MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN 51 009 878 899
www.morrisongeo.com.au

Brisbane Office
Job No: DL18/096
Ref No: 13748
Author: L. McDowall

10th September 2018

Shadforths Civil Pty Ltd
99 Sandalwood Lane
Forest Glen Qld 4556

ATTENTION: MR DAVID BUDGEN
Email: david.budgen@shadcivil.com.au
Cc: leo.copelin@shadcivil.com.au

Dear Sir,

RE: LEVEL ONE COMPLIANCE REPORT FOR BULK EARTHWORKS FILLING OPERATIONS EVERLEIGH PRECINCT 1.1 TEVIOT ROAD, GREENBANK

Table of Contents

1.0 INTRODUCTION

1.1 General

This report presents results of Level One Earthworks Inspections and associated Compaction Compliance testing carried out on Earthworks Fill constructed to form the following at the Everleigh Precinct 1.1 Development at Greenbank Road, Greenbank (The Site): -

- Residential Lots
- Embankments below Subgrade and

The work was commissioned by Mr. David Budgen representing Shadforths Civil Pty Ltd (The Client), using Purchase Order 2161 - 11002.

Earthworks operations were constructed by Bachmann's Plant Hire Pty Ltd and The Client.

Earthworks filling operations were carried out intermittently between 19th April 2018 and 29th August 2018.

Picture 1: Aerial View of the Site (Image Source: Nearmap.com 17th August 2018).

1.2 Previous Earthworks

Previous earthworks filling was present at The Site. The existing fill was localised and associated with Dam Walls that were located at the North Eastern and Southern portion of The Site.

The dams were dewatered, the dam walls were demolished, and the associated fill was sorted to remove any contaminates and unsuitable materials and then re-used as structural fill.

1.3 The Project

The purpose for filling at The Site is to construct a Residential Subdivision which includes new pavements, residential building platforms, WSUD and associated underground services.

Premise Engineering Pty Ltd, Earthworks Layout Plans, Job Code MIR001-01, Drawing Numbers C202 – C207, Revision F, dated 27th June 2018, indicates the extents and thickness of fill to be constructed at The Site.

This plan is a reasonable representation of the fill covered by this report with the following exceptions:

- Fill was constructed on the following:
  - Lot 1124 to Lot 1137
  - Lot 1244 to Lot 1159
  - Lot 1264 to Lot 1276
  - Lot 1290 to Lot 1294
  - Lot 1315 to Lot 1318

    - Rock was exposed at the design cut levels on these lots.
    - The rock was excavated to a depth of approximately 0.5m below the design earthworks levels and replaced by filling.

- Filling operations were conducted outside the stage boundary in the plan sealing exclusion zone to the North and South of Precinct 1.1. These areas boarder Future Precinct 1.3 to the south and Future precinct 9 to the north.

The actual thickness of fill on an individual Lot can be obtained from the Developer as a Lot Disclosure Plan.

The Site is located within the Everleigh Precinct Subdivision Development and is bounded by future Residential Developments to the North, East, South and West.

2.0 THE BRIEF

The Brief from the Client was limited to:

- Level One Inspection and Testing of the placement and compaction of fill materials in accordance with AS3798 2007 – “Guidelines on Earthworks for Commercial and Residential Developments”,
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.1.
- Logan City Council Project Specifications
- Notes on Premise Earthworks Drawings and Quality Assurance Documentation.
- Recommendations detailed in Morrison Geotechnic Report No. 13382 dated 7th June 2018.

3.0 METHODOLOGY

Earthworks Inspection and Testing was carried out on the stripped and exposed ground surfaces and during the placement and compaction of fill materials.

Field and laboratory testing included a walk over assessments of the existing ground conditions, observation of filling and compaction activities and field density testing using a nuclear soil moisture density gauge and Hilf compactions. All work was carried out in accordance with AS 3798 (Guidelines on Earthworks for Commercial and Residential Developments) and AS1289 (Testing of Soils for Engineering Purposes).

3.1 Stripped Surface Assessment

The fill areas at The Site were observed to be stripped and cleared of visible organic matter, deleterious, loose and unsuitable materials to depths exposing suitable natural ground. Existing dams were dewatered, and sediments and water affected soils were removed to depths exposing competent natural soils

Materials exposed after stripping and clearing the site which formed the fill foundation can be broadly summarised as:

- Natural - Silty Sand (SM) – At least dense, fine to medium grained sands, traces of low plasticity clay, grey – brown and moist.
- Natural – Sandy Clay (CI) – Very stiff, medium plasticity, fine to medium grained sand, pale brown mottled orange and moist.
- Natural – Sandstone Rock (XW-DW) – Extremely weathered to distinctly weathered, medium strength, orange – yellow mottled brown – grey.

Following the stripped surface assessment of the fill areas, the fill foundation was approved for filling using the following process:

- Walk over assessments confirming that the competent ground was exposed.
- Proof roll testing using large sized truck carrying out multiple passes confirming no movement of the exposed natural foundation.

Picture 2: View of the Stripped Surface Prior to Filling Operations

Picture 3: View of the Stripped Surface Prior to Filling Operations

3.2 Filling Operations

Fill materials were sourced from onsite cuts, road box excavations, trench excavations and borrow areas to the North of The Site.

Materials used as fill can be broadly summarized as: -

- Clayey Sand (SC), fine to coarse sand, medium plasticity fines, with fine to course gravel, yellow brown and moist.
- Gravelly Sandy Clay (CI), medium plasticity fines, fine to coarse sand, fine to course gravel, yellow - brown and moist.

Placement and compaction of the fill materials was carried out using the following plant:

- D6, D8, D10 and D11 Dozers
- Articulated Water Trucks
- Graders
- Excavators
- Body Trucks
- Articulated Dump Trucks
- Pad foot Rollers
- Skid Steer Loader
- 825 and 815 Compactors
- Scrapers

The fill materials were moisture conditioned at the fill source and during placement to moisture contents suitable for compaction. Deleterious materials such as organics, sticks, roots and over size particles were sorted and removed during placement or were rejected for use. Occasional oversize particles

including cobbles and boulders may be present in the deeper fill profile, however are not considered to affect the fill as a mass.

Placement of the fill materials was carried out in layers appropriate for the above plant and compacted using the above plant carrying out multiple passes.

Our representative observed the filling process as described above and was assessed to be consistent for the entire thickness of fill.

Field density tests and laboratory compactions were carried out on the fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 (Guidelines on Earthworks for Commercial and Residential Developments) and tested to AS1289 test methods (Testing of Soils for Engineering Purposes).

Testing achieved the required specification of 95% of the Hilf Density for fill supporting pavements and residential lots. .

Fill was required to be placed at moisture contents within the tolerance of -2% to +3% of the Optimum Moisture Content.

Due to construction complexities, a delay between placement of the fill and testing of the fill occurred. This resulted in some loss of moisture from the surficial layer of the fill due to natural drying processes. Based on the visual and tactile assessments of the fill material by the Morrison Geotechnic site representative at the time of placement, the fill was placed at moisture contents within the Moisture Content specification criteria.

Fill placed and compacted at measured density ratios less than 95% were tyned, moisture conditioned and re-compacted until the required specification was achieved. Retesting was carried out using Random Stratified Location methods.

The Location of the field density tests are shown on the Site Plan contained in Appendix A. These test locations and levels were not obtained by survey and therefore should only be considered as approximate.

Picture 4: View of the Site During Construction

Picture 5: View of the Site During Construction

Picture 6: View of the Site During Construction

4.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations including the stripped surface, fill placement and compaction operations and carried out field density tests and laboratory compaction tests in accordance with the required standard (AS3798, AS1289) and Specification. Testing achieved the required specification of 95% Standard at the test locations.

It is confirmed that Level One Inspection and Testing has been carried out on the earthworks fill to form the residential Lots and embankments below subgrade. Based on the observations made by our Geotechnicians and the results of the field and laboratory tests, the placed and compacted fill at the above project has, as far as we have been able to assess, been constructed in general accordance with the intent of AS3798 and the Specifications.

The fill can be deemed to be "controlled" in accordance with AS2870.

5.0 EXCLUSIONS

This statement does not include any top soil, which may be placed for use as dressing, trench backfill or any other subsequent earthworks after 29th August 2018.

Material placed in the Park Area of Precinct 1.1 was not placed under Level One Conditions as detailed in AS3798 and is excluded from this report.

Assessments of material quality such as soaked CBR and site classifications are excluded from this commission.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 – 2007.

Footings and ground slabs for any structures constructed over natural soils or controlled fill should be designed to accommodate the characteristic ground surface movements and settlement potential.

Assessments of these design parameters are beyond the scope of this Report.

