН
37.5			100			100	1				
26.5			99				1				
19.0			96			80	, <u> </u>				
13.2			76				-				
9.5			64		%) (	60	-				
6.7			51		ssing	60					
4.75			43		: Pas		-			/	¢
2.36			35		Percent Passing (%)	40	-				
1.18			29		Per		-				
0.600			26			20					
0.425			24				-				
0.300			23				-				
0.150			21			0		·····		·····	
0.075			20				0.075	0.300	1.18 0.600 0.425	4.75 2.36	37.5 26.5 19.0 13.2 9.5 6.7
		AS Sieve Size (mm)									
Test Result		Specification Minimum (%)	Result	Specification Maximum (%)			lt	Specification Minimum (%)		Specification Maximum (%)	
Liquid Limit (%)			38	0.075/0.425 Fine			s Ratio		0.84		
Plastic Limit (%)			18	PI x 0.425 Ratio (		(%)		484.1			
Plastic Index (%)			20		LS x 0.425 Ratio		(%)		217.8		
Linear Shrinkage (%)			9.0	Shrinkage Obse			vations	-			

Remarks

Accredited for compliance with ISO/IEC 17025 - Testing



Accreditation Number: Corporate Site Number: 1986 2128

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Address: 7 Lawson Street,

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Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **QUALITY OF MATERIALS REPORT**

