

LEVEL ONE COMPLIANCE REPORT





E: admin@protestengineering.com

PTP/ 10578 PTP/ – 0001 – Rev0

Project Number:

Letter Number:

Project Name:

P: 1300 023 181

A: 8/36 Blanck Street, Ormeau, QLD, 4208

protestengineering.com

The Pocket Stage 4

Shadforth Civil 99 Sandalwood Lane, Forest Glen QLD 4556

Attention: Josh Cumming

Email: josh.cumming@shadcivil.com.au

Report on Level 1 Earthworks
Proposed Residential Development
1 Goss Drive, Collingwood Park

1. Introduction

This report summarises the results of inspection and testing provided by Protest Engineering (Protest) for the bulk earthworks as part of the The Pocket Stage 4 project undertaken between 11th October 2022 to 20th December 2022. The works were undertaken at the request of Shadforth Civil.



Figure 1: Arial Image of Site (Nearmap – 11/02/2023)

The scope of inspection and testing undertaken was in general accordance with AS3798-2007 *Guidelines on Earthworks for Commercial and Residential Developments*. As part of the inspection and testing undertaken, Protest provided Level 1 supervision in accordance with Section 8.2 of AS3798-2007.

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Drawing No. 4002 Rev1 – *Bulk Earthworks Layout Plan* attached is the bulk earthworks layout plan. The frequency of field density testing adopted for this project was based on AS3798-2007, Table 8.1 with a minimum of one test per 500 m^3 placed for a *Type 1 – Large Scale Operation*.

Based on the information provided within the general notes (Drawing No. 214043-C100 – General Notes), the minimum relative compaction requirements were not specified, and therefore the criteria in AS3798, Table 5.1 was adopted. A summary of the criteria is summarised in Table 1.

Table 1: Test Request Compaction and Moisture Content Specification

Fill Types	Minimum Dry Density Ratio (%)
Residential	>95%

2. Geology



Figure 2: Based on the information provided by QGD (qgd.org.au)

3. Earthworks Activities

Foundation preparation observed by Protest comprised the removal of topsoil and unsuitable materials across the cut to fill area exposing the underlying natural materials. A test roll was performed on the natural soils using a pad foot roller and no noticeable movement was observed on the final pass.

Filling operations comprised the placement and compaction of material obtained from Onsite source which were typically (SC) Sandy Clay - Pale Brown. Materials were placed onsite in uniform layers not exceeding 300 mm.

The material used as fill was moisture conditioned at the fill source and during placement and blended to achieve suitable moisture content for compaction. The following heavy plant were used throughout the bulk earthworks component:

- Water truck
- 12t Padfoot roller
- 25t Excavator
- D6 Dozer



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A total of Fifteen (15) field density ratio tests were undertaken at select locations during the filling operations. Field density testing was carried out using a nuclear gauge and in accordance with the test method outlined in AS1289.5.8.1. The relative compaction was then determined by comparing the recorded field density with the laboratory maximum dry density (standard compaction) outlined in test method AS1289.5.7.1.

A summary of the test results is presented in Table 2 with the individual reports attached and the approximate test locations are shown in the Attachments.

Table 2. Summary of Density Testing

Item	Compaction			
No. of tests	15			
Mean	101%			

4. Compliance

As far as it has been able to determine, it is our opinion that the bulk earthworks placed and compacted at 1 Goss Drive, Collingwood Park by Shadforth Civil between 11th October 2022 to 20th December 2022 comply with the above-mentioned specifications and can be considered as Level 1 'controlled' or structural fill.

5. Comments

Based on the results of the inspections and field density testing whilst Protest were on-site, it is considered that the bulk earthworks at 1 Goss Drive, Collingwood Park between 11th October 2022 to 20th December 2022 have been undertaken in general accordance with AS3798-2007 *Guidelines on Earthworks for Commercial and Residential Developments*. Protest believes consideration should be given to the following:

- This report only certifies the bulk earthworks activities supervised by Protest between 11th October 2022
 to 20th December 2022. Protest does not take responsibility for any other bulk earthworks activities that
 have occurred before or after these dates;
- II. The installation of services or any activities that may cause disruption of the compacted filling;
- III. The suitability of the filled land to support the proposed structures; and
- IV. Any variation in filling depth of extent of areas that is not noted within this report or on the individual test report sheets.