6.0 LIMITATIONS

This Report has been prepared by Morrison Geotechnic Pty Ltd (**Morrison Geotechnic**), and may include contributions from Morrison Geotechnic's officers and employees, sub-contractors, sub-consultants or agents (**Contributors**).

This Report is for the sole benefit and use of Shadforths Civil Pty Ltd (**Client**), its designers, clients and relevant statutory authorities for the sole purpose of providing geotechnical advice and recommendations in respect of the Everleigh Precinct 1.1 Subdivision Development, Teviot Road, Greenbank **(Project)**. The Report is only intended to address those issues expressly described in the Brief/ Work Instructions in this Report.

This Report should not be used or relied upon for any other purpose without Morrison Geotechnic's prior written consent. Morrison Geotechnic and the Contributors do not accept any responsibility or liability in any way whatsoever for the use or reliance of this Report by anyone other than CCA Winslow (**Client)**, its designers, its clients and relevant statutory authorities or by anyone else for any purpose other than that for which it has been prepared.

Except with Morrison Geotechnic's prior written consent, this Report may not be:

(a) released to any other party, whether in whole or in part (other than to the Client's officers, employees, advisers, designers, clients and relevant statutory authorities);

(b) used or relied upon by any other party.

Morrison Geotechnic and the Contributors, do not accept any liability or responsibility whatsoever for, or in respect of, any use or reliance upon this Report by any other party. Morrison Geotechnic is not obliged to enter into discussions with any third party in respect of this Report.

The information (including technical information and information obtained through discussions) on which this report is based has been provided by the Client and third parties. Morrison Geotechnic and the Contributors:

(a) have relied upon and presumed the accuracy of this information;

(b) have not verified the accuracy or reliability of this information (other than as expressly stated in this Report);

(c) have not made any independent investigations or enquiries in respect of those matters of which it has no actual knowledge at the time of giving this Report to the Client; and

(d) make no warranty or guarantee, expressed or implied, as to the accuracy or reliability of this information.

Morrison Geotechnic and the Contributors do not accept responsibility or liability for any incorrect assumptions related to this Report. For the avoidance of doubt, this Report:

(a) is not an environmental, contamination or hazardous materials assessment; may be invalid, incomplete or inaccurate (including errors in the scope of work, investigation methodology, observations, opinions and advice) where the information provided to Morrison Geotechnic was invalid, incomplete or inaccurate;

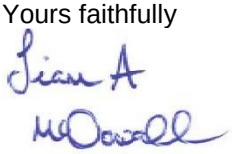
(b) is limited to observations of those parts of the site described in Section 1.0.

No warranty or guarantee, whether express or implied, is made in respect of the geotechnical data, information, advice, opinions and recommendations present in this Report.

If further information becomes available, or additional assumptions need to be made, Morrison Geotechnic reserves its right to amend this Report.

If you have any queries regarding the above, please contact our Brisbane office.

Yours faithfully



LIAM McDOWALL

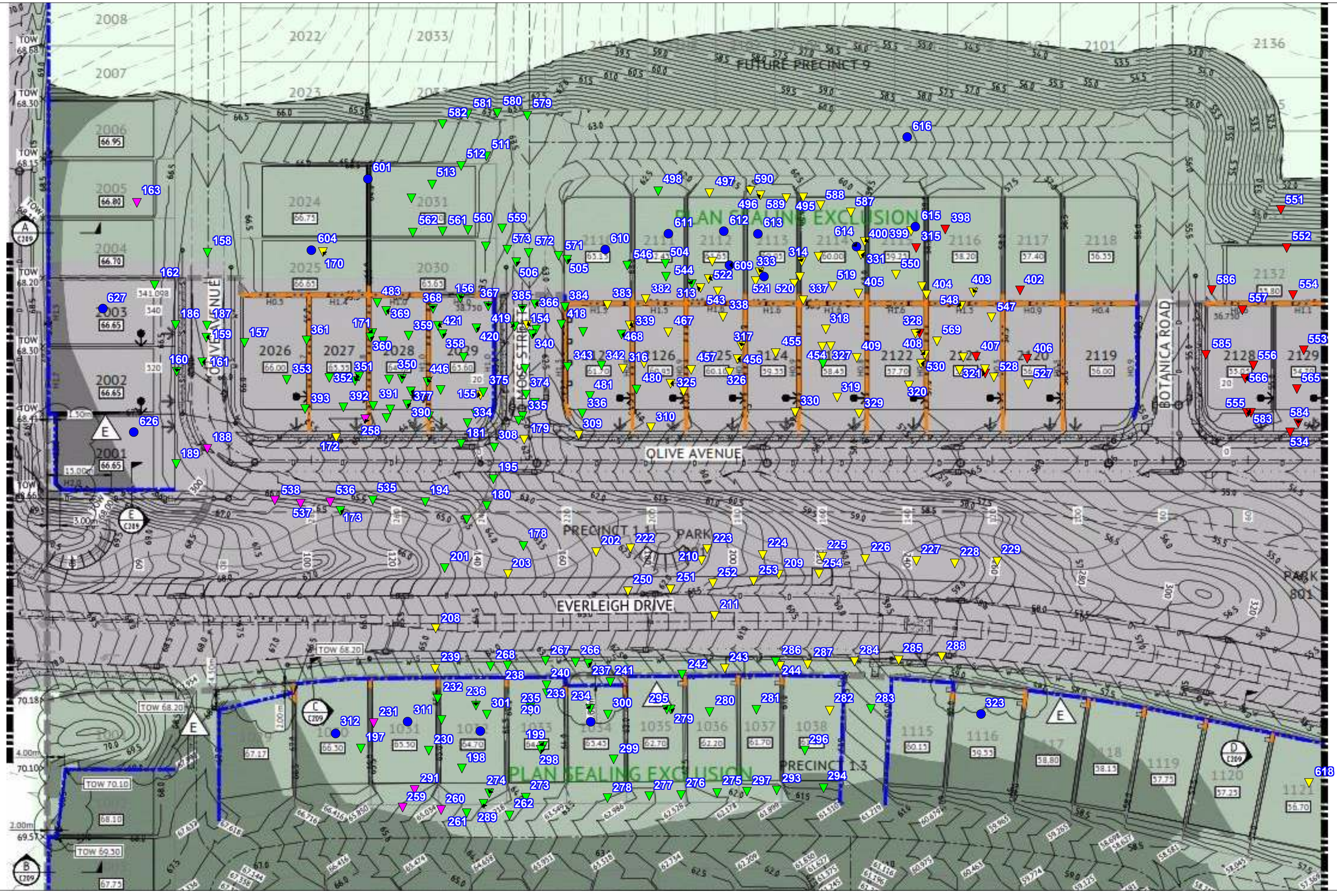
For and on behalf of
MORRISON GEOTECHNIC PTY LIMITED

ATTACHMENTS:
Appendix A – Site Plans Showing Test Locations
Appendix B – Laboratory Test Results Reports
Brochure – “Important Information About Your Geotechnical Report”