Test Procedures     As1289.3.6.1, As1289.3.1.2, As1289.3.2.1, As1289.3.4.1, As1289.3.1.1       Sample Number     2128/S170522       Sampling Method     Test As Received       Date Sampled     30/05/2024       Samplende By     Client/Subcontractor Supplied       Date Tested     1/06/2024       PSD Preparation     Washed       Atterberg Preparation     Dry Sieved / Oven Dried       Material Description     Silty Clay       As Sieve (mm)     Specification       Material Description     Silty Clay       As Sieve (mm)     Specification       Material Description     Silty Clay       As Sieve (mm)     Specification       Maximum (%)     Result       30.00     55       0.600     53       0.425     56       0.300     55       0.075     50       1     Specification       Maximum (%)     Test Result       Specification     Maximum (%)       0     55       0     50       0     50       0 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>													
Project:     NOL2023-0036: Shepherdsons Road     Lot Number:       Location:     7 Lawson Street PARKHURST QLD 4702     Internal Test Request:     2128/T/37703       Component:     Hartess Group Ply Ltd     Report Date / Page:     17/06/2024     Page 5       Test Procedures     AS1289.3.8.1, AS1289.3.21, AS1289.3.21, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.1     Test Procedures     AS1289.3.12, AS1289.3.21, AS1289.3.4.1, AS1289.2.1.1, AS 1289.3.1       Sampling Method     Test As Received     Date Sampling Method     Test Pix No:     TP5       Date Sampling Method     Test Pix No:     TP5     Depth (m)     0.4-1.07m       Date Sampled By     Client/Subcontractor Supplied     Site 6     Material Source     Instru       PSD Preparation     Sity Clay     Percent     Specification     Material Source     Instru       Material Description     Sity Clay     Specification     Percent     Specification     Pasing (%)     Mainmum (%)     Pasing (%)     Mainmum (%)       9.0     66     56     56     56     56     56     56     56     56     56     56     56     56     56     <	Client:	СМ	W GEOSCIENCE	ES (EAST COAST	) PTY LTD.				Report N	Number:	2128/R/864	36-1	
Location:     7 Lawson Street PARKHURST OLD 4702     Internal Test Request:     2128/17/37703       Component:     Hartess Group Pty Ltd     Client Reference/s:     NQL2023-0036       Area Description:     Shepherdsons Road     Report Date / Page:     17/06/2024     Page 5       Sampled Number     2128/5/170522     Test Procedures     AS1289.3.1.4, AS1289.3.2.1, AS1289.3.2.1, AS1289.3.3.1     Stepart Date / Page:     17/06/2024     Page 5       Sampled By     Client/Subcontractor Supplied     Date Sampled     300/52/24     Step 6     Material Type -       PSD Preparation     Vy Sieved / Oven Dried     Perep Material > 53.0mm (%)     Material Source     Instribution (%)       Material Description     Sity Clay     Specification Maximum (%)     Perep Material > 53.0mm (%)     Part TICLE SIZE DISTRIBUTION GRAPH       100     9.5     87     74     66     100     90	Client Address:	Le	vel 3 /1 Break	fast Creek Ro	ad, 60 Kingsfo	ord S	mith [	Drive Al	Project N	Number:	2128/P/150	2	
Component:     Hartess Group Pty Ltd     Client Reference/s:     NOL2023-0036       Area Description:     Shepherdsons Road     Report Date / Page:     17/06/2024     Page 5       Test Procedures     Ast289.3.6.1, Ast289.3.1.2, Ast289.3.2.1, Ast289.3.2.1, Ast289.3.2.1     Ast289.3.3.1     Stample 17/06/2024     Page 5       Sampled Number     2128/S/170522     Test Pit No:     TP5     Depth (m)     0.4-11.07m       Sameled By     Client/Subcontractor Supplied     Site 6     Material Source     Insitu     Material Source     Insitu       PSD Preparation     Dry Sieved / Oven Dried     Prep Material > 53.0mm (%)     Material Source     Insitu     Material Source     Insitu       Material Description     Sity Clay     Specification     Maximum (%)     PARTICLE SIZE DISTRIBUTION GRAPH       100     100     100     Insitu     Material Preparation     Site 6       0.600     55     50     Sol     Sol     Sol     Sol       0.55     50     50     Sol     Sol     Sol     Sol     Sol       0.675     50     56     56	Project:	NG	L2023-0036:	Shepherdson	s Road				Lot Num	ıber:			
Area Description:     Shepherdsons Road     Report Date / Page:     17/06/2024     Page 5       Test Procedures     AS1289.3.6.1, AS1289.3.2.1, AS1289.3.2.1, AS1289.3.2.1, AS1289.3.3.1     Test Pit No:     TP5       Samplel Number     2128/S/170522     Test Pit No:     TP5       Samplel 30/05/2024     Samplel By     Client/Subcontractor Supplied     Depth (m)     0.4-1.07m       Sampled By     Client/Subcontractor Supplied     Site 6     Material Source     Insitu       PSD Preparation     Vashed     Material Source     Insitu     Material Source     Insitu       As Sieve (mm)     Specification Minimum (%)     Percent Solution Minimum (%)     Specification Minimum (%)     Percent Solution Minimum (%)     Passing (%)     PARTICLE SIZE DISTRIBUTION GRAPH       100     9.5     56     55     56     0.3000     55     56     0.300     55     50     0.075/0.425 Fines Ratio     As Sieve Size (mm)     Specification Minimum (%)     Specification Minimum (%)     Specification Minimum (%)     Test Result     Specification Minimum (%)	Location:	7 L	awson Street	PARKHURST	QLD 4702				Internal	Test Request:	2128/T/377	03	
