Douglas Partners Pty Ltd
ABN 75 053 980 117
www.douglaspartners.com.au
1/28 Kessling Avenue
Kunda Park QLD 4556
Phone (07) 5351 0400

Shadforth Civil Pty Ltd
99 Sandalwood Lane
Forest Glen QLD 4556

Project 209892.00
22 November 2022
R.001.docx
SDH:BWE

Attention: Alex Watson

Email: Alex.watson@shadcivil.com.au

Geotechnical Inspections and Testing
Proposed Bulk Earthworks
Phase 4 Bulk Earthworks, Harmony Estate

1. Introduction

This report presents the results of the inspection and testing of bulk earthworks for Phase 4, as part of the Harmony Subdivision at Palmview. The work was undertaken at the request of Shadforth Civil Pty Ltd (Shadforth).

The scope of testing and inspections provided by Douglas Partners Pty Ltd (DP) comprised 'Level 1' geotechnical inspection and testing of bulk earthworks in general accordance with AS 3798 (2007). No other earthworks specification was provided for the work.

This report must be read in conjunction with the attached notes entitled 'About this Inspection Report' along with any other explanatory notes and should be kept in its entirety without separation of individual pages or sections.

2. Bulk Filling

2.1 Extent of Works

This report only addresses the bulk fill placed at the development as shown on the layout plan Drawing No. 231-110 prepared by Calibre Professional Services Pty Ltd and supplied by Shadforth over the period 5 November 2021 to 19 July 2022, as covered by the test locations (including elevation) noted on the test report sheets and test location plan attached to this report. Any other part of the site is not covered by this report unless stated otherwise.

In general, the bulk earthworks operations comprised stripping of the existing surface, then placement and compaction of fill material sourced from onsite to bring the ground level up to the design surface level required for the works.

2.2 Stripping Inspections and Proof Rolling

Geotechnical personnel from DP inspected the stripped subgrade areas prior to the placement of bulk fill. All subgrade areas were stripped of vegetation or any other unsuitable material. The subgrade was test rolled using on site construction equipment (ie. vibrating pad foot compactor, loaded truck) and was considered suitable to accept the placement of fill. Any identified 'weak' or problem subgrade areas were rectified prior to the placement of fill.

2.3 Fill Materials

Fill material typically comprised sandy clay and clayey sand sourced from onsite.

2.4 Placement and Testing of Fill

Fill materials were placed on site by conventional earthmoving equipment, spread out in uniform layers of appropriate thicknesses for the equipment used and test procedures adopted, and then compacted using a vibrating roller.

Observations were made on site by the supervising geotechnical personnel from DP who were present during the placement of fill over the period 5 November 2021 to 19 July 2022.

The compaction requirements for the earthworks included a minimum density ratio of 95% Standard compaction. No moisture range was specified.

Following the compaction of each layer, testing was carried out to assess compliance with the specified density ratio. In conjunction with test rolling where applicable, testing was carried out using the nuclear gauge method AS 1289.5.8.1 (2007) at the testing frequency nominated in AS 3798 and the project requirements. The relative compaction was determined using the Hilf method AS 1289.5.7.1 (2006).

Where a layer was considered to have failed based on the wet density values measured by the nuclear gauge, these test values were not recorded and the contractor was advised that the layer required further rolling and testing prior to the placement of any further fill. At times when fill material was either too wet or dry, the contractor was advised to dry back or add moisture to the fill, in order to bring the field moisture content back closer to the optimum moisture content.

A total of 195 density tests were recorded by DP on filling placed over the period 5 November 2021 to 19 July 2022. A summary of the testing is presented in Table 1.

Table 1: Summary of Density Testing

	Compaction	Moisture
Specification	95% Std.	-
No. of Tests	195	195
Range	92.5% to 106.5%	4.0% wet to 3.5% dry of OMC
Mean Average	99.6%	0.2% wet of OMC
No. of Tests Outside Specification	5	-

Note: Std. –Standard compaction

With respect to the failed test results, the layer in which the failure was recorded was subsequently re-rolled. The failed area was then retested near to the location of the failure. The retests passed the compaction specification.

3. Comments

DP undertook inspection and earthworks testing in general accordance with a Level 1 standard as defined in AS 3798 (2007).

It is considered that the placement and compaction of the bulk fill over the period 5 November 2021 to 19 July 2022 for Phase 4, as part of the Harmony Subdivision at Palmview has been carried out in general accordance with the requirements of the specification. DP does not undertake to guarantee the work of the contractors nor relieve their responsibility to produce a completed product conforming to the requirements of the specification.

For building on controlled filled areas, consideration should be given by the user to the following:

- possible disruption of the compacted fill by the installation of services;
- the possibility that additional fill has been placed before and after the dates of field density tests or at times when DP has not been notified that filling operations are in progress;
- adequate containment of the filled areas;
- the suitability of the filled land to support structures of various types without excessive deflection, in particular, the shrink-swell properties of the fill and natural soils must be considered in foundation/footing slab design and in detailing future structures;
- the potential for differential settlements due to differential thicknesses of fill; and
- any topsoil which may have been placed following the completion of bulk filling.

Based on the inspection and test results, it is considered the fill referred to in this report may be considered as 'controlled fill' as defined in AS 2870 (2011) for site classification purposes.

4. References

AS 1289.5.7.1. (2006). *Methods for testing soils for engineering purposes - Soil compaction and density tests - Compaction control test - Hilf density ratio and Hilf moisture variation (rapid method).* Standards Australia.

AS 1289.5.8.1. (2007). *Methods for testing soils for engineering purposes - Soil compaction and density tests - Determination of field density and field moisture content of a soil using a nuclear surface moisture-density gauge - Direct transmission mode.* Standards Australia.

AS 2870. (2011). *Residential Slabs and Footings.* Standards Australia.

AS 3798. (2007). *Guidelines on Earthworks for Commercial and Residential Developments.* Standards Australia.

5. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report (or services) for the bulk earthworks for Phase 4, as part of the Harmony Subdivision at Palmview. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Shadforth Civil Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

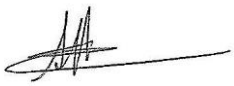
The results provided in the report are indicative of the subsurface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

Please contact the undersigned if you have any questions on this matter.

Yours faithfully

Douglas Partners Pty Ltd



Shae Harry
Laboratory Manager

Reviewed by

Brett Egen (RPEQ 8597)
Senior Associate

Attachments: About this Inspection Report
Laboratory Test Results
Test Location Plan

About this Inspection Report

Introduction

These notes are provided to amplify DP's inspection report in regard to the limitations of carrying out inspection work. Not all notes are necessarily relevant to this report.

Standards

This inspection report has been prepared by qualified personnel to current engineering standards of interpretation and analysis.

Copyright and Limits of Use

This inspection report is the property of DP and is provided for the exclusive use of the client for the specific project and purpose as described in the report. It should not be used by a third party for any purpose other than to confirm that the construction works addressed in the report have been inspected as described. Use of the inspection report is limited in accordance with the Conditions of Engagement for the commission.

DP does not undertake to guarantee the works of the contractors or relieve them of their responsibility to produce a completed product conforming to the design.

Reports

This inspection report may include advice or opinion that is based on engineering and/or geological interpretation, information provided by the client or the client's agent, and information gained from:

- an investigation report for the project (if available to DP);
- inspection of the work, exposed ground conditions, excavation spoil and performance of excavating equipment while DP was on site;
- investigation and testing that was carried out during the site inspection;
- anecdotal information provided by authoritative site personnel; and
- DP's experience and knowledge of local geology.