6. Constraints

Protest has prepared this report for the bulk earthworks at The Pocket Stage 4. This report was produced
for the sole use of Shadforth Civil. It should not be used by or depended upon for other projects or purposes
on the same or other site or by a third party. In the preparation of this report Protest has relied upon
information provided by the client and/or their agents.



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- Assessments of material quality such as soaked CBR and site classifications are excluded from this commission.
- This report is not to be relied upon for settlement analysis and soft soils engineering advice. This is beyond the scope of this report and outside our engagement.
- Our on-site attendance specifically excludes assessments of fill material quality and engineering properties
 that are outside the requirements of AS3798 2007, including soil or fill reactivity and soaked CBR
 values. We note that the fill materials used may result in unfavourable site classifications and low subgrade
 design strengths.
- The results provided in this report are indicative of the subsurface conditions on the site only at the specific
 sampling or testing locations, and then only to the depths investigated along with the time the work was
 carried out. It is known that subsurface conditions can suddenly change due to irregular geological processes
 and as a result of human influences. Such changes may occur after Protest field testing has been completed.
- Certain ground conditions and the materials behaviour observed or contained at the test locations may alter
 from those which may be encountered elsewhere on the site. Should variations in subsurface conditions be
 encountered, then additional advice should be sought from Protest and, if required, amendments made.
- Protest cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion given in this report.
- Footings and ground slabs for any structures constructed over natural soils or controlled fill should be
 designed to accommodate the characteristic ground surface movements and settlement potential.
 Assessments of these design parameters are beyond the scope of this Report.

The Following should also be considered:

- 1. This report is not a SITE CLASS REPORT as per AS2870-2011 and not a Geotechnical Site Investigation report as per AS1726-2017.
- 2. The shrink/swell movements which can occur in the residual silty clays due to weather related natural moisture changes by the reduction in surface evaporation subsequent to covering the site with buildings and pavements. As outlined in AS2870-2011 ("Residential Slabs and Footings Constructions").
- 3. It should be noted that there is a possibility that compaction levels may have increased during placement of subsequent layers especially when there have been fully laden earthmoving equipment frequently travel across the fill areas exerting high traffic loads.
- 4. All compacted filling is subject to decompaction phenomenon.



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We trust that the above information is suitable for your present requirements. Should you have any queries, please do not hesitate to contact the undersigned.

Regards,

Written By:

Tom Hoskins

Technician

p | 0406 680 490

e | tom.hoskins@protestengineering.com

Reviewed By:

Nicholas Dobson

Branch Manager – Gold Coast p | 0406 421 488

e | nick.dobson@protestengineering.com

Attachments: 1. Site Images;

2. Site Plan & Test Locations;

Density Reports;





GEOTECHNICAL // TESTING SERVICES // STRUCTURAL

Attachment 1

Site Images





Site Image 1 – Strip to Natural (11/10/2022)



Site Image 2 – Construction in Progress (14/12/2022)





Site Image 3 – Continuation of Construction (19/12/2022)



Site Image 4 - Continuation of Construction (20/12/2023)