APPENDIX A

Site Plan

Test Locations



MORRISON GEOTECHNIC PTY LTD

ABN: 51 009 878 899

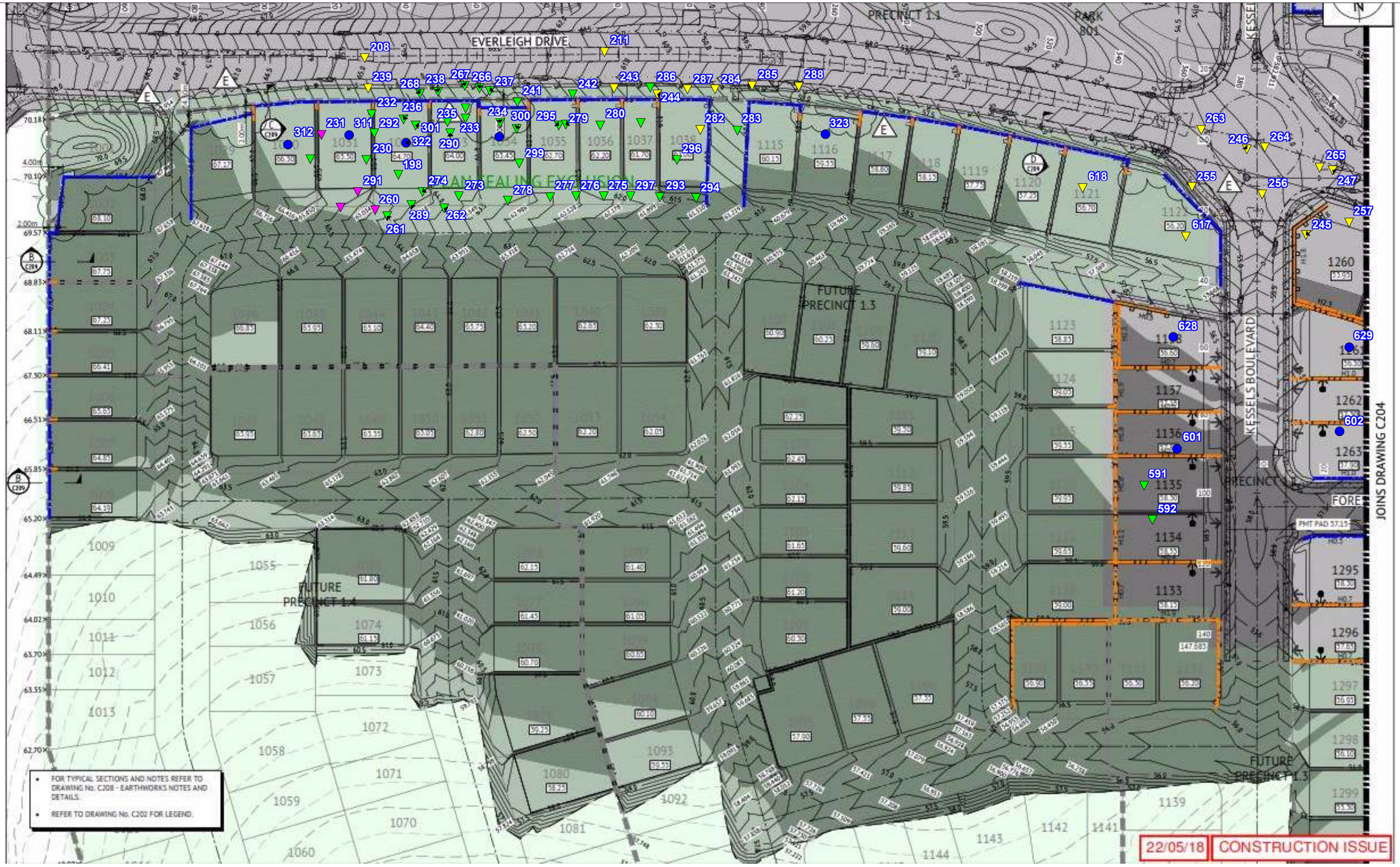
Unit 1/ 35 Limestone St, Darra 4076
Email: brisbanelab@morrisongeo.com.au
Ph: 3279 0900
Fax: 3279 0955

Engineers: D.Riley, J. Daly
D.Dragun, & S.Wynne
Geologists: L.Bexley & R.Howchin
Laboratory: M.Morrison

LEGEND

- RL 50.00 - 54.99
- RL 55.00 - 59.99
- RL 60.00 - 64.99
- RL 65.00 - 69.99
- RL 70.00 - 74.99
- Final Level

Map Description :	**EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection**				
Client :	SHADFORTHS CIVIL				
Project :	**EVERLEIGH 1.1 (SHEET 1)**				
Project No :	DL18/096	Drawing No :	DL18/096-01	Scale :	Not to Scale



MORRISON GEOTECHNIC PTY LTD

ABN: 51 009 878 899

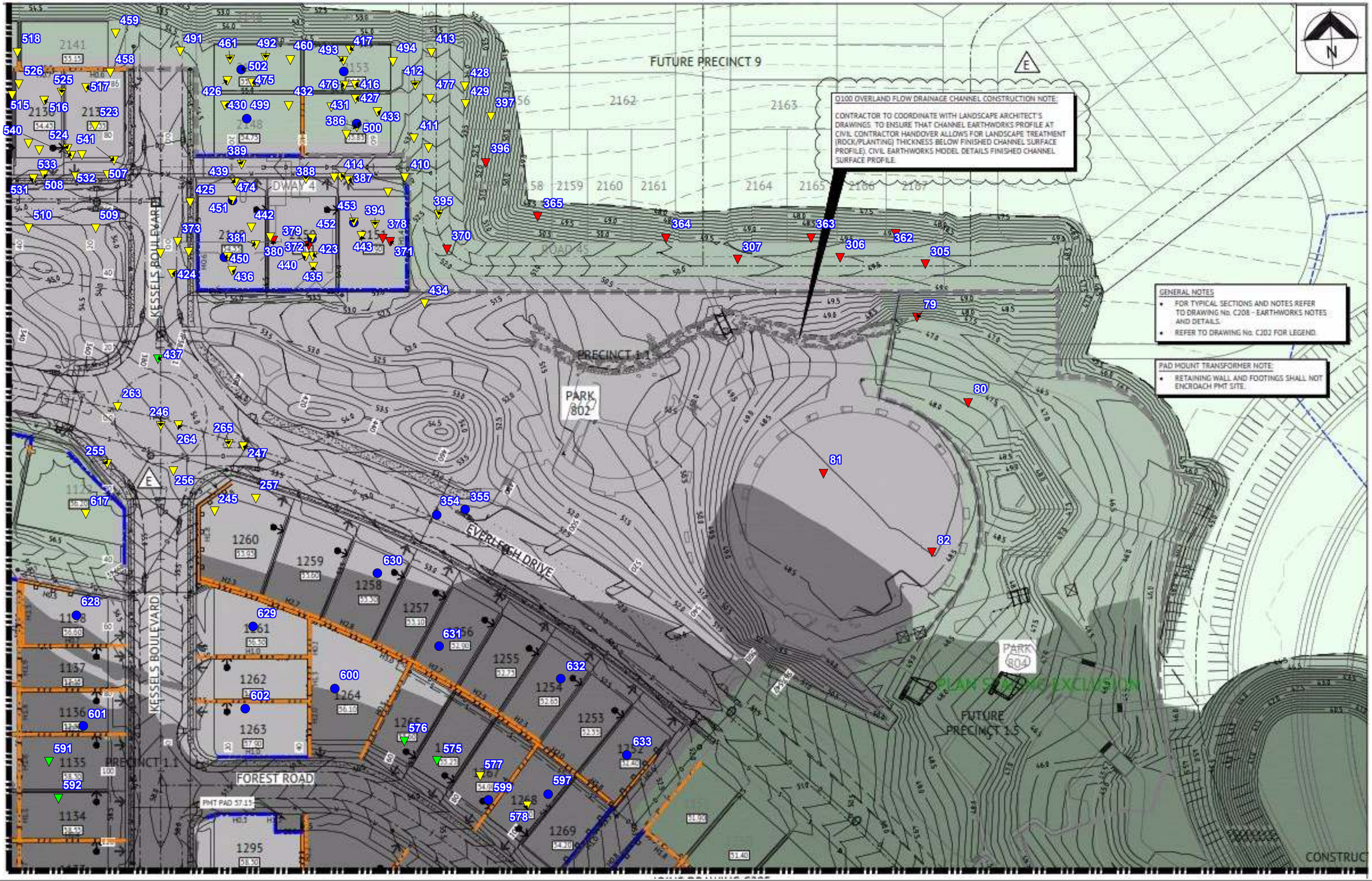
Unit 1/ 35 Limestone St, Darra 4076 *Ph: 3279 0900*
Email: brisbanelab@morrisongeo.com.au *Fax: 3279 0955*

Engineers: D.Riley, J. Daly D.Dragun, & S.Wynne
Geologists: L.Bexley & R.Howchin
Laboratory: M.Morrison

LEGEND

- RL 45.00 - 49.99
- RL 50.00 - 54.99
- RL 55.00 - 59.99
- RL 60.00 - 64.99
- RL 65.00 - 69.99
- Final Level

Map Description :	**EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection**				
Client :	SHADFORTHS CIVIL				
Project :	**EVERLEIGH 1.1 (SHEET 2)**				
Project No :	DL18/096	Drawing No :	DL18/096 - 02	Scale :	Not to Scale