Such information may be limited by the frequency of any inspection or testing that was able to be practically carried out, including possible site or cost constraints imposed by the client/ contractor(s). For these reasons, the reliability of this inspection report is limited by the scope of information on which it relies.

Every care is taken with the inspection report as it relates to interpretation of subsurface conditions and any recommendations or suggestions for construction or design. However, DP cannot anticipate or assume responsibility for:

- unexpected variations in subsurface conditions that are not evident from the inspection; and
- the actions of contractors responding to commercial pressures.

Should these issues occur, then additional advice should be sought from DP and, if required, amendments made.

This inspection report must be read in conjunction with any attached information. This inspection report should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions from review by others of this inspection report or test data, which are not otherwise supported by an expressed statement, interpretation, outcome or conclusion stated in this inspection report.

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-1**
Issue Number:	1
Date Issued:	22/11/2021
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	15907
Date Sampled:	05/11/2021
Dates Tested:	05/11/2021 - 12/11/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-15907A	SS-15907B	
Date Tested	05/11/2021	05/11/2021	
Time Tested	09:16	09:24	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	0505778	0505755	
Northing	7041862	7041871	
Elevation (m)	R.L 12.3	R.L 12.3	
Soil Description	Sandy Clay	Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.08	2.07	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.07	2.07	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	3.5	3.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**100.5**	**100.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-2**
Issue Number:	1
Date Issued:	23/11/2021
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16059
Date Sampled:	18/11/2021
Dates Tested:	18/11/2021 - 22/11/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16059A		
Date Tested	18/11/2021		
Time Tested	07:40		
Test Request #/Location	Bulk Earthworks		
Easting	0505715		
Northing	7041870		
Elevation (m)	R.L. 13.4		
Soil Description	Clayey Sand		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.06		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.05		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**100.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-3**
Issue Number:	1
Date Issued:	29/11/2021
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16084
Date Sampled:	19/11/2021
Dates Tested:	19/11/2021 - 25/11/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16084A		
Date Tested	19/11/2021		
Time Tested	09:38		
Test Request #/Location	Bulk Earthworks		
Easting	0505802		
Northing	7041831		
Elevation (m)	R.L 12.2		
Soil Description	Clayey Sand		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.05		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.15		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**95.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-4**
Issue Number:	1
Date Issued:	14/12/2021
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16203
Date Sampled:	07/12/2021
Dates Tested:	07/12/2021 - 10/12/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16203A		
Date Tested	07/12/2021		
Time Tested	07:55		
Test Request #/Location	Bulk Earthworks		
Easting	0505438		
Northing	7041964		
Elevation (m)	R.L 14.7		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	1.95		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	1.95		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**99.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-5**
Issue Number:	1
Date Issued:	14/12/2021
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16218
Date Sampled:	08/12/2021
Dates Tested:	08/12/2021 - 10/12/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16218A		
Date Tested	08/12/2021		
Time Tested	12:51		
Test Request #/Location	Bulk Earthworks		
Easting	0505453		
Northing	7041954		
Elevation (m)	R.L 14.4		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.05		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	1.96		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	-0.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**104.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-6**
Issue Number:	1
Date Issued:	16/12/2021
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16247
Date Sampled:	09/12/2021
Dates Tested:	09/12/2021 - 15/12/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16247A		
Date Tested	09/12/2021		
Time Tested	12:32		
Test Request #/Location	Bulk Earthworks		
Easting	0505384		
Northing	7041966		
Elevation (m)	R.L 14.5		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.05		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.02		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	-2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**101.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-7**
Issue Number:	1
Date Issued:	20/12/2021
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16293
Date Sampled:	14/12/2021
Dates Tested:	14/12/2021 - 16/12/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16293A	SS-16293B	SS-16293C
Date Tested	14/12/2021	14/12/2021	14/12/2021
Time Tested	12:40	12:46	12:52
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505536	0505523	0505455
Northing	7041944	7041958	7041969
Elevation (m)	R.L 13.2	R.L 13.3	R.L 13.8
Thickness of Layer (mm)	150	150	150
Soil Description	Clay	Clay	Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.10	2.07	2.08
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.04	2.03	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.0	0.0	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**103.0**	**102.0**	**101.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-8**
Issue Number:	1
Date Issued:	20/12/2021
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16330
Date Sampled:	15/12/2021
Dates Tested:	15/12/2021 - 17/12/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16330A	SS-16330B	SS-16330C
Date Tested	15/12/2021	15/12/2021	15/12/2021
Time Tested	12:21	14:46	14:46
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505544	0505542	0505576
Northing	7041913	7041899	7041905
Elevation (m)	R.L 13.7	R.L 13.6	R.L 13.7
Thickness of Layer (mm)	150	150	150
Soil Description	Clay	Clay	Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.07	2.09	2.04
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.15	2.17	2.13
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.5	-1.5	-2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**96.5**	**96.0**	**95.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-9**
Issue Number:	1
Date Issued:	05/01/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16345
Date Sampled:	16/12/2021
Dates Tested:	16/12/2021 - 20/12/2021
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16345A	SS-16345B	SS-16345C
Date Tested	16/12/2021	16/12/2021	16/12/2021
Time Tested	09:45	14:05	14:18
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505508	0505467	0505406
Northing	7041906	7041913	7041915
Elevation (m)	R.L 15.1	R.L 15.0	R.L 15.0
Thickness of Layer (mm)	150	150	150
Soil Description	Clay	Clay	Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.10	2.08	2.08
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.01	2.02	1.98
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	2.0	1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**104.5**	**103.0**	**105.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-10**
Issue Number: 1
Date Issued: 05/01/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 16369
Date Sampled: 17/12/2021
Dates Tested: 17/12/2021 - 21/12/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16369A	SS-16369B	SS-16369C
Date Tested	17/12/2021	17/12/2021	17/12/2021
Time Tested	12:48	12:57	13:07
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505612	0505612	0505616
Northing	7041875	7041898	7041881
Elevation (m)	R.L 13.5	R.L 13.4	R.L 13.0
Thickness of Layer (mm)	150	150	150
Soil Description	Clay	Clay	Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.96	2.02	1.99
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	1.92	1.96	1.93
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	2.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**102.0**	**103.0**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-11**
Issue Number: 1
Date Issued: 05/01/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 16412
Date Sampled: 21/12/2021
Dates Tested: 21/12/2021 - 23/12/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-16412A	SS-16412B	SS-16412C	SS-16412D
Date Tested	21/12/2021	21/12/2021	21/12/2021	21/12/2021
Time Tested	10:29	10:34	10:43	10:51
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505408	0505398	0505449	0505529
Northing	7041892	7041887	7041877	7041869
Elevation (m)	R.L 15.2	R.L 15.2	R.L 14.9	R.L 14.9
Thickness of Layer (mm)	150	150	150	150
Soil Description	Clay	Clay	Clay	Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.99	2.03	1.99	2.04
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.06	2.00	2.03	2.06
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	3.0	3.0	2.5	3.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**96.5**	**101.5**	**98.0**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-12**
Issue Number:	1
Date Issued:	11/01/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16435
Date Sampled:	22/12/2021
Dates Tested:	22/12/2021 - 06/01/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16435A	SS-16435B	
Date Tested	22/12/2021	22/12/2021	
Time Tested	12:47	13:01	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	050557	0505540	
Northing	7041824	7041822	
Elevation (m)	R.L 14.0	R.L 14.0	
Thickness of Layer (mm)	150	150	
Soil Description	Clay	Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	1.96	1.95	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	1.96	1.98	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.0	0.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**100.0**	**99.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-13**
Issue Number:	1
Date Issued:	20/01/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16496
Date Sampled:	14/01/2022
Dates Tested:	14/01/2022 - 19/01/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16496A		
Date Tested	14/01/2022		
Time Tested	09:25		
Test Request #/Location	Bulk Earthworks		
Easting	0505379		
Northing	7041794		
Elevation (m)	R.L 15.2		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	1.86		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	1.96		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	-0.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**95.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-14**
Issue Number:	1
Date Issued:	20/01/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16511
Date Sampled:	17/01/2022
Dates Tested:	17/01/2022 - 18/01/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16511A		
Date Tested	17/01/2022		
Time Tested	12:58		
Test Request #/Location	Bulk Earthworks		
Easting	0505399		
Northing	7041786		
Elevation (m)	R.L 15.7		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	1.96		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	1.89		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**104.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-15**