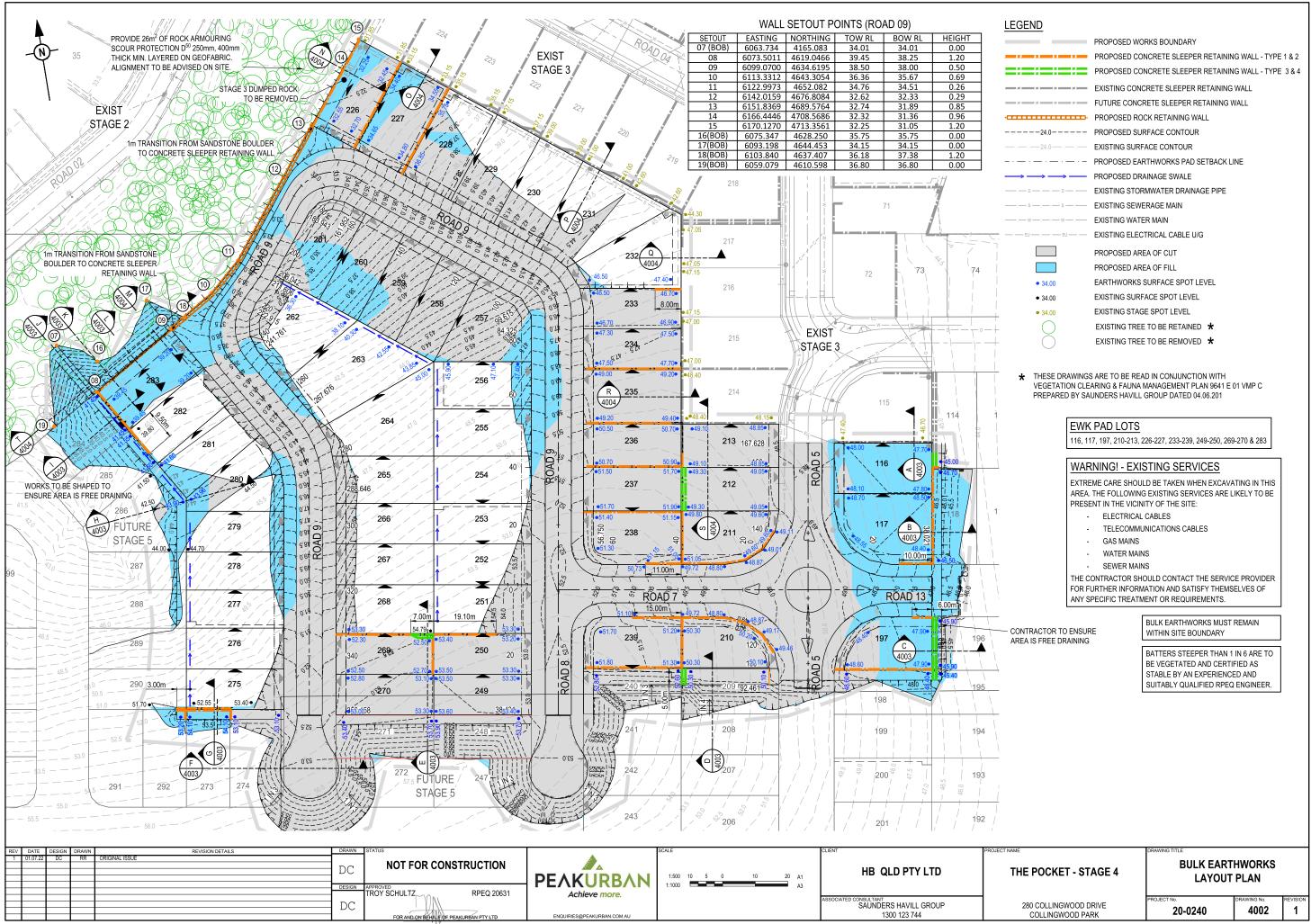


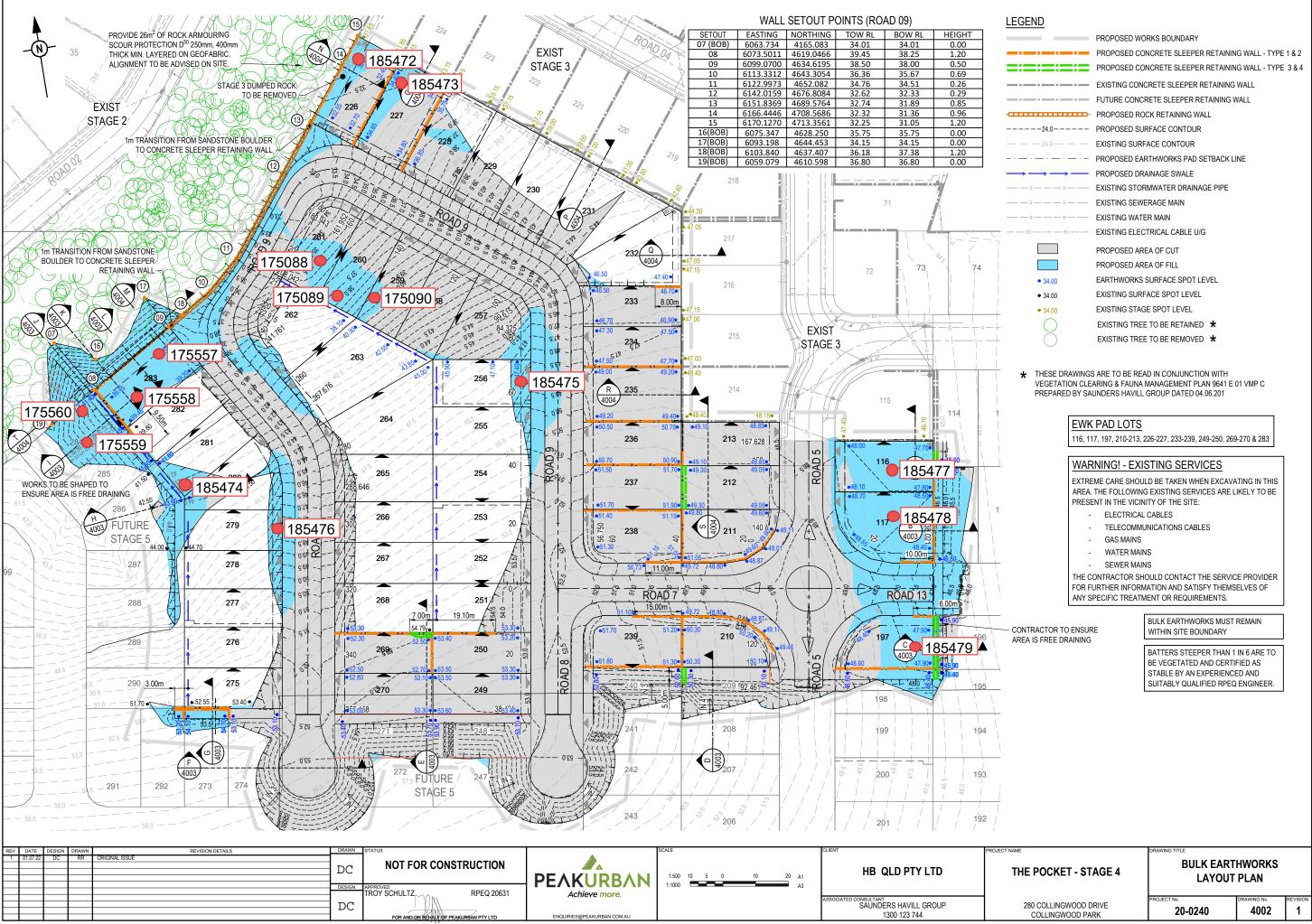


GEOTECHNICAL // TESTING SERVICES // STRUCTURAL

Attachment 2

Site Plan & Test Locations









GEOTECHNICAL // TESTING SERVICES // STRUCTURAL

Attachment 3 Density Reports



Client :	Shadforths			Report Nu	ımber :	SR/PTP/10578 - 4/1
lient Address :	99 Sandalwood Lane, Forest Glen, 4556, QLD			Report Da		20/02/2023
roject Name :	The Pocket - Stage 4	,,		Test Requ		
roject Number :	PTP/10578			reserveda	CSC .	
ocation :	Collingwood Park			Page 1 of 1		
ocation .	Comingwood i ark					
est Methods :	AS1289.5.4.1, AS1289.5.8.1, AS1289.2.1.1, AS1289.5.7.1,					
ample Number :	S/175088	S/175089	S/175090			
Pate Tested :	14/12/2022	14/12/2022	14/12/2022			
Material Source :	Onsite	Onsite	Onsite			
or use as :	General Fill	General Fill	General Fill			
est / Layer Depths :	150 / -	150 / -	150 / -			
ampling Method :	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b			
ime :	12:30	13:45	14:50			
ot Number :	Lot 261	Lot 260	Lot 259			
ocation 1 :	E: 6152.42	E: 6146.82	E: 6143.18			
ocation 2 :	N: 4639.86	N: 4643.75	N: 4647.28			
ocation 3 :	RL: 37.27	RL: 36.20	RL: 35.26			
ocation 4 :		- -				
est Fraction (mm) :	< 19mm	< 19mm	< 19mm			
Oversize Wet :	5%	6%	6%			
Oversize Density - Dry (t/m³) :	1.00	1.00	2.24			
ssigned MDR (Yes/No):	No	No	No			