Test Procedures     AS1289.3.6.1, AS1289.3.1.2, AS1289.3.2.1, AS1289.3.4.1, AS1289.3.1.1       Sample Number     2128/S/170522       Sampling Method     Test As Received       Date Sampled     30/05/2024       Sampled By     Client/Subcontractor Supplied       Date Tested     1/06/2024       PSD Preparation     Washed       Atterberg Preparation     Dry Sieved / Oven Dried       Material Description     Silty Clay       As Sieve (mm)     Specification       9.5     74       4.75     74       66     55       0.425     56       0.300     55       0.425     56       0.300     55       0.150     53       0.075     50       Test Result     Specification       Maximum (%)     Test Result     Specification       Maximum (%)     Test Result     Specification       0     56     56       0.300     55     50       0     56     57       0     58     50	Component:	На	rtess Group P	Pty Ltd					Client Re	eference/s:	NQL2023-0	036	
Sample Number 2128/S/170522   Sampling Method Tested As Received   Date Sampled 30/05/2024   Sampled By Client/Subcontractor Supplied   Date Tested A 1/06/2024   PSD Preparation Washed   Atterberg Preparation Dry Sleved / Oven Dried   Material Description Specification   Material Description Specification   9.5 36   0.425 56   0.3000 55   0.425 56   0.3000 55   0.150 53   0.755 53   50 55   50 50   Test Result Specification Minimum (%)   Result Specification Minimum (%)   Test Result Specification Minimum (%)   Pastic Limit (%) 56   29 0.075/0.425 Fines Ratio   Plastic Limit (%) 154	Area Description:	Sh	epherdsons R	load					Report D	Date / Page:	17/06/2024		Page 5 of 5
Sampling Method Tested As Received Depth (m) 0.4-1.07m   Date Sampled By Client/Subcontractor Supplied Site 6   Date Tested 1/06/2024 Site 6   Material Description Washed PrepMaterial > 53.0mm (%)   Material Description Stycelfication Percent   As Sieve (mm) Specification Percent   As Sieve (mm) Specification Percent   19.0 9.5 87   4.75 74 93   0.600 58 66   0.150 55 66   0.300 55 66   0.150 53 50   0.150 53 50   Test Result Specification   Maximum (%) Result Specification   Maximum (%) 29 Pix 0.425 Fines Ratio   Plastic Limit (%) 1514.7	Test Procedures	AS	1289.3.6.1, AS12	289.3.1.2, AS128	9.3.2.1, AS1289.	3.4.1,	AS128	9.2.1.1, /	AS 1289.3.3	.1			
Date Sampled 30/05/2024   Sampled By Client/Subcontractor Supplied   Date Tested 1/06/2024   PSD Preparation Washed   Atterberg Preparation Dry Sieved / Oven Dried   Material Description Sitty Clay   AS Sieve (mm) Specification Minimum (%) Percent Passing (%) Specification Maximum (%)   19.0 100   9.5 87   4.75 74   2.36 66   1.18 59   0.600 55   0.300 55   0.150 55   0.300 55   0.150 50   0.75 50   Test Result Specification Minimum (%)   Result Specification Minimum (%)   Test Result Specification Minimum (%)   Plastic Limit (%) 29   Plastic Limit (%) 29	Sample Number	21	28/S/170522				Tes	st Pit No	D:		TP5		
Sampled By Client/Subcontractor Supplied Site 6   Date Tested 1/06/2024 Material Source Insitu   PSD Preparation Washed Material Source Insitu   Atterberg Preparation Dy Sieved / Oven Dried Prep Material > 53.0mm (%) Material Source   As Sieve (mm) Specification Percent Specification   19.0 100 9.5 87   4.75 74 66   0.300 55 66   0.300 55 56   0.300 55 56   0.300 55 50   0.075 50 50   Test Result Specification Minimum (%) Result Specification Maximum (%)   Test Result Specification Minimum (%) 56 0.075/0.425 Fines Ratio   Plastic Limit (%) 29 Pl x 0.425 Ratio (%) 1514.7	Sampling Method	Te	sted As Recei	ved			De	pth (m)			0.4-1.07m		
Date Tested 1/06/2024   PSD Preparation Washed   Atterberg Preparation Dry Sieved / Oven Dried   Material Description Silty Clay   As Sieve (mm) Specification Minimum (%) Percent Passing (%) Specification Maximum (%)   9.5 100   4.75 74   2.36 66   1.18 59   0.600 58   0.4225 56   0.300 55   0.150 53   0.150 53   0.075 50   Test Result Specification Minimum (%)   Result Specification Minimum (%)   Test Result Specification Minimum (%)   Pastic Limit (%) 29   Plastic Limit (%) 29	Date Sampled	30/	/05/2024										
PSD Preparation Atterberg Preparation Washed Dry Sieved / Oven Dried Material Type Prep Material > 53.0mm (%)   Material Description Silty Clay   As Sieve (mm) Specification Minimum (%) Percent Passing (%) Specification Maximum (%) PARTICLE SIZE DISTRIBUTION GRAPH   19.0 19.0 100 87 100   9.5 4.75 74 66   1.18 59 66   0.425 56 55   0.300 55 53   0.150 53 50   0.075 50 55   0.075 Specification Minimum (%) Result   Test Result Specification Minimum (%) Result Specification Maximum (%)   Liquid Limit (%) 29 0.075/0.425 Fines Ratio 0.89   Plastic Limit (%) 29 Pl x 0.425 Ratio (%) 1514.7	Sampled By	Cli	ent/Subcontra	ctor Supplied							Site 6		
Atterberg Preparation Dry Sieved / Oven Dried Prep Material > 53.0mm (%)   Material Description Silty Clay   As Sieve (mm) Specification Minimum (%) Percent Passing (%) Specification Maximum (%)   19.0 100   9.5 87   4.75 74   2.36 66   1.18 59   0.600 58   0.425 56   0.300 55   0.150 53   0.075 50   V Specification Minimum (%)   Test Result Specification Minimum (%)   Test Result Specification Minimum (%)   129 Pix 0.425 Fines Ratio   0.075/0.425 Fines Ratio 0.89   Plastic Limit (%) 29	Date Tested	1/0	6/2024				Ма	terial S	ource	Insitu			