Issue Number:	1
Date Issued:	21/01/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16523
Date Sampled:	18/01/2022
Dates Tested:	18/01/2022 - 20/01/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16523A		
Date Tested	18/01/2022		
Time Tested	12:55		
Test Request #/Location	Bulk Earthworks		
Easting	0505404		
Northing	7041769		
Elevation (m)	R.L 15.5		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	1.98		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	1.92		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**103.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-16**
Issue Number:	1
Date Issued:	21/01/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16545
Date Sampled:	19/01/2022
Dates Tested:	19/01/2022 - 20/01/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16545A		
Date Tested	19/01/2022		
Time Tested	10:58		
Test Request #/Location	Bulk Earthworks		
Easting	0505431		
Northing	7041769		
Elevation (m)	R.L 14.5		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.10		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.09		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**101.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-17**
Issue Number:	1
Date Issued:	28/01/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16620
Date Sampled:	25/01/2022
Dates Tested:	25/01/2022 - 27/01/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16620A		
Date Tested	25/01/2022		
Time Tested	12:56		
Test Request #/Location	Bulk Earthworks		
Easting	0505436		
Northing	7041827		
Elevation (m)	R.L 14.9		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	1.95		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	1.88		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**103.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-18**
Issue Number: 1
Date Issued: 07/02/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 16679
Date Sampled: 02/02/2022
Dates Tested: 02/02/2022 - 04/02/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16679A	SS-16679B	SS-16679C
Date Tested	02/02/2022	02/02/2022	02/02/2022
Time Tested	12:52	12:59	13:09
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505489	0505459	0505427
Northing	7041812	7041811	7041821
Elevation (m)	R.L 13.6	R.L 13.6	R.L 13.7
Thickness of Layer (mm)	150	150	150
Soil Description	Clay	Clay	Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.98	1.96	1.98
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.03	2.02	2.02
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.5**	**97.0**	**97.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-19**
Issue Number: 1
Date Issued: 25/02/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 16707
Date Sampled: 07/02/2022
Dates Tested: 07/02/2022 - 08/02/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-16707A	SS-16707B	SS-16707C	SS-16707D
Date Tested	07/02/2022	07/02/2022	07/02/2022	07/02/2022
Time Tested	12:54	13:05	13:14	13:24
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505517	0505512	0505522	0505451
Northing	7041759	7041763	7041770	7041810
Elevation (m)	R.L. 13.0	R.L. 13.0	R.L. 13.1	R.L. 13.2
Thickness of Layer (mm)	150	150	150	150
Soil Description	Clay	Clay	Clay	Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.03	2.01	2.03	2.00
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.03	1.99	1.97	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-2.5	0.0	0.0	-3.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**100.0**	**101.5**	**103.0**	**98.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-20**
Issue Number:	1
Date Issued:	25/02/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16716
Date Sampled:	08/02/2022
Dates Tested:	08/02/2022 - 09/02/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16716A	SS-16716B	SS-16716C
Date Tested	08/02/2022	08/02/2022	08/02/2022
Time Tested	12:48	13:02	13:15
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505559	0505577	0505590
Northing	7041796	7041780	7041756
Elevation (m)	R.L. 11.3	R.L. 11.3	R.L. 11.1
Thickness of Layer (mm)	150	150	150
Soil Description	Clay	Clay	Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.98	1.94	1.98
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	1.94	1.91	1.93
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.5	0.0	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**101.5**	**101.5**	**102.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-21**
Issue Number:	1
Date Issued:	25/02/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16737
Date Sampled:	09/02/2022
Dates Tested:	09/02/2022 - 11/02/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16737A		
Date Tested	09/02/2022		
Time Tested	11:02		
Test Request #/Location	Bulk Earthworks		
Easting	0505740		
Northing	7041799		
Elevation (m)	R.L. 12.6		
Thickness of Layer (mm)	150		
Soil Description	Clayey Sand		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.09		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.16		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**96.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-22**
Issue Number: 1
Date Issued: 25/02/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 16772
Date Sampled: 10/02/2022
Dates Tested: 10/02/2022 - 16/02/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-16772A	SS-16772B	SS-16772C	SS-16772D
Date Tested	10/02/2022	10/02/2022	10/02/2022	10/02/2022
Time Tested	12:54	13:04	13:12	13:18
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505785	0505766	0505730	0505715
Northing	7041764	7041758	7041774	7041814
Elevation (m)	R.L. 11.1	R.L. 11.1	R.L. 11.2	R.L 11.3
Thickness of Layer (mm)	150	150	150	150
Soil Description	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.10	1.94	2.03	2.05
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.13	2.03	2.12	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	3.0	0.5	-0.5	1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.5**	**95.5**	**96.0**	**97.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-23**
Issue Number:	1
Date Issued:	25/02/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16802
Date Sampled:	11/02/2022
Dates Tested:	11/02/2022 - 17/02/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16802A	SS-16802B	SS-16802C
Date Tested	11/02/2022	11/02/2022	11/02/2022
Time Tested	11:49	11:54	11:59
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505797	0505816	0505696
Northing	7041858	7041850	7041780
Elevation (m)	R.L. 12.1	R.L. 12.1	R.L. 12.7
Thickness of Layer (mm)	150	150	150
Soil Description	Clayey Sand	Clayey Sand	Clayey Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.03	2.02	2.12
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.12	2.08	2.16
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.5	2.5	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**95.5**	**97.0**	**98.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-24**
Issue Number: 1
Date Issued: 25/02/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 16832
Date Sampled: 14/02/2022
Dates Tested: 14/02/2022 - 16/02/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16832A	SS-16832B	SS-16832C
Date Tested	14/02/2022	14/02/2022	14/02/2022
Time Tested	12:18	12:22	12:30
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505719	05055737	0505749
Northing	7041774	7041756	7041746
Elevation (m)	R.L. 12.3	R.L. 12.1	R.L. 12.3
Thickness of Layer (mm)	150	150	150
Soil Description	Clayey Sand	Clayey Sand	Clayey Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.17	2.14	2.14
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.26	2.13	2.15
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.0	-0.5	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**96.0**	**100.5**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-25**
Issue Number:	1
Date Issued:	25/02/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16927
Date Sampled:	18/02/2022
Dates Tested:	18/02/2022 - 23/02/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	SS-16927A	SS-16927B	SS-16927C	SS-16927D	SS-16927E
Date Tested	18/02/2022	18/02/2022	18/02/2022	18/02/2022	18/02/2022
Time Tested	11:59	12:05	12:11	12:18	12:25
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505412	0505399	0505380	0505358	0505361
Northing	7041737	7041741	7041748	7041780	7041790
Elevation (m)	R.L. 14.4	R.L. 14.2	R.L. 14.2	R.L. 14.3	R.L. 14.4
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m^3	2.10	2.09	2.07	2.07	2.09
Field Dry Density (FDD) t/m^3	**	**	**	**	**
Peak Converted Wet Density t/m^3	2.27	2.26	2.22	2.20	2.21
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	-2.0	-2.5	-2.5	-1.0	-2.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**92.5**	**92.5**	**93.0**	**94.5**	**94.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-26**
Issue Number:	1
Date Issued:	02/03/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	16962
Date Sampled:	21/02/2022
Dates Tested:	21/02/2022 - 24/02/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-16962A	SS-16962B	
Date Tested	21/02/2022	21/02/2022	
Time Tested	12:45	12:58	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	0505603	0505610	
Northing	7041781	7041789	
Elevation (m)	R.L. 13.3	R.L. 13.0	
Thickness of Layer (mm)	150	150	
Soil Description	Clayey Sand	Clayey Sand	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.25	2.24	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.20	2.21	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	1.5	2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**102.0**	**101.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-27**
Issue Number: 1
Date Issued: 02/03/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 16995
Date Sampled: 22/02/2022
Dates Tested: 22/02/2022 - 24/02/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-16995A	SS-16995B	SS-16995C	SS-16995D
Date Tested	22/02/2022	22/02/2022	22/02/2022	22/02/2022
Time Tested	11:19	11:28	12:33	12:40
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505444	0505422	0505400	0505380
Northing	7041697	7041703	7041739	7041744
Elevation (m)	R.L. 14.1	R.L. 14.2	R.L. 14.0	R.L. 14.1
Thickness of Layer (mm)	150	150	150	150
Soil Description	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.02	2.03	2.04	2.04
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.11	2.06	2.13	2.13
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.5	1.5	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**96.0**	**98.5**	**95.5**	**96.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-28**
Issue Number:	1
Date Issued:	23/03/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17114
Date Sampled:	15/03/2022
Dates Tested:	15/03/2022 - 21/03/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17114A		
Date Tested	15/03/2022		
Time Tested	12:16		
Test Request #/Location	Bulk Earthworks		
Easting	0505535		
Northing	7041721		
Elevation (m)	R.L 11.2		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.20		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.17		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**101.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-29**
Issue Number:	1
Date Issued:	28/03/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17154
Date Sampled:	17/03/2022
Dates Tested:	17/03/2022 - 22/03/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17154A	SS-17154B	
Date Tested	17/03/2022	17/03/2022	
Time Tested	11:07	11:14	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	0505829	0505816	
Northing	7041757	7041647	
Elevation (m)	R.L 11.9	R.L 10.8	