MORRISON GEOTECHNIC PTY LTD

ABN: 51 009 878 899

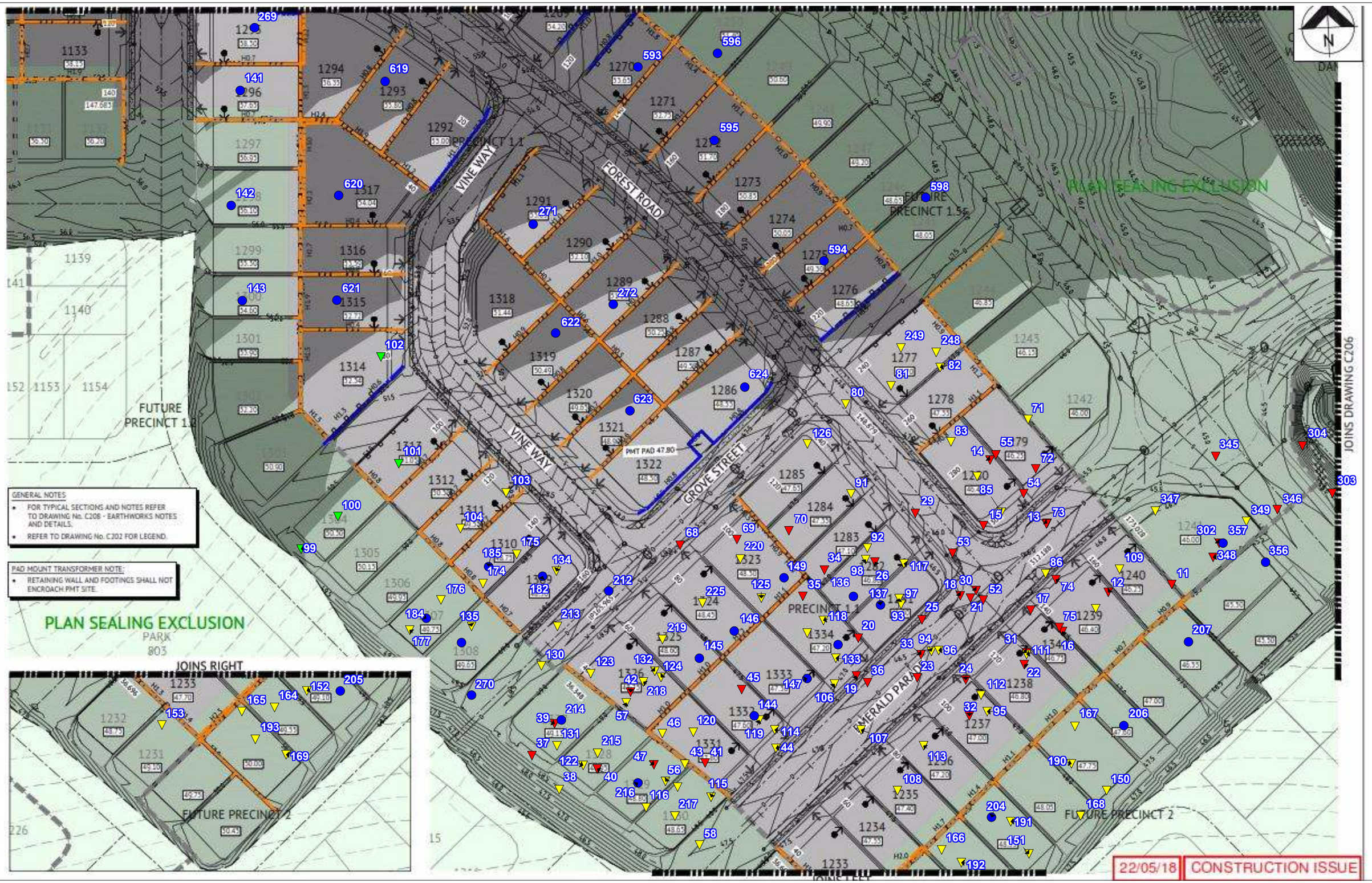
Unit 1/ 35 Limestone St, Darra 4076 *Ph: 3279 0900*
Email: brisbanelab@morrisongeo.com.au *Fax: 3279 0955*

Engineers: D.Riley, J. Daly
D.Dragun, & S.Wynne
Geologists: L.Bexley & R.Howchin
Laboratory: M.Morrison

LEGEND

- RL 45.00 - 49.99
- RL 50.00 - 54.99
- RL 55.00 - 59.99
- RL 60.00 - 64.99
- RL 65.00 - 69.99
- Final Level

Map Description :	**EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection**				
Client :	SHADFORTHS CIVIL				
Project :	**EVERLEIGH 1.1 (SHEET 3)**				
Project No :	DL18/096	Drawing No :	DL18/096 - 03	Scale :	Not to Scale



MORRISON GEOTECHNIC PTY LTD
ABN: 51 009 878 899

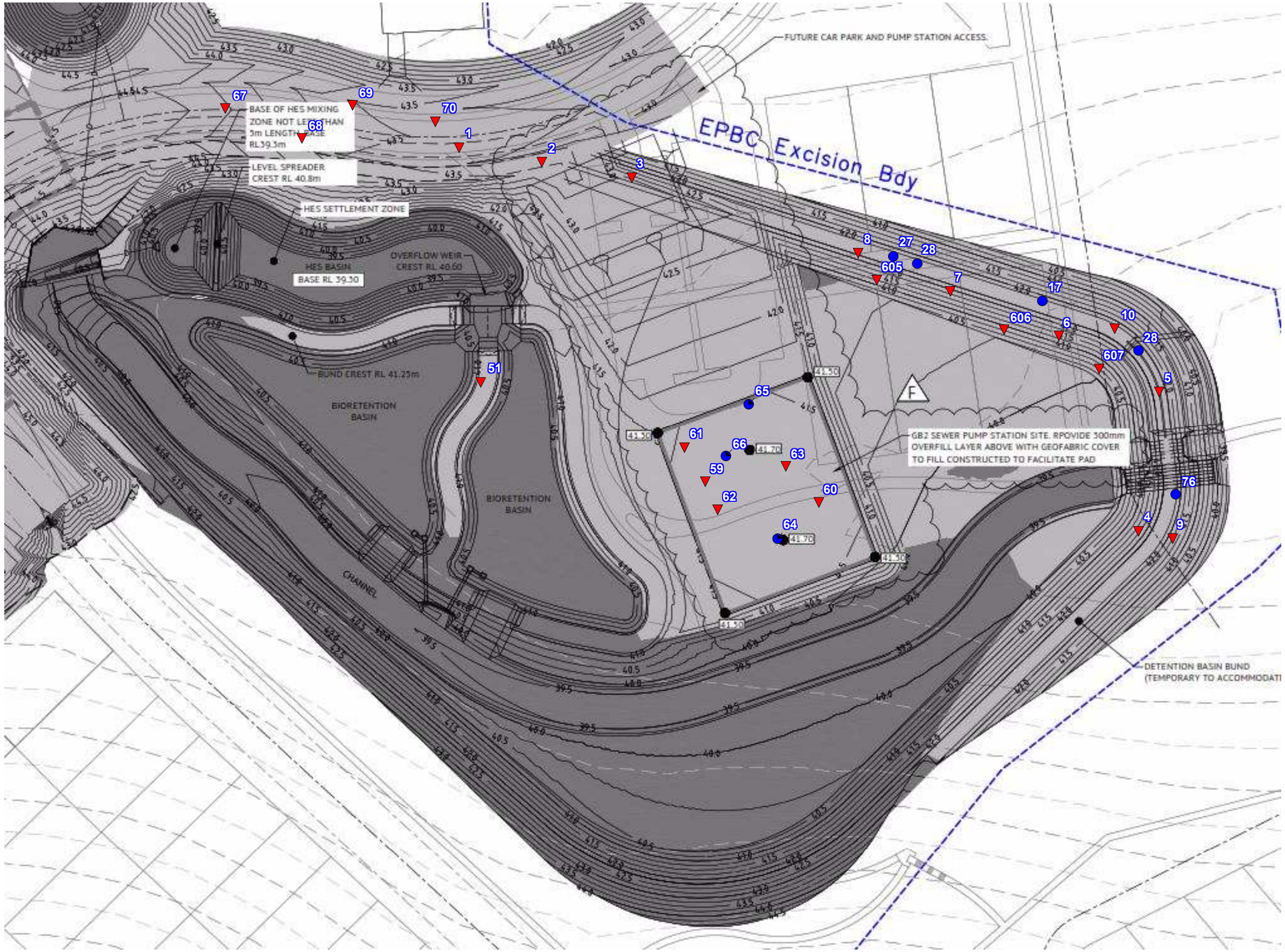
Unit 1/ 35 Limestone St, Darra 4076 *Ph: 3279 0900*
Email: brisbanelab@morrisongeo.com.au *Fax: 3279 0955*

Engineers: D.Riley, J. Daly
D.Dragun, & S.Wynne
Geologists: L.Bexley & R.Howchin
Laboratory: M.Morrison

LEGEND

- RL 40.00 - 44.99
- RL 45.00 - 49.99
- RL 50.00 - 54.99
- RL 55.00 - 59.99
- RL 60.00 - 64.99
- Final Level

Map Description :	**EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection**				
Client :	SHADFORTHS CIVIL				
Project :	**EVERLEIGH 1.1**				
Project No :	DL18/096	Drawing No :	DL18/096 - 04	Scale :	Not to Scale



MORRISON GEOTECHNIC PTY LTD
ABN: 51 009 878 899

Unit 1/ 35 Limestone St, Darra 4076 *Ph: 3279 0900*
Email: brisbanelab@morrisongeo.com.au *Fax: 3279 0955*