Material Description Silty Clay   As Sieve (mm) Specification Minimum (%) Percent Passing (%) Specification Maximum (%)   19.0 100   9.5 87   4.75 74   2.36 66   0.600 58   0.425 56   0.300 55   0.150 53   0.075 50   Specification Minimum (%) Specification Maximum (%)   Test Result Specification Minimum (%) Specification Maximum (%) Specification Maximum (%)   Test Result Specification Minimum (%) Specification Maximum (%) Test Result Specification Minimum (%)   Liquid Limit (%) 29 0.075/0.425 Fines Ratio 0.89   Plastic Limit (%) 29 0.075/0.425 Ratio (%) 1514.7	PSD Preparation	Wa	ashed		Material Ty				ype	-			
AS Sieve (mm)   Specification Minimum (%)   Percent Passing (%)   Specification Maximum (%)   PARTICLE SIZE DISTRIBUTION GRAPH     19.0   100   87   100   87     4.75   74   66   80     2.36   66   59     0.600   58   56     0.425   56   53     0.300   55   50     0.150   53   50     0.075   50   50     Test Result   Specification Minimum (%)   Specification Maximum (%)   Test Result   Specification Minimum (%)     Liquid Limit (%)   56   0.075/0.425 Fines Ratio Plastic Limit (%)   0.839   1514.7	Atterberg Preparation	Dry	y Sieved / Ove	en Dried						mm (%)			
AS stelle (IIIII)     Minimum (%)     Passing (%)     Maximum (%)     Passing (%)     Maximum (%)       19.0     100     87     100     <	Material Description	Silt	Ity Clay										
19.0     100       9.5     87       4.75     74       2.36     66       1.18     59       0.600     58       0.425     56       0.300     55       0.150     53       0.075     50       1     Specification Minimum (%)       Result     Specification Minimum (%)       Test Result     Specification Minimum (%)       Plastic Limit (%)     29       Plastic Limit (%)     29	AS Sieve (mm)								PARTICLE SIZE DISTRIBUTION GRAPH				
4.75     74       2.36     1.18       0.600     58       0.425     56       0.300     55       0.150     53       0.075     50       Test Result     Specification Minimum (%)       Result     Specification Maximum (%)       Liquid Limit (%)     29       Plastic Limit (%)     29	19.0			100		1	100						
2.36     66       1.18     59       0.600     58       0.425     56       0.300     55       0.150     53       0.075     50       50     50 <t< td=""><td>9.5</td><td></td><td></td><td>87</td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td></t<>	9.5			87				1					
1.18     59     58       0.600     56       0.300     55       0.150     53       0.075     50       50     50       0     1.18       0     0	4.75			74			80	_					
0.075     50     20 <th2< td=""><td>2.36</td><td></td><td></td><td>66</td><td></td><td>()</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></th2<>	2.36			66		()		-					
0.075     50     20 <th2< td=""><td>1.18</td><td></td><td></td><td>59</td><td></td><td>%) E</td><td>60</td><td>1</td><td></td><td></td><td></td><td></td><td></td></th2<>	1.18			59		%) E	60	1					
0.075     50     20 <th2< td=""><td>0.600</td><td></td><td></td><td>58</td><td></td><td>ssing</td><td>00</td><td>-</td><td>_</td><td></td><td></td><td></td><td></td></th2<>	0.600			58		ssing	00	-	_				
0.075     50     20 <th2< td=""><td></td><td></td><td></td><td></td><td></td><td>t Pa</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th2<>						t Pa							
0.075     50     20 <th2< td=""><td></td><td></td><td></td><td></td><td></td><td>rcen</td><td>40</td><td>-</td><td></td><td></td><td></td><td></td><td></td></th2<>						rcen	40	-					
Test Result     Specification Minimum (%)     Result     Specification Maximum (%)     Test Result     Specification Maximum (%)     Result     Specification Maximum (%)     Test Result     Specification Maximum (%)     Result     Specificati						Pe		1					
Test Result     Specification Minimum (%)     Result     Specification Maximum (%)       Liquid Limit (%) Plastic Limit (%)     1     56     0.075/0.425 Fines Ratio Pl x 0.425 Ratio (%)     0.89     1514.7	0.075			50			20	-					
Test Result     Specification Minimum (%)     Result     Specification Maximum (%)       Liquid Limit (%) Plastic Limit (%)     1     56     0.075/0.425 Fines Ratio Pl x 0.425 Ratio (%)     0.89     1514.7								-					
Test Result     Specification Minimum (%)     Result     Specification Maximum (%)       Liquid Limit (%) Plastic Limit (%)     1     56     0.075/0.425 Fines Ratio Pl x 0.425 Ratio (%)     0.89     1514.7							0	-					
Image: Constraint of the second sec							0	0.			1. 2.		9.
Image: Constraint of the second sec								075	150	600 425 300	36 18	75	19.0 13.2 9.5 6.7
Minimum (%)     Kesuit     Maximum (%)     Hest Result     Minimum (%)     Mesuit     Maximum (%)       Liquid Limit (%)     56     0.075/0.425 Fines Ratio     0.89     0.89     0.1514.7     0.1514.7											e Size (mm)		
Plastic Limit (%)     29     Pl x 0.425 Ratio (%)     1514.7	Test Result		Specification Minimum (%)	Result	Specification Maximum (%)			ult			sult	Specification Maximum (%)	
Plastic Limit (%)     29     Pl x 0.425 Ratio (%)     1514.7	Liquid Limit (%)			56		0.075/0.425 Fine			es Ratio		0.8	89	
Plastic Index (%) 27 I S x 0 425 Ratio (%) 785 4				29		PI x 0.425 Ratio		(%)		151	4.7		
	Plastic Index (%)			27				o (%)		78	5.4		
Linear Shrinkage (%) 14.0 Shrinkage Observations	Linear Shrinkage (%)			14.0					rvations	-			