Thickness of Layer (mm)	150	150	
Soil Description	Clay	Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.18	2.05	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.18	2.02	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.0	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**100.0**	**101.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-30**
Issue Number: 1
Date Issued: 28/03/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17190
Date Sampled: 18/03/2022
Dates Tested: 18/03/2022 - 23/03/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17190A	SS-17190B	SS-17190C	SS-17190D
Date Tested	18/03/2022	18/03/2022	18/03/2022	18/03/2022
Time Tested	12:15	12:22	12:30	12:37
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	Retest	Retest	Retest	Retest
Northing	SS-16927A	SS-16927B	SS-16927C	SS-16927D
Elevation (m)	-	-	-	-
Thickness of Layer (mm)	150	150	150	150
Soil Description	Clay	Clay	Clay	Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.11	2.11	2.13	2.13
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.22	2.18	2.19	2.19
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-1.0	0.0	1.0	-0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**95.0**	**97.0**	**97.0**	**97.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-30**
Issue Number:	1
Date Issued:	28/03/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17190
Date Sampled:	18/03/2022
Dates Tested:	18/03/2022 - 23/03/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17190E	SS-17190F	SS-17190G	
Date Tested	18/03/2022	18/03/2022	18/03/2022	
Time Tested	12:45	12:58	13:05	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	
Easting	Retest	0505570	0505718	
Northing	SS-16927E	7041717	7041947	
Elevation (m)	-	R.L 11.2	R.L 12.8	
Thickness of Layer (mm)	150	150	150	
Soil Description	Clay	Clay	Clay	
Test Depth (mm)	150	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	0	
Field Wet Density (FWD) t/m^3	2.11	2.14	2.10	
Field Dry Density (FDD) t/m^3	**	**	**	
Peak Converted Wet Density t/m^3	2.13	2.11	2.19	
Adjusted Peak Converted Wet Density t/m^3	**	**	**	
Moisture Variation (Wv) %	2.5	0.0	1.0	
Adjusted Moisture Variation %	**	**	**	
Hilf Density Ratio (%)	**99.5**	**101.0**	**96.0**	
Compaction Method	**Standard**	**Standard**	**Standard**	
Report Remarks	**	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-31**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17204
Date Sampled:	21/03/2022
Dates Tested:	21/03/2022 - 31/03/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17204A		
Date Tested	21/03/2022		
Time Tested	11:04		
Test Request #/Location	Bulk Earthworks		
Easting	0505551		
Northing	7041774		
Elevation (m)	R.L 13.3		
Thickness of Layer (mm)	150		
Soil Description	Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m^3	2.17		
Field Dry Density (FDD) t/m^3	**		
Peak Converted Wet Density t/m^3	2.20		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	-2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**98.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-32**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17227
Date Sampled:	22/03/2022
Dates Tested:	22/03/2022 - 31/03/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17227A	SS-17227B	SS-17227C
Date Tested	22/03/2022	22/03/2022	22/03/2022
Time Tested	12:15	12:26	12:35
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505558	0505551	0505493
Northing	7041721	7041744	7041746
Elevation (m)	R.L 13.3	R.L 13.2	R.L 13.0
Thickness of Layer (mm)	150	150	150
Soil Description	Clay	Clay	Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.10	2.08	2.09
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.09	2.06	2.18
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	2.0	-2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**101.0**	**95.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-33**
Issue Number: 1
Date Issued: 26/04/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17261
Date Sampled: 23/03/2022
Dates Tested: 23/03/2022 - 04/04/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17261A	SS-17261B	SS-17261C	SS-17261D
Date Tested	23/03/2022	23/03/2022	23/03/2022	23/03/2022
Time Tested	09:32	09:39	09:45	10:00
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505677	0505677	0505658	0505662
Northing	7041845	7041845	7041855	7041874
Elevation (m)	R.L 12.3	R.L 12.0	R.L 12.2	R.L 12.5
Thickness of Layer (mm)	150	150	150	150
Soil Description	Clay	Clay	Clay	Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.05	2.06	2.06	2.05
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.05	2.05	2.04	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	-0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**100.0**	**100.0**	**101.0**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-34**
Issue Number: 1
Date Issued: 26/04/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17302
Date Sampled: 24/03/2022
Dates Tested: 24/03/2022 - 06/04/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17302A	SS-17302B	SS-17302C	SS-17302D
Date Tested	24/03/2022	24/03/2022	24/03/2022	24/03/2022
Time Tested	**	**	**	**
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505543	0505524	0505475	0505446
Northing	7041736	7041733	7041740	7041743
Elevation (m)	R.L 12.3	R.L 12.4	R.L 12.1	R.L 12.3
Thickness of Layer (mm)	150	150	150	150
Soil Description	Clay	Clay	Clay	Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.02	2.03	2.03	2.03
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.06	2.03	1.97	2.04
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	-0.5	1.5	-1.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.0**	**100.0**	**103.0**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-35**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17339
Date Sampled:	25/03/2022
Dates Tested:	25/03/2022 - 08/04/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	SS-17339A	SS-17339B	SS-17339C	SS-17339D	SS-17339E
Date Tested	25/03/2022	25/03/2022	25/03/2022	25/03/2022	25/03/2022
Time Tested	09:19	09:26	09:33	09:40	09:46
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505535	0505516	0505487	0505527	0505556
Northing	7041733	7041736	7041765	7041783	7041773
Elevation (m)	R.L 12.3	R.L 12.2	R.L 12.3	R.L 12.9	R.L 12.9
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	Clay	Clay	Clay	Clay	Clay
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m^3	2.03	2.06	2.08	2.11	2.11
Field Dry Density (FDD) t/m^3	**	**	**	**	**
Peak Converted Wet Density t/m^3	2.10	2.10	2.10	2.10	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	-2.0	-2.5	-2.5	-2.5	-2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**97.0**	**98.0**	**99.0**	**100.5**	**100.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-35**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17339
Date Sampled:	25/03/2022
Dates Tested:	25/03/2022 - 08/04/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	SS-17339F	SS-17339G	SS-17339H	SS-17339I	SS-17339J
Date Tested	25/03/2022	25/03/2022	25/03/2022	25/03/2022	25/03/2022
Time Tested	09:53	10:04	10:12	10:18	10:25
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505599	0505619	0505661	0505698	0505766
Northing	7041801	7041823	7041812	7041801	7041779
Elevation (m)	R.L 13.1	R.L 12.2	R.L 12.8	R.L 12.5	R.L 12.5
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	Clay	Clay	Clay	Clay	Clay
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m^3	2.07	2.08	2.07	2.07	2.07
Field Dry Density (FDD) t/m^3	**	**	**	**	**
Peak Converted Wet Density t/m^3	2.09	2.10	2.11	2.11	2.11
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	-2.0	-2.0	-2.0	-2.0	-2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**99.0**	**99.0**	**98.0**	**98.5**	**98.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-36**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17399
Date Sampled:	01/04/2022
Dates Tested:	01/04/2022 - 09/04/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17399A	SS-17399B	SS-17399C	SS-17399D
Date Tested	01/04/2022	01/04/2022	01/04/2022	01/04/2022
Time Tested	09:26	09:28	09:37	09:40
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505753	0505774	0505724	0505707
Northing	7041884	7041880	7041924	7041935
Elevation (m)	R.L 12.6	R.L 12.5	R.L 12.7	R.L 12.6
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.12	2.16	2.12	2.12
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.20	2.17	2.09	2.08
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-2.0	0.0	1.5	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**96.5**	**99.5**	**101.5**	**101.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-37**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17431
Date Sampled:	04/04/2022
Dates Tested:	04/04/2022 - 11/04/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	SS-17431A	SS-17431B	SS-17431C	SS-17431D	SS-17431E
Date Tested	04/04/2022	04/04/2022	04/04/2022	04/04/2022	04/04/2022
Time Tested	12:01	12:06	12:15	12:19	12:30
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505541	0505513	0505532	0505532	0505510
Northing	7041733	7041732	7041800	7041809	7041815
Elevation (m)	R.L 13.2	R.L 13.0	R.L 14.3	R.L 13.8	R.L 14.0
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m^3	1.96	1.97	2.02	2.14	2.18
Field Dry Density (FDD) t/m^3	**	**	**	**	**
Peak Converted Wet Density t/m^3	1.96	1.92	1.92	2.17	2.18
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**100.0**	**102.5**	**105.5**	**98.5**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-37**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17431
Date Sampled:	04/04/2022
Dates Tested:	04/04/2022 - 11/04/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	SS-17431F	SS-17431G	SS-17431H	SS-17431I	
Date Tested	04/04/2022	04/04/2022	04/04/2022	04/04/2022	
Time Tested	12:38	12:46	12:56	13:08	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	
Easting	0505669	0505665	0505800	0505772	
Northing	7041874	7041854	7041873	7041879	
Elevation (m)	R.L 13.2	R.L 12.9	R.L 12.7	R.L 12.6	
Thickness of Layer (mm)	150	150	150	150	
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty Clay	
Test Depth (mm)	150	150	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	0	0	
Field Wet Density (FWD) t/m^3	2.13	2.11	2.00	2.00	
Field Dry Density (FDD) t/m^3	**	**	**	**	
Peak Converted Wet Density t/m^3	2.03	2.04	1.96	1.92	
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	
Moisture Variation (Wv) %	0.5	0.0	0.5	0.5	
Adjusted Moisture Variation %	**	**	**	**	
Hilf Density Ratio (%)	**104.5**	**103.5**	**102.0**	**104.0**	
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	
Report Remarks	**	**	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-38**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17452
Date Sampled:	05/04/2022
Dates Tested:	05/04/2022 - 11/04/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17452A	SS-17452B	SS-17452C
Date Tested	05/04/2022	05/04/2022	05/04/2022
Time Tested	10:20	10:27	10:34
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505527	0505672	0505672
Northing	7041812	7041789	7041799
Elevation (m)	R.L 14.3	R.L 13.1	R.L 13.2
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.11	2.03	2.03
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.16	2.01	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	-1.0	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.5**	**101.0**	**102.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-39**
Issue Number: 1
Date Issued: 26/04/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17478
Date Sampled: 06/04/2022
Dates Tested: 06/04/2022 - 26/04/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17478A	SS-17478B	SS-17478C	SS-17478D