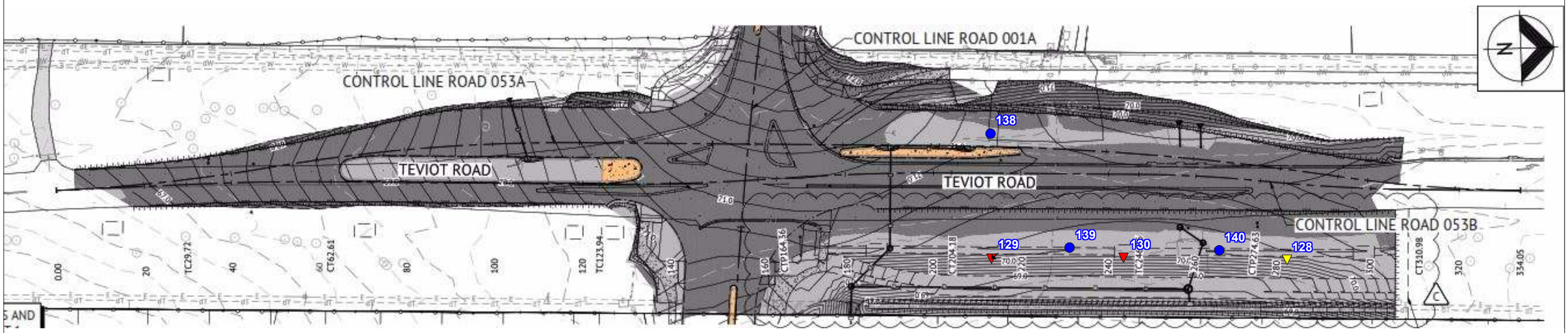
Engineers: D.Riley, J. Daly
D.Dragun, & S.Wynne
Geologists: L.Bexley & R.Howchin
Laboratory: M.Morrison

LEGEND

▼ RL 40.00 - 44.99

● Final Level

Map Description :	**EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection**				
Client :	SHADFORTHS CIVIL PTY LTD				
Project :	**EVERLEIGH 1.1**				
Project No :	DL18-096	Drawing No :	DL18-096-05	Scale :	Not to Scale



MORRISON GEOTECHNIC PTY LTD

ABN: 51 009 878 899

Unit 1/ 35 Limestone St, Darra 4076 *Ph: 3279 0900*
Email: brisbanelab@morrisongeo.com.au *Fax: 3279 0955*

Engineers: D.Riley, J. Daly
D.Dragun, & S.Wynne
Geologists: L.Bexley & R.Howchin
Laboratory: M.Morrison

LEGEND

- RL 65.00 - 69.99
- RL 70.00 - 74.99
- Final Level

Map Description :	**EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection**				
Client :	SHADFORTHS CIVIL PTY LTD				
Project :	**EVERLEIGH 1.1**				
Project No :	DL18/096	Drawing No :	DL18/096-06	Scale :	Not to Scale