Remarks

Accredited for compliance with ISO/IEC 17025 - Testing



Accreditation Number: Corporate Site Number: 1986 2128 TBa



Address: 7 Lawson Street,

Parkhurst QLD 4702

Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **CALIFORNIA BEARING RATIO REPORT**

Client:	CMW GEOSCIEN	CES (EAST COAST) PT	Y LTD.		Report Nur	nber:	2128/R/86553-1	
Client Address:	Level 3 /1 Brea	akfast Creek Road, 6	60 Kingsford Sr	nith Drive Al	Project Nur	nber:	2128/P/1502	
Project:	NQL2023-0030	6: Shepherdsons Ro	bad		Lot Numbe	r:		
Location:	7 Lawson Stre	et PARKHURST QL	.D 4702		Internal Tes	st Reques	t: 2128/T/37703	
Component:	Hartess Group	Pty Ltd			Client Refe	rence/s:	NQL2023-0036	
Area Description:	Shepherdsons	Road			Report Date	e / Page:	20/06/2024	Page 1 of 5
Test Procedures	AS1289.6.1.1, AS	1289.5.1.1, AS1289.2.1	.1					
Sample Number	2128/S/170518	3		Test Pit No	):		TP1	
Sampling Method	Tested As Rec	eived		Depth (m)			0.4-0.86m	
Date Sampled	30/05/2024							
Sampled By	Client/Subcont	ractor Supplied					Site 2	
Date Tested	14/06/2024			Prep Mater	rial > 53mm	(%)	-	
Material Source	Insitu			Material Limit Start			-	
Material Type	-			Material Lir	mit End	-		
Client Reference	-			Compactiv	e Effort		Standard	
Material Description	Sandy Clay							
Maximum Dry Density	(t/m³):	1.52			CBR PEN	IFTRATI	ON PLOT	
Optimum Moisture Cor	ntent (%):	22.0			CDICTER			
Field Moisture Content	t (%):	19.1						
Sample Percent Overs	size (%)	0.0	350					
Oversize Included / Ex	cluded	Excluded						
Target Density Ratio (9	%):	95	300					
Target Moisture Ratio	(%):	100						
Placement Dry Density	/ (t/m³):	1.44	250					
Placement Dry Density	/ Ratio (%):	95.0						
Placement Moisture Co	ontent (%):	22.0	(N) 200					
Placement Moisture Ra	atio (%):	99.5	Loa					
Test Condition / Soaking	ng Period:	Soaked / 4 Days	150					
CBR Surcharge (kg)		4.5						
Dry Density After Soak	ry Density After Soak (t/m³): 1.44							
Total Curing Time (hrs								
Liquid Limit Method								
Moisture (top 30mm) A	(top 30mm) After Soak (%) 40.1							
Moisture (remainder) A	isture (remainder) After Soak (%) 33.2							
CBR Swell (%): 0.0			0 - <del> </del>		 	.5 .5	7.5	- 12.5
Minimum CBR Specification (%): -			5					ы
CBR Value @ 5.0mm	BR Value @ 5.0mm (%): 1.5					Penetrati	on (mm)	