Date Tested	06/04/2022	06/04/2022	06/04/2022	06/04/2022
Time Tested	09:06	09:22	09:32	09:38
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505667	0505683	0505703	0505824
Northing	7041968	7041950	7041943	7041906
Elevation (m)	R.L 16.1	R.L 16.2	R.L 16.1	R.L 11.9
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.03	2.04	2.07	2.06
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.06	2.02	2.06	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	-3.5	-0.5	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.5**	**101.0**	**100.5**	**103.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-39**
Issue Number:	1
Date Issued:	26/04/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17478
Date Sampled:	06/04/2022
Dates Tested:	06/04/2022 - 26/04/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17478E	SS-17478F	SS-17478G	SS-17478H
Date Tested	06/04/2022	06/04/2022	06/04/2022	06/04/2022
Time Tested	10:38	10:44	10:55	11:03
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	0505715	0505681	0505782	0505748
Northing	7041752	7041760	7041740	7041746
Elevation (m)	R.L 12.0	R.L 11.8	R.L 11.5	R.L 11.3
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty Clay	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.99	1.95	2.02	1.98
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	1.99	1.99	1.99	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-4.0	-1.0	0.5	-3.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**100.0**	**97.5**	**101.0**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-40**
Issue Number: 1
Date Issued: 04/05/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17565
Date Sampled: 12/04/2022
Dates Tested: 12/04/2022 - 29/04/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17565A	SS-17565B	SS-17565C	SS-17565D
Date Tested	12/04/2022	12/04/2022	12/04/2022	12/04/2022
Time Tested	12:34	12:39	12:45	12:50
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505585	505580	505593	505577
Northing	7041697	7041693	7041721	7041727
Elevation (m)	R.L 12.5	R.L 12.3	R.L 12.7	R.L 12.8
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Clayey Sand
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.06	2.10	2.09	2.11
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.10	2.10	2.10	2.16
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	0.5	1.0	0.0	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.0**	**100.0**	**99.5**	**97.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-41**
Issue Number:	1
Date Issued:	04/05/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17600
Date Sampled:	13/04/2022
Dates Tested:	13/04/2022 - 29/04/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-17600A	SS-17600B	SS-17600C	SS-17600D
Date Tested	13/04/2022	13/04/2022	13/04/2022	13/04/2022
Time Tested	09:38	09:43	11:58	12:00
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505627	505616	505787	505778
Northing	7041715	7041723	7041727	7041726
Elevation (m)	R.L 12.4	R.L 12.4	R.L 11.7	R.L 11.8
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.18	2.18	2.09	2.08
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.13	2.12	2.20	2.15
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	0.0	-2.0	-0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**102.0**	**102.5**	**95.0**	**96.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-42**
Issue Number: 1
Date Issued: 06/05/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17648
Date Sampled: 19/04/2022
Dates Tested: 19/04/2022 - 04/05/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	SS-17648A	SS-17648B	SS-17648C	SS-17648D	SS-17648E	SS-17648F
Date Tested	19/04/2022	19/04/2022	19/04/2022	19/04/2022	19/04/2022	19/04/2022
Time Tested	12:41	12:45	12:52	12:56	12:59	13:06
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505658	505679	505698	505736	505734	505714
Northing	7041692	7041692	7041705	7041687	7041685	7041686
Elevation (m)	R.L 12.97	R.L 13.04	R.L 13.26	R.L 13.99	R.L 13.69	R.L 13.88
Thickness of Layer (mm)	150	150	150	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Field Wet Density (FWD) t/m^3	1.97	2.03	2.02	2.04	2.03	2.06
Field Dry Density (FDD) t/m^3	**	**	**	**	**	**
Peak Converted Wet Density t/m^3	2.01	2.04	2.00	2.01	1.99	2.00
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	1.5	1.0	1.0	0.0	0.5	1.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**98.0**	**99.5**	**100.5**	**101.5**	**102.0**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-43**
Issue Number: 1
Date Issued: 06/05/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17667
Date Sampled: 20/04/2022
Dates Tested: 20/04/2022 - 05/05/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	SS-17667A	SS-17667B	SS-17667C	SS-17667D	SS-17667E	SS-17667F
Date Tested	20/04/2022	20/04/2022	20/04/2022	20/04/2022	20/04/2022	20/04/2022
Time Tested	10:16	10:24	10:30	12:45	12:52	12:56
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505728	505709	505751	505618	505622	505623
Northing	7041957	7041957	7041966	7041746	7041762	7041774
Elevation (m)	R.L 12.86	R.L 12.95	R.L 12.77	R.L 12.41	R.L 12.55	R.L 12.63
Thickness of Layer (mm)	150	150	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Field Wet Density (FWD) t/m^3	2.02	2.06	2.09	2.18	2.17	2.18
Field Dry Density (FDD) t/m^3	**	**	**	**	**	**
Peak Converted Wet Density t/m^3	1.98	1.98	2.04	2.05	2.13	2.11
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	1.5	0.5	0.0	2.0	0.0	2.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**102.5**	**104.5**	**102.5**	**106.5**	**101.5**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-44**
Issue Number: 1
Date Issued: 10/05/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17687
Date Sampled: 21/04/2022
Dates Tested: 21/04/2022 - 06/05/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17687A	SS-17687B	
Date Tested	21/04/2022	21/04/2022	
Time Tested	13:16	13:19	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505671	505726	
Northing	7041733	7041731	
Elevation (m)	R.L 11.66	R.L 11.51	
Thickness of Layer (mm)	150	150	
Soil Description	Sandy Silty Clay	Sandy Silty Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.06	2.01	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	1.96	2.04	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	1.0	-1.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**105.0**	**98.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-45**
Issue Number: 1
Date Issued: 10/05/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17715
Date Sampled: 22/04/2022
Dates Tested: 22/04/2022 - 06/05/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17715A	SS-17715B	SS-17715C
Date Tested	22/04/2022	22/04/2022	22/04/2022
Time Tested	11:08	11:13	11:20
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505772	505787	505741
Northing	7041661	7041650	7041666
Elevation (m)	R.L 10.84	R.L 10.76	R.L 10.80
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.97	1.98	1.98
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	1.99	2.02	2.01
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	-1.0	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**98.5**	**98.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-46**
Issue Number:	1
Date Issued:	12/05/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17791
Date Sampled:	03/05/2022
Dates Tested:	03/05/2022 - 11/05/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17791A	SS-17791B	SS-17791C
Date Tested	03/05/2022	03/05/2022	03/05/2022
Time Tested	14:07	14:15	14:26
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505638	505613	505600
Northing	7041761	7041721	7041705
Elevation (m)	R.L 12.9	R.L 12.6	R.L 12.5
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.14	2.14	2.12
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.14	2.13	2.15
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-3.5	-2.0	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.0**	**100.5**	**99.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-47**
Issue Number: 1
Date Issued: 17/05/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 17804
Date Sampled: 04/05/2022
Dates Tested: 04/05/2022 - 16/05/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17804A	SS-17804B	SS-17804C
Date Tested	04/05/2022	04/05/2022	04/05/2022
Time Tested	13:42	13:51	14:00
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505688	505729	505783
Northing	7041694	7041698	7041684
Elevation (m)	R.L 11.83	R.L 12.14	R.L 12.88
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.98	2.01	2.06
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.03	2.02	2.15
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-2.5	0.5	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.5**	**99.5**	**95.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-48**
Issue Number:	1
Date Issued:	17/05/2022
Client:	Shadforth Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	17829
Date Sampled:	05/05/2022
Dates Tested:	05/05/2022 - 16/05/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-17829A	SS-17829B	SS-17829C
Date Tested	05/05/2022	05/05/2022	05/05/2022
Time Tested	09:12	09:18	09:32
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505631	505639	505642
Northing	7041751	7041788	7041807
Elevation (m)	R.L 12.89	R.L 13.30	R.L 13.40
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.11	2.03	2.13
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.12	2.01	2.13
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.0	-1.5	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.0**	**101.5**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-49**
Issue Number: 1
Date Issued: 27/06/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18065
Date Sampled: 07/06/2022
Dates Tested: 07/06/2022 - 13/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18065A	SS-18065B	SS-18065C
Date Tested	07/06/2022	07/06/2022	07/06/2022
Time Tested	09:29	09:36	09:42
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505876	505870	505821
Northing	7041920	7041949	7041959
Elevation (m)	R.L 11.13	R.L 11.60	R.L 10.91
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.03	2.06	2.04
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.11	2.09	2.03
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	-0.5	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**96.0**	**98.5**	**100.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-50**
Issue Number: 1
Date Issued: 27/06/2022
Client: Shadforth Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18131
Date Sampled: 10/06/2022
Dates Tested: 10/06/2022 - 22/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	SS-18131A	SS-18131B	SS-18131C	SS-18131D	SS-18131E	SS-18131F
Date Tested	10/06/2022	10/06/2022	10/06/2022	10/06/2022	10/06/2022	10/06/2022
Time Tested	08:00	08:12	08:26	08:35	13:41	13:49
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505811	505786	505862	505840	505781	505801
Northing	7041952	7041962	7041948	7041929	7041715	7041711
Elevation (m)	R.L 12.28	R.L 11.90	R.L 11.70	R.L 10.56	R.L 11.1	R.L 11.08
Thickness of Layer (mm)	150	150	150	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Field Wet Density (FWD) t/m^3	1.96	1.97	2.02	2.03	2.02	1.98
Field Dry Density (FDD) t/m^3	**	**	**	**	**	**
Peak Converted Wet Density t/m^3	1.98	2.02	2.08	2.07	2.04	2.01
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	-0.5	-3.5	-1.5	-0.5	0.5	-0.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**98.5**	**97.0**	**97.0**	**98.0**	**99.0**	**98.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: Craig.camm@douglaspartners.com.au