ADR Sample Number :	S/175088	S/175089	S/175090			
MDR Test Date :	27/01/2023	27/01/2023	31/01/2023			
Compaction Type :	Standard	Standard	Standard			
oil Description :	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown			
ADR Test Results						
CWD (t/m3) :	2.24	2.24	2.24			
Noisture Variation :	0.0%	0.5%	0.5%			
DJ PCWD (t/m3) :	2.11	2.09	2.24			
DJ Moisture Variation :	0.0%	0.5%	0.5%			
Noisture Test Results :						
ield Moisture Content :	13.0%	13.5%	12.5%			
Noisture Specification :	-	-	-			
ariation from OMC :	0.0% Dry of OMC	0.5% Dry of OMC	0.5% Dry of OMC			
elative Moisture Ratio (Q250) :	-	-	-			
Noisture Ratio :	N/A	N/A	N/A			
Density Test Results						
ield Wet Density (t/m3) :	2.15	2.12	2.20			
ensity Specification :	95%	95%	95%			
Vet Density Ratio :	102.0%	101.5%	98.5%			
					1	
	-	•	•			
oil Particle Density (APD) t/m3 :						
oil Particle Density (APD) Date :						
emarks :						
Note: The resu	Its contained in this report relate	only to the item/s that were te	ested/sampled		APPROVED.	SIGNATORY
	for Compliance with ISO/		,		AFFROVED	JIGHATONI
NATA Protest Engi	ineering (Gold Coast) Acci	editation Number - 1966	7		1	
Base Labora	atory Site Number - 22838	- Gold Coast			~	_
WORLD RECOGNISED Base Labora	atory Address - 8/36 Bland	k Street, ORMEAU, QLD	1208		Nick Dobsor	n - Signatory
		• •				- ,