Remarks

Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: Corporate Site Number: 1986 2128

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Address: 7 Lawson Street,

Parkhurst QLD 4702

Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **CALIFORNIA BEARING RATIO REPORT**

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Client:	CMW GEOSCIEN	CES (EAST COAST) PT	Y LTD.		Repor	t Number:		2128/R/86553-1	
Client Address:	Level 3 /1 Brea	akfast Creek Road, 6	60 Kingsford Sm	hith Drive Al	Projec	t Number:	:	2128/P/1502	
Project:	NQL2023-003	6: Shepherdsons Ro	ad		Lot Nu	mber:			
Location:	7 Lawson Stre	et PARKHURST QL	D 4702		Interna	al Test Re	quest:	2128/T/37703	
Component:	Hartess Group	Pty Ltd			Client Reference/s:			NQL2023-0036	
Area Description:	Shepherdsons	Road			Repor	t Date / Pa	age:	20/06/2024	Page 2 of 5
Test Procedures	AS1289.6.1.1, AS	1289.5.1.1, AS1289.2.1	.1						
Sample Number	2128/S/170519	9		Test Pit No	):			TP2	
Sampling Method	Tested As Rec	eived		Depth (m)				0-0.3m	
Date Sampled	30/05/2024								
Sampled By	Client/Subcont	ractor Supplied						Site 3	
Date Tested	14/06/2024			Prep Mate	rial > 53	mm (%)		-	
Material Source	Insitu			Material Li	mit Star	t		-	
Material Type	-		Material Li	-					
Client Reference	-		Compactive Effort Standard						
Material Description	Sandy Clay								
Maximum Dry Density	(t/m³):	2.02			CBR	PENETR	ΩΤΤΟ	N PLOT	
Optimum Moisture Cor	ntent (%):	10.5			CDIX		0.110		
Field Moisture Content	: (%):	5.2	5000						
Sample Percent Overs	ize (%)	8.0	5000						
Oversize Included / Ex	cluded	Excluded	4500						
Target Density Ratio (%	%):	95	4000						
Target Moisture Ratio	(%):	100	4000						
Placement Dry Density	/ (t/m³):	1.92	3500						
Placement Dry Density	/ Ratio (%):	95.0	∋ 3000						
Placement Moisture Co	ontent (%):	10.5	$\Box$						
Placement Moisture Ra	atio (%):	100.0	peo 2500 -						
Test Condition / Soakir	ng Period:	Soaked / 4 Days	2000 -						
CBR Surcharge (kg)		4.5	1						
Dry Density After Soak	: (t/m³):	1.92	1500						
Total Curing Time (hrs)	otal Curing Time (hrs) 2								
iquid Limit Method Estimation			1000						
Moisture (top 30mm) After Soak (%) 12.1			500						
Moisture (remainder) After Soak (%) 11.8			0 4				+		
CBR Swell (%): 0.0		0.5	····2.5		4 5 5 5	· · · ·	- 7.5	- 12.5	
Minimum CBR Specification (%):     -							С		
CBR Value @ 5.0mm	(%):	13	Penetration (mm)						

Remarks

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Accreditation Number: Corporate Site Number: 1986 2128

-	-	-	-	-



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Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **CALIFORNIA BEARING RATIO REPORT**