Report Number: **209892.00-51**
Issue Number: 1
Date Issued: 04/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18172
Date Sampled: 13/06/2022
Dates Tested: 13/06/2022 - 24/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
dp-craig.camm
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-18172A	SS-18172B	SS-18172C	SS-18172D
Date Tested	13/06/2022	13/06/2022	13/06/2022	13/06/2022
Time Tested	10:33	10:38	10:44	10:52
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505726	505738	505762	505775
Northing	7041734	7041721	7041726	7041714
Elevation (m)	R.L. 12.1	R.L. 11.79	R.L. 12.0	R.L. 11.73
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.94	1.97	1.95	1.94
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	1.97	2.00	1.98	1.95
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	-0.5	-1.0	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.5**	**98.5**	**98.5**	**99.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: Craig.camm@douglaspartners.com.au

Report Number: **209892.00-52**
Issue Number: 1
Date Issued: 04/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18218
Date Sampled: 14/06/2022
Dates Tested: 14/06/2022 - 24/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
dp-craig.camm
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18218A	SS-18218B	SS-18218C
Date Tested	14/06/2022	14/06/2022	14/06/2022
Time Tested	13:45	13:53	14:00
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505861	505861	505873
Northing	7041931	7041951	7041957
Elevation (m)	R.L. 11.91	R.L. 11.6	R.L. 11.64
Thickness of Layer (mm)	150	150	150
Soil Description	Silty Sandy Clay	Silty Sandy Clay	Silty Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.94	1.93	1.96
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	1.98	1.98	2.00
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.0	-0.5	-2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**98.5**	**97.5**	**98.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: Craig.camm@douglaspartners.com.au