 Document Number:
 RF1
 Date: 29/08/2022



Client :	Shadforths			Report Nun	nber :	SR/PTP/10578 - 5/1	
Client Address :	99 Sandalwood Lane, Fo	rest Glen. 4556. QLD		Report Date		1/03/2023	
Project Name :	The Pocket - Stage 4	,,		Test Reque		-	
Project Number :	PTP/10578						
Location :	Collingwood Park		Page 1 of 1				
Test Methods :	AS1289.5.4.1, AS1289.5.	8.1, AS1289.2.1.1, AS128	9.5.7.1,				
Sample Number :	S/175557	S/175558	S/175559	S/175560			
Date Tested :	19/12/2022	19/12/2022	19/12/2022	19/12/2022			
Material Source :	Onsite	Onsite	Onsite	Onsite			
or use as :	General Fill	General Fill	General Fill	General Fill			
est / Layer Depths :	150/-	150 / -	150 / -	150 / -			
iampling Method :	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b			
ime :	10:00	10:30	11:00	11:30			
ot Number :	Lot 283	Lot 283	Lot 284	Lot 284			
ocation 1 :	E: 6091.711	E: 6098.129	E: 6084.201	E: 6077.125			
ocation 2 :	N: 4623.607	N: 4626.330	N: 4621.307	N: 4613.048			
ocation 3 :	RL: 39.349	RL: 39.240	RL: 39.341	RL: 39.433			
ocation 4 :	-	-	-	-			
Test Fraction (mm) :	< 19mm	< 19mm	< 19mm	< 19mm			
Oversize Wet :	6%	0%	0%	0%			
	3/0	570	5/0	376			
Oversize Density - Dry (t/m³) :	2.39	-	-	=			
Assigned MDR (Yes/No):	No	No	No	No			
ADR Sample Number :	S/175557	S/175558	S/175559	S/175560			
MDR Test Date :	31/01/2023	31/01/2023	31/01/2023	31/01/2023			
ompaction Type :	Standard	Standard	Standard	Standard			
	Gravelly Sandy Clay -						
ioil Description :	Brown	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown			
ADR Test Results							
PCWD (t/m3):	1.85	1.88	1.87	1.84			
Moisture Variation :	-0.5%	0.5%	0.0%	0.5%			
ADJ PCWD (t/m3) :	1.88	-	-	-			
ADJ Moisture Variation :	-0.5%	-	-	-			
Moisture Test Results :							
ield Moisture Content :	12.5%	13.5%	14.5%	13.5%			
Noisture Specification :	-	-	-	-			
/ariation from OMC :	0.5% Wet of OMC	0.5% Dry of OMC	0.0% Dry of OMC	0.5% Dry of OMC			
telative Moisture Ratio (Q250) :	-	-	-	-			
Moisture Ratio :	N/A	N/A	N/A	N/A			
Pensity Test Results							
ield Wet Density (t/m3) : Density Specification :	1.79	1.78	1.78	1.84			
Jensity Specification :	95%	95%	95%	95%			
Wet Density Ratio :	95.5%	95.0%	95.0%	99.5%			
	-	-	-	-			
oil Particle Density (APD) t/m3 :					1	L	
oil Particle Density (APD) Date :							
temarks :							
	ults contained in this report relat	e only to the item/s that were to	ested/sampled		APPROVED SI	GNATORY	
Accredited	for Compliance with ISO/	IEC 17025 - Testing			ALLINOVED 31	SHATURI	
	gineering (Gold Coast) Accr		7		ĺ		
Base Labor	oratory Site Number - 22838 - Gold Coast			rf-			
WORLD RECORDED ACCREDITATION Base Laboratory Address - 8/36 Blanck Street, ORMEAU, QLD 4208			Nick Dobson - Signatory				
ACCREDITATION Base Labor	atory Address - 8/36 Blanc	k Street, ORMEAU, QLD 4	208		Nick Dobson	- Signatory	