Client:	CMW GEOSCIEN	CES (EAST COAST) PT	Y LTD.		Report Number	r:	2128/R/86553-1	
Client Address:	Level 3 /1 Brea	akfast Creek Road, 6	60 Kingsford Sn	hith Drive Al	Project Numbe	r:	2128/P/1502	
Project:	NQL2023-003	6: Shepherdsons Ro	bad		Lot Number:			
Location:	7 Lawson Stre	et PARKHURST QL	D 4702		Internal Test Re	equest:	2128/T/37703	
Component:	Hartess Group	Pty Ltd			Client Reference	ce/s:	NQL2023-0036	
Area Description:	Shepherdsons	Road			Report Date / F	Page:	20/06/2024	Page 3 of 5
Test Procedures	AS1289.6.1.1, AS	1289.5.1.1, AS1289.2.1	.1					
Sample Number	2128/S/170520	)		Test Pit No	):		TP3	
Sampling Method	Tested As Rec	eived		Depth (m)			0.4-1.05m	
Date Sampled	30/05/2024							
Sampled By	Client/Subcont	ractor Supplied					Site 4	
Date Tested	18/06/2024			Prep Mater	rial > 53mm (%)		-	
Material Source	Insitu			Material Li	mit Start		-	
Material Type	-			Material Li			-	
Client Reference	-			Compactiv	e Effort		Standard	
Material Description	Silty Clay							
Maximum Dry Density	(t/m³):	1.48			CBR PENET	<b>R</b> ΔTIO		
Optimum Moisture Cor		22.0						
Field Moisture Content		16.7	-					
Sample Percent Overs	ize (%)	0.0	600					
Oversize Included / Ex	cluded	Excluded						
Target Density Ratio (9	%):	95	500					
Target Moisture Ratio	(%):	100						
Placement Dry Density	/ (t/m³):	1.41						
Placement Dry Density	/ Ratio (%):	95.0	<u>400</u>					
Placement Moisture Co	ontent (%):	22.0	(N)					
Placement Moisture Ra	atio (%):	99.5	ق 300					
Test Condition / Soakir	ng Period:	Soaked / 4 Days						
CBR Surcharge (kg)		-	200					
Dry Density After Soak	k (t/m³):	1.33	200					
Total Curing Time (hrs	)	4						
Liquid Limit Method		Estimation	100					
Moisture (top 30mm) A	After Soak (%)	38.3	1/					
Moisture (remainder) A	After Soak (%)	33.8	0					
CBR Swell (%):		6.0	0.5	1.5			N.5	12.5
Minimum CBR Specific	cation (%):	-	б	<u></u> м м				 б
CBR Value @ 2.5mm	(%):	2.0			Per	netration	n (mm)	

Remarks

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Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **CALIFORNIA BEARING RATIO REPORT**

Client:	CMW GEOSCIEN	CES (EAST COAST) PT	Y LTD.		Report	Number	:	2128/R/86553-1	l
Client Address:	Level 3 /1 Brea	akfast Creek Road, 6	60 Kingsford Sn	hith Drive Al	Project	Number	:	2128/P/1502	
Project:	NQL2023-003	6: Shepherdsons Ro	bad		Lot Nu	mber:			
Location:	7 Lawson Stre	et PARKHURST QL	D 4702		Interna	l Test Re	equest:	2128/T/37703	
Component:	Hartess Group	Pty Ltd			Client I	Referenc	e/s:	NQL2023-0036	
Area Description:	Shepherdsons	Road			Report	Date / P	age:	20/06/2024	Page 4 of 5
Test Procedures	AS1289.6.1.1, AS	1289.5.1.1, AS1289.2.1	.1						
Sample Number	2128/S/17052	1		Test Pit No	:			TP4	
Sampling Method	Tested As Rec	eived		Depth (m)				0-0.4m	
Date Sampled	30/05/2024								
Sampled By	Client/Subcont	ractor Supplied						Site 5	
Date Tested	18/06/2024			Prep Mater	ial > 53ı	mm (%)		-	
Material Source	Insitu			Material Lin	nit Start			-	
Material Type	-			Material Lin	mit End			-	
Client Reference	-			Compactiv	e Effort			Standard	
Material Description	Sandy Clay								
Maximum Dry Density	(t/m³):	1.84			CBR	PENET	ράτιο	N PLOT	
Optimum Moisture Cor	ntent (%):	12.5	12000		CDIX		0.110		
Field Moisture Content	t (%):	6.3	12000						
Sample Percent Overs	size (%)	3.0							
Oversize Included / Ex	cluded	Excluded	10000 -						
Target Density Ratio (	%):	95	-						
Target Moisture Ratio	(%):	100	-						
Placement Dry Density	y (t/m³):	1.75	8000 -						
Placement Dry Density	y Ratio (%):	95.0							
Placement Moisture C	ontent (%):	12.3	(N) peol						
Placement Moisture R	atio (%):	100.0	- Loa						
Test Condition / Soaki	ng Period:	Soaked / 4 Days	-						
CBR Surcharge (kg)		4.5	4000 —						
Dry Density After Soak	κ (t/m³):	1.74	-						
Total Curing Time (hrs	5)	4	2000						
Liquid Limit Method		Estimation	2000						
Moisture (top 30mm) A		13.3							
Moisture (remainder) A	After Soak (%)	15.5	0 4			ոսիուդուր			
CBR Swell (%):		1.0		0.5	ι ω ι υ	4 0 5 0	6.5	7.5	12.5
Minimum CBR Specific		-							Л
CBR Value @ 2.5mm	(%):	35				PE	metratio	on (mm)	