Report Number: **209892.00-53**
Issue Number: 1
Date Issued: 04/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18242
Date Sampled: 15/06/2022
Dates Tested: 15/06/2022 - 25/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
dp-craig.camm
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	SS-18242A	SS-18242B	SS-18242C	SS-18242D
Date Tested	15/06/2022	15/06/2022	15/06/2022	15/06/2022
Time Tested	13:48	13:52	13:55	14:01
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505834	505844	505821	505857
Northing	7041948	7041922	7041924	7041930
Elevation (m)	R.L. 12.1	R.L. 12.0	R.L. 12.7	R.L. 11.9
Thickness of Layer (mm)	150	150	150	150
Soil Description	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay	Sandy Silty Clay
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	2.09	2.06	2.07	2.09
Field Dry Density (FDD) t/m^3	**	**	**	**
Peak Converted Wet Density t/m^3	2.10	2.08	2.07	2.09
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	-0.5	0.0	-0.5	0.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**99.5**	**99.0**	**100.0**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: Craig.camm@douglaspartners.com.au

Report Number: 209892.00-54
Issue Number: 1
Date Issued: 04/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18269
Date Sampled: 16/06/2022
Dates Tested: 16/06/2022 - 21/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
dp-craig.camm
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18269A	SS-18269B	
Date Tested	16/06/2022	16/06/2022	
Time Tested	13:09	13:11	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505792	505785	
Northing	7041946	7041929	
Elevation (m)	R.L. 11.52	R.L. 11.74	
Thickness of Layer (mm)	150	150	
Soil Description	Sandy Silty Clay	Sandy Silty Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.13	2.16	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.12	2.11	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-1.5	-1.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**100.5**	**102.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: Craig.camm@douglaspartners.com.au

Report Number: **209892.00-55**
Issue Number: 1
Date Issued: 04/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18309
Date Sampled: 17/06/2022
Dates Tested: 17/06/2022 - 28/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
dp-craig.camm
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18309A	SS-18309B	
Date Tested	17/06/2022	17/06/2022	
Time Tested	13:02	13:15	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505753	505751	
Northing	7041958	7041940	
Elevation (m)	R.L. 12.1	R.L. 12.2	
Thickness of Layer (mm)	150	150	
Soil Description	Sandy Clay	Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.05	2.11	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.08	2.11	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-2.0	-2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**98.5**	**100.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: Craig.camm@douglaspartners.com.au

Report Number: **209892.00-56**
Issue Number: 1
Date Issued: 04/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18354
Date Sampled: 20/06/2022
Dates Tested: 20/06/2022 - 29/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
dp-craig.camm
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18354A	SS-18354B	
Date Tested	20/06/2022	20/06/2022	
Time Tested	12:49	12:53	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505774	505749	
Northing	7041937	7041941	
Elevation (m)	R.L. 12.2	R.L. 12.1	
Thickness of Layer (mm)	150	150	
Soil Description	Sandy Clay	Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.05	2.06	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.13	2.13	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.0	-0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**96.5**	**96.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: Craig.camm@douglaspartners.com.au

Report Number: **209892.00-57**
Issue Number: 1
Date Issued: 13/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18397
Date Sampled: 21/06/2022
Dates Tested: 21/06/2022 - 04/07/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Imported / Onsite

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
dp-craig.camm
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18397A	SS-18397B	SS-18397C
Date Tested	21/06/2022	21/06/2022	21/06/2022
Time Tested	13:04	13:09	13:13
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505802	505792	505812
Northing	7041951	7041943	7041924
Elevation (m)	R.L. 11.8	R.L. 12.0	R.L. 11.9
Thickness of Layer (mm)	150	150	150
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.14	2.17	2.16
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.08	2.07	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	1.0	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**103.0**	**104.5**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: Craig.camm@douglaspartners.com.au

Report Number: **209892.00-58**
Issue Number: 1
Date Issued: 13/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18432
Date Sampled: 22/06/2022
Dates Tested: 22/06/2022 - 05/07/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Craig Camm
dp-craig.camm
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18432A	SS-18432B	
Date Tested	22/06/2022	22/06/2022	
Time Tested	16:00	16:05	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505760	505763	
Northing	7041935	7041948	
Elevation (m)	R.L. 12.5	R.L. 12.5	
Thickness of Layer (mm)	150	150	
Soil Description	Sandy Clay	Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.01	2.01	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	1.98	1.97	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	1.0	1.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**101.5**	**102.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-59**
Issue Number:	1
Date Issued:	19/07/2022
Client:	Shadforths Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	18467
Date Sampled:	23/06/2022
Dates Tested:	23/06/2022 - 06/07/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18467A	SS-18467B	
Date Tested	23/06/2022	23/06/2022	
Time Tested	16:10	16:19	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505816	505808	
Northing	7041923	7041921	
Elevation (m)	R.L 12.4	R.L 12.4	
Thickness of Layer (mm)	150	150	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.17	2.18	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.17	2.20	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.0	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**100.0**	**99.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-60**
Issue Number:	1
Date Issued:	19/07/2022
Client:	Shadforths Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	18486
Date Sampled:	24/06/2022
Dates Tested:	24/06/2022 - 06/07/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18486A	SS-18486B	
Date Tested	24/06/2022	24/06/2022	
Time Tested	11:15	11:26	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505739	505741	
Northing	7041936	7041950	
Elevation (m)	R.L 12.9	R.L 12.9	
Thickness of Layer (mm)	150	150	
Soil Description	Silty Clay	Silty Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.02	2.04	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.04	2.05	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-2.5	-3.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**99.0**	**99.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number: **209892.00-61**
Issue Number: 1
Date Issued: 19/07/2022
Client: Shadforths Civil Pty Ltd
99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Alex Watson
Project Number: 209892.00
Project Name: Proposed Bulk Earthworks
Project Location: Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request: 18574
Date Sampled: 28/06/2022
Dates Tested: 28/06/2022 - 12/07/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18574A	SS-18574B	SS-18574C
Date Tested	28/06/2022	28/06/2022	28/06/2022
Time Tested	16:03	16:11	16:19
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505651	505660	505679
Northing	7041696	7041682	7041708
Elevation (m)	R.L 11.6	R.L 11.4	R.L 11.6
Thickness of Layer (mm)	150	150	150
Soil Description	Clayey Sand	Clayey Sand	Clayey Sand
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.10	2.11	2.10
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.09	2.11	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	2.5	2.0	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**100.0**	**102.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