Client :	Shadforths				port Nun	PTP/10578 - 10/1		
Client Address :		99 Sandalwood Lane, Forest Glen, 4556, QLD				2:	21/03/2023	
Project Name :	_	The Pocket - Stage 4				Test Request : -		
Project Number :	PTP/10578 Page 1 of 2							
Location :	Collingwood Park							
Test Methods :	AS1289.5.4.1, AS1289.5	.8.1, AS1289.2.1.1, AS128	89.5.7.1,					
Sample Number :	S/185472	S/185473	S/185474	S/18547	75	S/185476	S/185477	
Date Tested :	7/03/2023	7/03/2023	7/03/2023	7/03/20	23	7/03/2023	7/03/2023	
Material Source :	Onsite	Onsite	Onsite	Onsite		Onsite	Onsite	
For use as :	General Fill	General Fill	General Fill	General	Fill	General Fill	General Fill	
Test / Layer Depths :	150 / 175	150 / 175	150 / 175	150 / 17	75	150 / 175	150 / 175	
Sampling Method :	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1	- cl6.4b	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b	
Time :	10:00	10:10	10:20	10:30		10:40	10:50	
Lot Number :	226	227	281	256		279	116	
Location 1 :	O/S NW CNR	O/S NW ONR	O/S SE CNR	O/S SE C	NR	O/S SE CNR	Centre of Lot	
Location 2 :	10m South	8m South	5m West	10m No		6m North	_	
Location 3 :	3m East	3m East	4m North	2m We		2m West	_	
Location 4 :	FL	FL	FL	FL	-	FL	FL	
Test Fraction (mm) :	< 19mm	< 19mm	< 19mm	< 19mr	n	< 19mm	< 19mm	
Oversize Wet :	0%	0%	0%	0%		0%	0%	
		0,1	0.1	-				
Oversize Density - Dry (t/m³) :	-	-	-	-		-	-	
Assigned MDR (Yes/No):	No	No	No	No		No	No	
MDR Sample Number :	S/185472	S/185473	S/185474	S/185475		S/185476	S/185477	
MDR Test Date :	9/03/2023	9/03/2023	9/03/2023	9/03/2023		9/03/2023	9/03/2023	
Compaction Type :	Standard	Standard	Standard	Standard		Standard	Standard	
Soil Description :	Sandy Clay Bron	Sandy Clay Brown	Sandy Clay Brown	Sandy Clay Brown		Sandy Clay Brown	Sandy Clay Brown	
MDR Test Results								
PCWD (t/m3):	2.06	2.07	2.06	2.05		2.04	2.06	
Moisture Variation :	2.5%	2.5%	2.5%	2.5%		2.5%	2.5%	
Wioisture variation .	2.5%	2.376	2.3%	2.376		2.3%	2.376	
ADJ PCWD (t/m3) :	-	-	-	-		-	-	
ADJ Moisture Variation :	-	-	-	-		-	-	
Moisture Test Results :								
Field Moisture Content :	8.5%	8.5%	8.0%	8.5%		8.0%	7.5%	
Moisture Specification :	-	-	-	-		-	-	
Variation from OMC :	2.5% Dry of OMC	2.5% Dry of OMC	2.5% Dry of OMC	2.5% Dry of	омс	2.5% Dry of OMC	2.5% Dry of OMC	
Relative Moisture Ratio (Q250) :	-	-	-	-		-	-	
Moisture Ratio :	N/A	N/A	N/A	N/A		N/A	N/A	
Density Test Results								
Field Wet Density (t/m3) :	2.14	2.12	2.15	2.11		2.13	2.14	
Density Specification :	95%	95%	95%	95%		95%	95%	
Wet Density Ratio :	103.5%	102.5%	104.0%	103.5% 104.0%		104.0%	104.0%	
	-	-	-	-		-	-	
Soil Particle Density (APD) t/m3 :								
Soil Particle Density (APD) Date :								
Remarks :								
No.				ı				
_				l		APPROVED SIGNATOR	Y	