Remarks

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Laboratory:Rockhampton LaboratoryPhone:07 4886 2100Fax:07 4926 1286Email:Rockhampton@constructionsciences.net

# **CALIFORNIA BEARING RATIO REPORT**

Client:	CMW GEOSCIEN	CES (EAST COAST) PT	Y LTD.		Report N	lumber		2128/R/86553-1	
Client Address:	Level 3 /1 Brea	akfast Creek Road, 6	60 Kingsford Sr	nith Drive Al	Project N	lumber	:	2128/P/1502	
Project:	NQL2023-003	6: Shepherdsons Ro	bad		Lot Num	ber:			
Location:	7 Lawson Stre	et PARKHURST QL	D 4702		Internal	Test Re	equest	: 2128/T/37703	
Component:	Hartess Group	Pty Ltd			Client Re	eferenc	e/s:	NQL2023-0036	
Area Description:	Shepherdsons	Road			Report D	ate / P	age:	20/06/2024	Page 5 of 5
Test Procedures	AS1289.6.1.1, AS	1289.5.1.1, AS1289.2.1	.1						
Sample Number	2128/S/170522	2		Test Pit No	):			TP5	
Sampling Method	Tested As Rec	eived		Depth (m)				0.4-1.07m	
Date Sampled	30/05/2024								
Sampled By	Client/Subcont	ractor Supplied						Site 6	
Date Tested	18/06/2024			Prep Mate	rial > 53m	m (%)		-	
Material Source	Insitu			Material Li	mit Start			-	
Material Type	-			Material Li	mit End			-	
Client Reference	-			Compactiv	e Effort			Standard	
Material Description	Silty Clay								
Maximum Dry Density	(t/m³):	1.42			CBR P	FNFTF	λΤΤΑ	ON PLOT	
Optimum Moisture Cor	ntent (%):	26.5			CDICI		0.110		
Field Moisture Content	t (%):	21.9	270						
Sample Percent Overs	size (%)	0.0	270						
Oversize Included / Ex	cluded	Excluded	240						
Target Density Ratio (	%):	95	-						
Target Moisture Ratio	(%):	100	210						
Placement Dry Density	y (t/m³):	1.35	180						
Placement Dry Density	y Ratio (%):	95.0							
Placement Moisture C	ontent (%):	26.7	≥ 150 <del> </del>						
Placement Moisture Ra	atio (%):	100.0	(N) 150						
Test Condition / Soaki	ng Period:	Soaked / 4 Days	120	/					
CBR Surcharge (kg)		4.5	90	/					
Dry Density After Soak	κ (t/m³):	1.31							
Total Curing Time (hrs	5)	3	60						
Liquid Limit Method		Estimation	1						
Moisture (top 30mm) A	After Soak (%)	41.4	30						
Moisture (remainder) A	After Soak (%)	35.5	0 4						
CBR Swell (%):		3.0	0.5		4 ω ν ν		6.5	7.5	12.5
Minimum CBR Specific	cation (%):	-	б						 
CBR Value @ 2.5mm	(%):	1.5				Pen	etratio	on (mm)	

Remarks

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