Report Number:	**209892.00-62**
Issue Number:	1
Date Issued:	19/07/2022
Client:	Shadforths Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	18604
Date Sampled:	29/06/2022
Dates Tested:	29/06/2022 - 13/07/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18604A	SS-18604B	SS-18604C
Date Tested	29/06/2022	29/06/2022	29/06/2022
Time Tested	16:05	16:09	16:14
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	Bulk Earthworks
Easting	505775	505764	505763
Northing	7041689	7041678	7041697
Elevation (m)	R.L 11.1	R.L 11.2	R.L 11.0
Thickness of Layer (mm)	150	150	150
Soil Description	Sandy Clay	Sandy Clay	Sandy Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	2.06	2.10	2.06
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.05	2.11	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.0	2.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**99.5**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Douglas Partners
Geotechnics / Environment / Groundwater
Douglas Partners Pty Ltd
Sunshine Coast Laboratory
1/28 Kessling Avenue Kunda Park QLD 4556
Phone: (07) 5351 0400
Email: martin.cook@douglaspartners.com.au

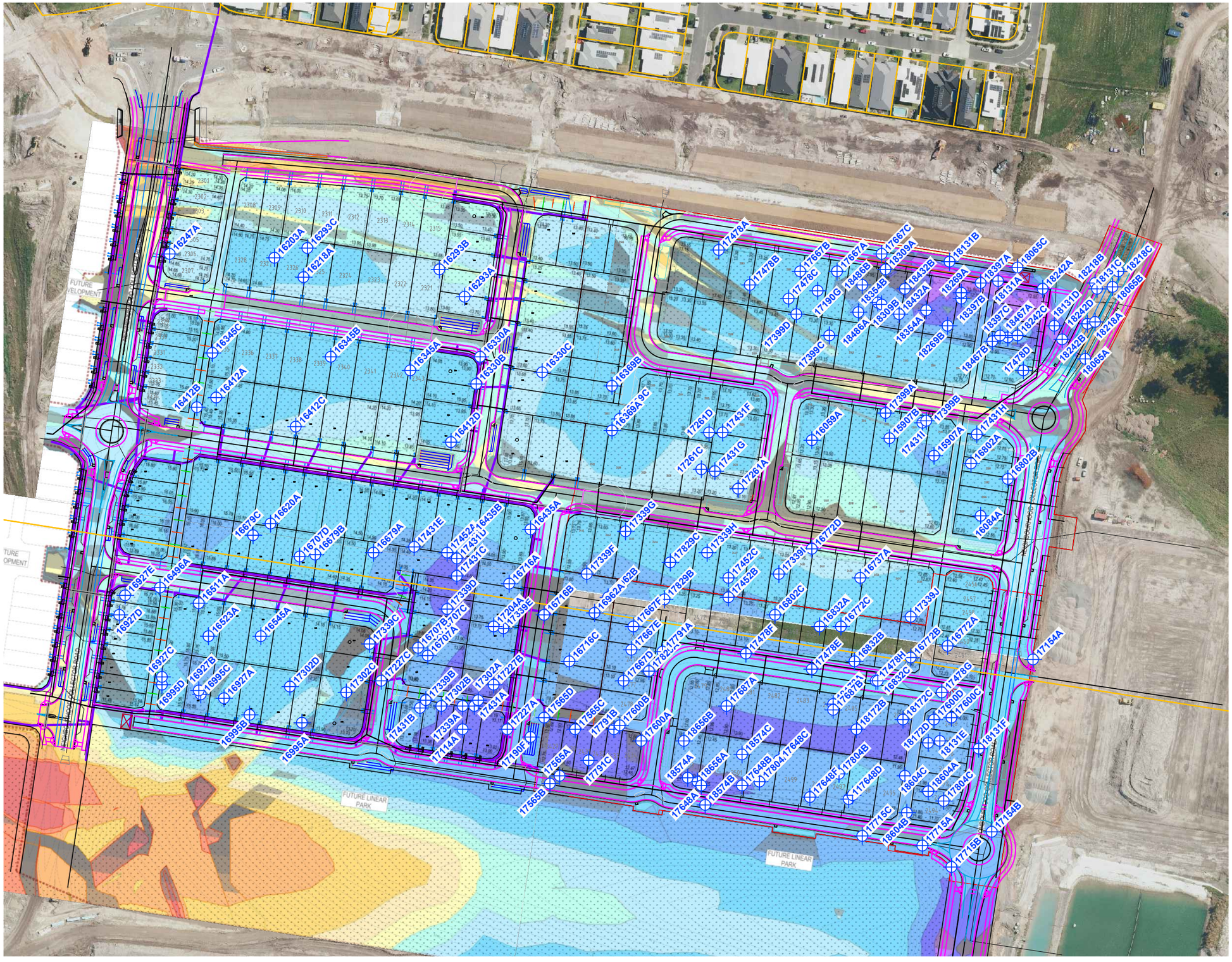
Report Number:	**209892.00-63**
Issue Number:	1
Date Issued:	19/07/2022
Client:	Shadforths Civil Pty Ltd
	99 Sandalwood Lane, Forest Glen QLD 4556
Contact:	Alex Watson
Project Number:	209892.00
Project Name:	Proposed Bulk Earthworks
Project Location:	Phase 4 Bulk Earthworks, Harmony Estate QLD
Work Request:	18656
Date Sampled:	30/06/2022
Dates Tested:	30/06/2022 - 15/07/2022
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	Minimum 95% Standard Hilf Density Ratio
Location:	Bulk Earthworks
Material Source:	Import

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
Assistant Laboratory Manager
Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-18656A	SS-18656B	
Date Tested	30/06/2022	30/06/2022	
Time Tested	16:06	16:20	
Test Request #/Location	Bulk Earthworks	Bulk Earthworks	
Easting	505656	505649	
Northing	7041694	7041715	
Elevation (m)	R.L 11.4	R.L 11.5	
Thickness of Layer (mm)	150	150	
Soil Description	Sandy Clay	Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m^3	2.06	2.03	
Field Dry Density (FDD) t/m^3	**	**	
Peak Converted Wet Density t/m^3	2.02	2.06	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-2.0	-2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**102.0**	**98.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC



Location Plan

N

LEGEND:-

Test Location and Number

NOTE:-

1. Test locations are approximate only and are shown with reference to existing site features.
2. Image obtained from Metromap. Date of imagery 30-09-2022.

Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: Shadforths Civil Pty Ltd		
OFFICE: Sunshine Coast	DRAWN BY: JST	
SCALE: As shown	DATE: November 2022	

TITLE: **Test Location Plan**
Proposed Bulk Earthworks
Phase 4, Harmony Estat

PROJECT No:	209892.00
DRAWING No:	1
REVISION:	0

P:\Sunshine Coast Projects\209892.00\209892.00.D.001.Rev0.dwg