APPENDIX B

Test Certificates

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 1**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**04/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	244361	244362	244363	
Test Number :	1	2	3	
Sampling Method :	-	-	-	
Date Sampled :	26/04/2018	26/04/2018	26/04/2018	
Date Tested :	26/04/2018	26/04/2018	26/04/2018	
Material Type :	**General Fill**	**General Fill**	**General Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	-	-	-	
Sample Location :	E 9276 N 31463 RL 41.200	E 9294 N 31460 RL 41.300	E 9311 N 31458 RL 41.350	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	-	-	
Field Moisture Content (%) :	12.2	13.1	12.3	
Hilf MDR Number :	244361	244362	244363	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	91	102	97.5	
Field Wet Density (t/m³) :	2.089	2.050	2.085	
Optimum Moisture Content (%) :	13.4	12.8	12.6	
Moisture Variation :	1.2	-0.2	0.3	
Peak Converted Wet Density (t/m³) :	2.099	2.089	2.113	
Hilf Density Ratio (%) :	**99.5**	**98.0**	**98.5**	
Minimum Specification :	98	98	98	
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	
Site Selection :	-	-	-	
Soil Description :	-	-	-	
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 2**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245171	245172	245173	245174
Test Number :	4	5	6	7
Sampling Method :	-	-	-	-
Date Sampled :	12/05/2018	12/05/2018	12/05/2018	12/05/2018
Date Tested :	12/05/2018	12/05/2018	12/05/2018	12/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9416.6 N 31372.3 RL 40.400 1m Below Final Level	E 9422.4 N 31402.9 RL 40.500 1.5m Below Final Level	E 9405.10 N 31416.0 RL 40.700 0.8m Below Final Level	E 9378.9 N 31427.7 RL 41.00 0.7m Below Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.8	12.7	15.5	17.4
Hilf MDR Number :	245171	245172	245173	245174
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99.5	99	103.5	110.5
Field Wet Density (t/m³) :	2.184	2.147	2.069	2.079
Optimum Moisture Content (%) :	13.9	12.8	15.0	15.8
Moisture Variation :	0.1	0.1	-0.5	-1.6
Peak Converted Wet Density (t/m³) :	2.132	2.195	2.138	2.140
Hilf Density Ratio (%) :	**102.5**	**98.0**	**97.0**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 3**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245175			
Test Number :	8			
Sampling Method :	-			
Date Sampled :	12/05/2018			
Date Tested :	12/05/2018			
Material Type :	**General Fill**			
Material Source :	**On Site**			
Lot Number :	-			
Sample Location :	E 9358.9 N 31436.3 RL 41.300 0.7m Below Final Level			
Test Depth (mm) :	150			
Layer Depth (mm) :	-			
Maximum Size (mm) :	19			
Oversize Wet (%) :	-			
Oversize Dry (%) :	-			
Oversize Density (t/m³) :	-			
Field Moisture Content (%) :	14.3			
Hilf MDR Number :	245175			
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1 & 5.7.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	97.5			
Field Wet Density (t/m³) :	2.097			
Optimum Moisture Content (%) :	14.6			
Moisture Variation :	0.3			
Peak Converted Wet Density (t/m³) :	2.147			
Hilf Density Ratio (%) :	**97.5**			
Minimum Specification :	95			
Moisture Specification :	-2% to +3%			
Site Selection :	-			
Soil Description :	-			
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 4**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245299	245300		
Test Number :	9	10		
Sampling Method :	-	-		
Date Sampled :	14/05/2018	14/05/2018		
Date Tested :	14/05/2018	14/05/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 9422.4 N 31371.7 RL 41.100 1m Below Final Level	E 9413.8 N 31415.7 RL 41.400 0.7m Below Final Level		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	15.1	11.8		
Hilf MDR Number :	245299	245300		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	99	102.5		
Field Wet Density (t/m³) :	2.066	2.058		
Optimum Moisture Content (%) :	15.3	11.5		
Moisture Variation :	0.2	-0.3		
Peak Converted Wet Density (t/m³) :	2.138	2.152		
Hilf Density Ratio (%) :	**96.5**	**95.5**		
Minimum Specification :	95	95		
Moisture Specification :	-	-		
Site Selection :	-	-		
Soil Description :	-	-		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 5**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245406	245407	245408	245409
Test Number :	11	12	13	14
Sampling Method :	-	-	-	-
Date Sampled :	15/05/2018	15/05/2018	15/05/2018	15/05/2018
Date Tested :	15/05/2018	15/05/2018	15/05/2018	15/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9130.800 N 31385.700 RL 43.100	E 9112.500 N 31384.200 RL 43.500	E 9095.800 N 31404.800 RL 43.700	E 9080.200 N 31423.700 RL 44.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	8.2	11.5	6.8	7.2
Hilf MDR Number :	245406	245407	245408	245409
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	83	89	81	81
Field Wet Density (t/m³) :	1.973	2.029	2.054	2.110
Optimum Moisture Content (%) :	9.9	13.0	8.4	8.9
Moisture Variation :	1.8	1.5	1.7	1.8
Peak Converted Wet Density (t/m³) :	2.058	2.091	2.082	2.076
Hilf Density Ratio (%) :	**96.0**	**97.0**	**98.5**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 6**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245410	245411	245412	245413
Test Number :	15	16	17	18
Sampling Method :	-	-	-	-
Date Sampled :	15/05/2018	15/05/2018	15/05/2018	15/05/2018
Date Tested :	15/05/2018	15/05/2018	15/05/2018	15/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9077.500 N 31404.900 RL 44.000	E 9098.900 N 31373.500 RL 43.800	E 9090.000 N 31380.000 RL 43.500	E 9070.000 N 31385.000 RL 43.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.7	11.6	12.9	14.1
Hilf MDR Number :	245410	245411	245412	245413
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99	94	100	100
Field Wet Density (t/m³) :	2.090	2.029	2.050	2.060
Optimum Moisture Content (%) :	13.8	12.3	12.9	14.1
Moisture Variation :	0.1	0.7	0.0	0.0
Peak Converted Wet Density (t/m³) :	2.124	2.115	2.146	2.103
Hilf Density Ratio (%) :	**98.5**	**96.0**	**95.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 7**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245501	245502	245503	245504
Test Number :	19	20	21	22
Sampling Method :	-	-	-	-
Date Sampled :	16/05/2018	16/05/2018	16/05/2018	16/05/2018
Date Tested :	16/05/2018	16/05/2018	16/05/2018	16/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9039.200 N 31363.200 RL 43.800 3m Below Final Level	E 9039.900 N 31373.600 RL 43.600 3.5m Below Final Level	E 9072.900 N 31384.200 RL 43.500 2.6m Below Final Level	E 9087.500 N 31364.400 RL 43.700 3m Below Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.6	10.3	12.5	13.5
Hilf MDR Number :	245501	245502	245503	245504
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99	100	96.5	102
Field Wet Density (t/m³) :	2.092	2.079	2.109	2.090
Optimum Moisture Content (%) :	10.7	10.3	12.9	13.2
Moisture Variation :	0.1	0.0	0.5	-0.2
Peak Converted Wet Density (t/m³) :	2.164	2.162	2.096	2.164
Hilf Density Ratio (%) :	**96.5**	**96.0**	**100.5**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 8**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245505	245506	245507	245508
Test Number :	23	24	25	26
Sampling Method :	-	-	-	-
Date Sampled :	16/05/2018	16/05/2018	16/05/2018	16/05/2018
Date Tested :	16/05/2018	16/05/2018	16/05/2018	16/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9056.600 N 31361.900 RL 44.000 2.4m Below Final Level	E 9070.500 N 31360.700 RL 43.900 2.8m Below Final Level	E 9058.700 N 31378.500 RL 43.700 2.7m Below Final Level	E 9045.900 N 31395.700 RL 43.800 2.9m Below Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.3	11.0	13.4	12.2
Hilf MDR Number :	245505	245506	245507	245508
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85	87	98.5	99.5
Field Wet Density (t/m³) :	2.085	2.105	2.051	2.078
Optimum Moisture Content (%) :	11.0	12.6	13.6	12.3
Moisture Variation :	1.7	1.7	0.2	0.1
Peak Converted Wet Density (t/m³) :	2.063	2.070	2.125	2.177
Hilf Density Ratio (%) :	**101.0**	**101.5**	**96.5**	**95.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 9**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245509	245510		
Test Number :	27	28		
Sampling Method :	-	-		
Date Sampled :	16/05/2018	16/05/2018		
Date Tested :	16/05/2018	16/05/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Detention Basin Bund Wall Chainage 60 Centreline of Bund Wall Final Level	Detention Basin Bund Wall Chainage 120 Centreline of Bund Wall Final Level		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	12.1	10.7		
Hilf MDR Number :	245509	245510		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	98	96.5		
Field Wet Density (t/m³) :	2.079	2.050		
Optimum Moisture Content (%) :	12.4	11.1		
Moisture Variation :	0.2	0.3		
Peak Converted Wet Density (t/m³) :	2.153	2.148		
Hilf Density Ratio (%) :	**96.5**	**95.5**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 16**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245807	245808	245809	245810
Test Number :	48	49	50	51
Sampling Method :	-	-	-	-
Date Sampled :	21/05/2018	21/05/2018	21/05/2018	21/05/2018
Date Tested :	21/05/2018	21/05/2018	21/05/2018	21/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	WSUD Area E 9307.300 N 31374.400 RL 41.100	WSUD Area E 9346.700 N 31399.100 RL 40.200	WSUD Area E 9345.000 N 31415.000 RL 40.500	WSUD Area E 9276.700 N 31412.900 RL 40.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.3	11.7	11.5	13.9
Hilf MDR Number :	245807	245808	245809	245810
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100	97.5	96	100
Field Wet Density (t/m³) :	2.055	2.068	2.058	2.080
Optimum Moisture Content (%) :	13.3	12.0	12.0	13.9
Moisture Variation :	0.0	0.2	0.5	0.0
Peak Converted Wet Density (t/m³) :	2.143	2.157	2.129	2.146
Hilf Density Ratio (%) :	**96.0**	**96.0**	**96.5**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND/Sandy CLAY	Clayey SAND/Sandy CLAY	Clayey SAND/Sandy CLAY	Clayey SAND/Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 10**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245613	245614	245615	245616
Test Number :	29	30	31	32
Sampling Method :	-	-	-	-
Date Sampled :	17/05/2018	17/05/2018	17/05/2018	17/05/2018
Date Tested :	17/05/2018	17/05/2018	17/05/2018	17/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9058.100 N 31409.200 RL 44.600	E 9074.600 N 31386.300 RL 44.200	E 9088.300 N 31367.800 RL 44.100	E 9071.100 N 31350.300 RL 44.700