WORLD RECOGNISED ACCREDITATION

Accredited for Compliance with ISO/ IEC 17025 - Testing
Protest Engineering (Gold Coast) Accreditation Number - 19667
Base Laboratory Site Number - 22838 - Gold Coast

Base Laboratory Address - 8/36 Blanck Street, ORMEAU, QLD 4208

4

Nick Dobson - Signatory

Date: 28/02/2023



Client :	Shadforths			Report Number :	SR/PTP/10578 - 10/1	
Client Address :	99 Sandalwood Lane, Fo	rest Glen, 4556, QLD		Report Date :	21/03/2023	
Project Name :	The Pocket - Stage 4			Test Request :	-	
Project Number :	PTP/10578				Dana 2 of 2	
Location :	Collingwood Park				Page 2 of 2	
Test Methods :	AS1289.5.4.1, AS1289.5.8.1, AS1289.2.1.1, AS1289.5.7.1,					
Sample Number :	S/185478	S/185479				
Date Tested :	7/03/2023	7/03/2023				
Material Source : For use as :	Onsite General Fill	Onsite General Fill				
Test / Layer Depths :	150 / 175	150 / 175				
Sampling Method :	AS1289.1.2.1 - cl6.4b	AS1289.1.2.1 - cl6.4b				
Time :	11:00	11:10				
Lot Number :	117	197				
Location 1 :	Centre of Lot	O/S SE CNR				
Location 2 :	-	10m North				
Location 3 :	-	10m West				
Location 4 :	FL	FL				
Test Fraction (mm) :	< 19mm	< 19mm				
Oversize Wet :	0%	0%				
Oversize Density - Dry (t/m³) :	-	-				
Assigned MDR (Yes/No) :	No	No				
MDR Sample Number :	S/185478	S/185479				
MDR Test Date :	9/03/2023	9/03/2023				
Compaction Type :	Standard	Standard				
Soil Description :	Sandy Clay Brown	Sandy Clay Brown				
MDR Test Results	1	l				
PCWD (t/m3):	2.05	2.07				
Moisture Variation :	2.5%	2.5%				
ADJ PCWD (t/m3) :	_	_				
ADJ Moisture Variation :	-	-				
Moisture Test Results :						
Field Moisture Content :	8.0%	8.5%				
Moisture Specification :	0.070	0.570				
Variation from OMC :	2.5% Dry of OMC	2.5% Dry of OMC				
	2.3% Dry or Olvic	2.3% DI y OI OIVIC				
Relative Moisture Ratio (Q250) :	-					
Moisture Ratio :	N/A	N/A				
Density Test Results	2.42	2.14				
Field Wet Density (t/m3):	2.13	2.14				
Density Specification :	95%	95%				
Wet Density Ratio :	104.0%	103.5%				
				•		
	-	-				
Soil Particle Dencity (ARD) t/m2 :				1	1	
Soil Particle Density (APD) t/m3 :						
Soil Particle Density (APD) Date :	1					
Remarks :						
_				APPR	OVED SIGNATORY	
	for Compliance with ISO/				1	
Protest Eng	ineering (Gold Coast) Accr	editation Number - 1966	7		1	

Base Laboratory Site Number - 22838 - Gold Coast

Base Laboratory Address - 8/36 Blanck Street, ORMEAU, QLD 4208

Nick Dobson - Signatory

Date: 28/02/2023