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	19.3	12.1	15.2	15.4
Hilf MDR Number :	245613	245614	245615	245616
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	106.5	98	99	98.5
Field Wet Density (t/m³) :	2.031	2.064	2.054	2.111
Optimum Moisture Content (%) :	18.1	12.3	15.3	15.6
Moisture Variation :	-1.2	0.2	0.1	0.2
Peak Converted Wet Density (t/m³) :	2.098	2.154	2.148	2.145
Hilf Density Ratio (%) :	**97.0**	**96.0**	**95.5**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 11**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245617	245618	245619	245620
Test Number :	33	34	35	36
Sampling Method :	-	-	-	-
Date Sampled :	17/05/2018	17/05/2018	17/05/2018	17/05/2018
Date Tested :	17/05/2018	17/05/2018	17/05/2018	17/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9058.000 N 31368.500 RL 44.600	E 9031.300 N 31394.600 RL 44.800	E 9024.800 N 31386.700 RL 44.500	E 9042.300 N 31361.100 RL 44.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	14.3	12.9	15.3	11.4
Hilf MDR Number :	245617	245618	245619	245620
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	99	99.5	87
Field Wet Density (t/m³) :	2.084	2.080	2.100	2.063
Optimum Moisture Content (%) :	14.6	13.0	15.4	13.1
Moisture Variation :	0.3	0.1	0.1	1.8
Peak Converted Wet Density (t/m³) :	2.133	2.131	2.117	2.137
Hilf Density Ratio (%) :	**97.5**	**97.5**	**99.0**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 12**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245695	245696	245697	245698
Test Number :	37	38	39	40
Sampling Method :	-	-	-	-
Date Sampled :	18/05/2018	18/05/2018	18/05/2018	18/05/2018
Date Tested :	18/05/2018	18/05/2018	18/05/2018	18/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8945.100 N 31344.100 RL 44.900	E 8952.500 N 31334.000 RL 45.000	E 8952.000 N 31353.000 RL 44.800	E 8963.700 N 31339.500 RL 44.700
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.6	12.0	10.3	11.6
Hilf MDR Number :	245695	245696	245697	245698
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	82.5	96	88	97.5
Field Wet Density (t/m³) :	2.069	2.088	2.109	2.105
Optimum Moisture Content (%) :	11.6	12.5	11.7	11.9
Moisture Variation :	2.0	0.6	1.5	0.3
Peak Converted Wet Density (t/m³) :	2.088	2.126	2.117	2.133
Hilf Density Ratio (%) :	**99.0**	**98.0**	**99.5**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY/Clayey SAND	Sandy CLAY/Clayey SAND	Sandy CLAY/Clayey SAND	Sandy CLAY/Clayey SAND
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 13**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245699			
Test Number :	41			
Sampling Method :	-			
Date Sampled :	18/05/2018			
Date Tested :	18/05/2018			
Material Type :	**General Fill**			
Material Source :	**On Site**			
Lot Number :	-			
Sample Location :	E 8994.746 N 31339.900 RL 44.800			
Test Depth (mm) :	150			
Layer Depth (mm) :	-			
Maximum Size (mm) :	19			
Oversize Wet (%) :	-			
Oversize Dry (%) :	-			
Oversize Density (t/m³) :	-			
Field Moisture Content (%) :	10.6			
Hilf MDR Number :	245699			
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1 & 5.7.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	90			
Field Wet Density (t/m³) :	2.108			
Optimum Moisture Content (%) :	11.8			
Moisture Variation :	1.2			
Peak Converted Wet Density (t/m³) :	2.122			
Hilf Density Ratio (%) :	**99.5**			
Minimum Specification :	95			
Moisture Specification :	-2% to +3%			
Site Selection :	-			
Soil Description :	Sandy CLAY/Clayey SAND			
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 14**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245801	245802	245803	245804
Test Number :	42	43	44	45
Sampling Method :	-	-	-	-
Date Sampled :	21/05/2018	21/05/2018	21/05/2018	21/05/2018
Date Tested :	21/05/2018	21/05/2018	21/05/2018	21/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8974.200 N 31361.200 RL 44.700	E 8988.900 N 31339.800 RL 45.400	E 9015.200 N 31343.300 RL 45.200	E 9006.100 N 31360.600 RL 44.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	12.6	12.6	11.6	9.5
Hilf MDR Number :	245801	245802	245803	245804
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	99	96.5	84
Field Wet Density (t/m³) :	2.087	2.080	2.069	2.075
Optimum Moisture Content (%) :	12.8	12.7	12.0	11.3
Moisture Variation :	0.2	0.1	0.5	1.8
Peak Converted Wet Density (t/m³) :	2.141	2.159	2.130	2.117
Hilf Density Ratio (%) :	**97.5**	**96.5**	**97.0**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND/Sandy CLAY	Clayey SAND/Sandy CLAY	Clayey SAND/Sandy CLAY	Clayey SAND/Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 15**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/05/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245805	245806		
Test Number :	46	47		
Sampling Method :	-	-		
Date Sampled :	21/05/2018	21/05/2018		
Date Tested :	21/05/2018	21/05/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 8982.800 N 31348.900 RL 45.500	E 8980.000 N 31340.000 RL 45.400		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	10.6	11.5		
Hilf MDR Number :	245805	245806		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	85	94.5		
Field Wet Density (t/m³) :	2.059	2.077		
Optimum Moisture Content (%) :	12.5	12.2		
Moisture Variation :	1.9	0.7		
Peak Converted Wet Density (t/m³) :	2.132	2.132		
Hilf Density Ratio (%) :	**96.5**	**97.5**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Clayey SAND/Sandy CLAY	Clayey SAND/Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 17**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245970	245971	245972	245973
Test Number :	52	53	54	55
Sampling Method :	-	-	-	-
Date Sampled :	23/05/2018	23/05/2018	23/05/2018	23/05/2018
Date Tested :	23/05/2018	23/05/2018	23/05/2018	23/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9076.500 N 31383.500 RL 44.700	E 9068.300 N 31397.300 RL 44.800	E 9089.400 N 31413.600 RL 44.600	E 9081.900 N 31425.100 RL 44.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.5	11.4	11.5	12.8
Hilf MDR Number :	245970	245971	245972	245973
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99.5	88.5	88.5	101
Field Wet Density (t/m³) :	2.059	2.058	2.057	2.125
Optimum Moisture Content (%) :	13.6	12.8	13.0	12.7
Moisture Variation :	0.1	1.5	1.5	-0.1
Peak Converted Wet Density (t/m³) :	2.116	2.086	2.068	2.140
Hilf Density Ratio (%) :	**97.5**	**98.5**	**99.5**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND/Sandy CLAY	Gravelly Clayey SAND/Sandy CLAY	Gravelly Clayey SAND/Sandy CLAY	Gravelly Clayey SAND/Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 18**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245974	245975	245976	
Test Number :	56	57	58	
Sampling Method :	-	-	-	
Date Sampled :	23/05/2018	23/05/2018	23/05/2018	
Date Tested :	23/05/2018	23/05/2018	23/05/2018	
Material Type :	**General Fill**	**General Fill**	**General Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	-	-	-	
Sample Location :	E 8983.100 N 31335.100 RL 46.200	E 8972.800 N 31358.200 RL 45.800	E 8992.100 N 31316.400 RL 46.500	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	-	-	
Field Moisture Content (%) :	12.7	11.3	14.1	
Hilf MDR Number :	245974	245975	245976	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	104	86	103.5	
Field Wet Density (t/m³) :	2.107	2.078	2.085	
Optimum Moisture Content (%) :	12.2	13.1	13.6	
Moisture Variation :	-0.5	1.9	-0.5	
Peak Converted Wet Density (t/m³) :	2.182	2.135	2.129	
Hilf Density Ratio (%) :	**96.5**	**97.5**	**98.0**	
Minimum Specification :	95	95	95	
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	
Site Selection :	-	-	-	
Soil Description :	Gravelly Clayey SAND/Sandy CLAY	Gravelly Clayey SAND/Sandy CLAY	Gravelly Clayey SAND/Sandy CLAY	
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 19**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	245977	245978	245979	245980
Test Number :	59	60	61	62
Sampling Method :	-	-	-	-
Date Sampled :	23/05/2018	23/05/2018	23/05/2018	23/05/2018
Date Tested :	23/05/2018	23/05/2018	23/05/2018	23/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	WSUD Area E 9302.900 N 31419.600 RL 41.400	WSUD Area E 9310.700 N 31414.200 RL 41.200	WSUD Area E 9319.700 N 31394.800 RL 40.900	WSUD Area E 9325.1 N 31380.5 RL 41.100
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.8	13.5	12.9	10.7
Hilf MDR Number :	245977	245978	245979	245980
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98.5	99	99	99
Field Wet Density (t/m³) :	2.109	2.180	2.160	2.139
Optimum Moisture Content (%) :	11.0	13.6	13.0	10.8
Moisture Variation :	0.1	0.1	0.1	0.1
Peak Converted Wet Density (t/m³) :	2.148	2.183	2.159	2.145
Hilf Density Ratio (%) :	**98.0**	**100.0**	**100.0**	**99.5**
Minimum Specification :	98	98	98	98
Moisture Specification :	+ or - 2%	+ or - 2%	+ or - 2%	+ or - 2%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey Sand/Sandy CLAY	Gravelly Clayey Sand/Sandy CLAY	Gravelly Clayey Sand/Sandy CLAY	Gravelly Clayey Sand/Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 20**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246087	246088		
Test Number :	63	64		
Sampling Method :	-	-		
Date Sampled :	24/05/2018	24/05/2018		
Date Tested :	24/05/2018	24/05/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Future Pump Station E 9340.700 N 31391.000 RL 41.500	Future Pump Station E 9338.900 N 31375.100 RL 41.300		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	10.5	11.6		
Hilf MDR Number :	246087	246088		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	98	96.5		
Field Wet Density (t/m³) :	2.119	2.130		
Optimum Moisture Content (%) :	10.7	12.0		
Moisture Variation :	0.2	0.5		
Peak Converted Wet Density (t/m³) :	2.146	2.130		
Hilf Density Ratio (%) :	**98.5**	**100.0**		
Minimum Specification :	98	98		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Gravelly Clayey SAND/Sandy CLAY	Gravelly Clayey SAND/Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 21**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246167	246168		
Test Number :	65	66		
Sampling Method :	-	-		
Date Sampled :	25/05/2018	25/05/2018		
Date Tested :	25/05/2018	25/05/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Proposed Pump Station Pad E 9333.300 N 31405.100 RL 41.300	Proposed Pump Station Pad E 9329.500 N 31393.800 RL 41.500		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	12.2	13.8		
Hilf MDR Number :	246167	246168		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.4	AS1289.2.1.4		
Moisture Ratio (%) :	88	96		
Field Wet Density (t/m³) :	2.160	2.149		
Optimum Moisture Content (%) :	13.8	14.4		
Moisture Variation :	1.7	0.6		
Peak Converted Wet Density (t/m³) :	2.158	2.102		
Hilf Density Ratio (%) :	**100.0**	**102.0**		
Minimum Specification :	98	98		
Moisture Specification :	+ or - 2%	+ or - 2%		
Site Selection :	-	-		
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 22**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246169	246170	246171	246172
Test Number :	67	68	69	70
Sampling Method :	-	-	-	-
Date Sampled :	25/05/2018	25/05/2018	25/05/2018	25/05/2018
Date Tested :	25/05/2018	25/05/2018	25/05/2018	25/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9226.400 N 31474.000 RL 44.000	E 9239.600 N 31467.100 RL 43.500	E 9252.800 N 31472.600 RL 43.000	E 9270.000 N 31468.900 RL 43.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	16.5	15.1	14.6	15.2
Hilf MDR Number :	246169	246170	246171	246172
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	112	102	103.5	115
Field Wet Density (t/m³) :	2.047	2.086	2.076	2.046
Optimum Moisture Content (%) :	14.7	14.8	14.1	13.2
Moisture Variation :	-1.7	-0.3	-0.5	-2.0
Peak Converted Wet Density (t/m³) :	2.136	2.144	2.167	2.142
Hilf Density Ratio (%) :	**96.0**	**97.5**	**96.0**	**95.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 23**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246173	246174	246175	246176
Test Number :	71	72	73	74
Sampling Method :	-	-	-	-
Date Sampled :	25/05/2018	25/05/2018	25/05/2018	25/05/2018
Date Tested :	25/05/2018	25/05/2018	25/05/2018	25/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9091.600 N 31434.900 RL 45.000	E 9093.200 N 31420.600 RL 44.800	E 9095.600 N 31404.600 RL 44.600	E 9097.600 N 31388.500 RL 44.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.3	11.9	14.7	15.3
Hilf MDR Number :	246173	246174	246175	246176
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99	101	101.5	102
Field Wet Density (t/m³) :	2.060	2.082	2.054	2.071
Optimum Moisture Content (%) :	9.4	11.8	14.4	15.0
Moisture Variation :	0.1	-0.1	-0.2	-0.2
Peak Converted Wet Density (t/m³) :	2.159	2.180	2.151	2.167
Hilf Density Ratio (%) :	**95.5**	**95.5**	**95.5**	**95.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 24**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246177			
Test Number :	75			
Sampling Method :	-			
Date Sampled :	25/05/2018			
Date Tested :	25/05/2018			
Material Type :	**General Fill**			
Material Source :	**On Site**			
Lot Number :	-			
Sample Location :	E 9098.000 N 31374.700 RL 44.700			
Test Depth (mm) :	150			
Layer Depth (mm) :	-			
Maximum Size (mm) :	19			
Oversize Wet (%) :	-			
Oversize Dry (%) :	-			
Oversize Density (t/m³) :	-			
Field Moisture Content (%) :	13.6			
Hilf MDR Number :	246177			
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1 & 5.7.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	98.5			
Field Wet Density (t/m³) :	2.050			
Optimum Moisture Content (%) :	13.8			
Moisture Variation :	0.2			
Peak Converted Wet Density (t/m³) :	2.138			
Hilf Density Ratio (%) :	**96.0**			
Minimum Specification :	95			
Moisture Specification :	-2% to +3%			
Site Selection :	-			
Soil Description :	Sandy CLAY			
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 25**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246192	246193	246194	
Test Number :	76	77	78	
Sampling Method :	-	-	-	
Date Sampled :	26/05/2018	26/05/2018	26/05/2018	
Date Tested :	26/05/2018	26/05/2018	26/05/2018	
Material Type :	**General Fill**	**General Fill**	**General Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	-	-	-	
Sample Location :	Detention Basin Bund Wall Chainage 165 Centreline of Bund Wall Final Level	Detention Basin Bund Wall Chainage 105 Centreline of Bund Wall Final Level	Detention Basin Bund Wall Chainage 61 Centreline of Bund Wall Final Level	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	-	-	
Field Moisture Content (%) :	13.4	10.9	12.1	
Hilf MDR Number :	246192	246193	246194	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	104	88.5	97.5	
Field Wet Density (t/m³) :	2.189	2.155	2.170	
Optimum Moisture Content (%) :	12.9	12.4	12.4	
Moisture Variation :	-0.5	1.5	0.3	
Peak Converted Wet Density (t/m³) :	2.155	2.118	2.115	
Hilf Density Ratio (%) :	**101.5**	**102.0**	**102.5**	
Minimum Specification :	98	98	98	
Moisture Specification :	+ or - 2%	+ or - 2%	+ or - 2%	
Site Selection :	-	-	-	
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 26**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**08/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246225	246226	246227	246228
Test Number :	79	80	81	82
Sampling Method :	-	-	-	-
Date Sampled :	28/05/2018	28/05/2018	28/05/2018	28/05/2018
Date Tested :	28/05/2018	28/05/2018	28/05/2018	28/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9068.600 N 31697.400 RL 46.600	E 9081.400 N 31672.200 RL 46.200	E 9039.700 N 31654.300 RL 47.700	E 9069.400 N 31630.100 RL 47.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	37.5	37.5	19	19
Oversize Wet (%) :	17	30	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.312	2.347	-	-
Field Moisture Content (%) :	13.8	11.8	12.1	13.1
Hilf MDR Number :	246225	246226	246227	246228
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98.5	88	102	102
Field Wet Density (t/m³) :	2.156	2.165	2.065	2.046
Optimum Moisture Content (%) :	14.0	13.4	11.8	12.9
Moisture Variation :	0.2	1.5	-0.2	-0.2
Peak Converted Wet Density (t/m³) :	2.182*	2.144*	2.166	2.147
Hilf Density Ratio (%) :	**99.0**	**97.5**	**95.5**	**95.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	**Lab No. 246226 30.4% retained on 37.5mm sieve. Test performed on portion of sample up to 20% retained on the 37.5mm sieve.**			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 27**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246314	246315	246316	246317
Test Number :	83	84	85	86
Sampling Method :	-	-	-	-
Date Sampled :	29/05/2018	29/05/2018	29/05/2018	29/05/2018
Date Tested :	29/05/2018	29/05/2018	29/05/2018	29/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9069.200 N 31429.400 RL 46.000	E 9076.300 N 31419.100 RL 45.800	E 9082.800 N 31408.500 RL 45.600	E 9094.700 N 31390.300 RL 45.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	12.5	11.9	11.3	15.0
Hilf MDR Number :	246314	246315	246316	246317
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	101	87	86.5	103
Field Wet Density (t/m³) :	2.070	2.040	2.001	2.051
Optimum Moisture Content (%) :	12.4	13.7	13.1	14.6
Moisture Variation :	-0.1	1.8	1.8	-0.5
Peak Converted Wet Density (t/m³) :	2.120	2.062	2.061	2.137
Hilf Density Ratio (%) :	**97.5**	**99.0**	**97.0**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 28**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246318	246319	246320	246321
Test Number :	87	88	89	90
Sampling Method :	-	-	-	-
Date Sampled :	29/05/2018	29/05/2018	29/05/2018	29/05/2018
Date Tested :	29/05/2018	29/05/2018	29/05/2018	29/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9039.900 N 31415.600 RL 45.600	E 9043.900 N 31399.800 RL 45.900	E 9052.400 N 31384.900 RL 45.900	E 9061.000 N 31369.300 RL 46.000
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	5.4	7.5	6.2	8.5
Hilf MDR Number :	246318	246319	246320	246321
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	101.5	101	98	100
Field Wet Density (t/m³) :	1.969	1.894	1.796	1.864
Optimum Moisture Content (%) :	5.3	7.4	6.3	8.5
Moisture Variation :	-0.1	-0.1	0.1	0.0
Peak Converted Wet Density (t/m³) :	2.121	2.111	2.091	2.133
Hilf Density Ratio (%) :	**93.0**	**89.5**	**86.0**	**87.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 29**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246360	246361	246362	246363
Test Number :	91	92	93	94
Sampling Method :	-	-	-	-
Date Sampled :	30/05/2018	30/05/2018	30/05/2018	30/05/2018
Date Tested :	30/05/2018	30/05/2018	30/05/2018	30/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9039.900 N 31415.600 RL 45.600 Retest of Field Density No. 87 on the 29/05/18	E 9043.900 N 31399.800 RL 45.900 Retest of Field Density No. 88 on the 29/05/18	E 9052.400 N 31384.900 RL 45.900 Retest of Field Density No. 89 on the 29/05/18	E 9061.000 N 31369.300 RL 46.000 Retest of Field Density No. 90 on the 29/05/18
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.9	12.1	10.3	12.2
Hilf MDR Number :	246360	246361	246362	246363
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86.5	85	84.5	97.5
Field Wet Density (t/m³) :	2.064	2.056	2.060	2.062
Optimum Moisture Content (%) :	13.8	14.3	12.2	12.5
Moisture Variation :	1.9	2.1	1.9	0.3
Peak Converted Wet Density (t/m³) :	2.031	2.058	2.050	2.109
Hilf Density Ratio (%) :	**101.5**	**100.0**	**100.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 30**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246364	246365	246366	246367
Test Number :	95	96	97	98
Sampling Method :	-	-	-	-
Date Sampled :	30/05/2018	30/05/2018	30/05/2018	30/05/2018
Date Tested :	30/05/2018	30/05/2018	30/05/2018	30/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9076.300 N 31351.300 RL 45.900	E 9063.100 N 31369.500 RL 45.800	E 9052.900 N 31383.200 RL 45.800	E 9043.300 N 31396.500 RL 45.800
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	8.2	12.4	11.9	12.4
Hilf MDR Number :	246364	246365	246366	246367
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	80	102	99	105
Field Wet Density (t/m³) :	2.068	2.063	2.105	2.125
Optimum Moisture Content (%) :	10.2	12.2	12.0	11.8
Moisture Variation :	2.1	-0.2	0.1	-0.6
Peak Converted Wet Density (t/m³) :	2.126	2.080	2.188	2.102
Hilf Density Ratio (%) :	**97.5**	**99.0**	**96.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 31**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246442	246443	246444	246445
Test Number :	99	100	101	102
Sampling Method :	-	-	-	-
Date Sampled :	31/05/2018	31/05/2018	31/05/2018	31/05/2018
Date Tested :	31/05/2018	31/05/2018	31/05/2018	31/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8881.4 N 31406.300 RL 50.000	E 8892.400 N 31415.200 RL 50.200	E 8910.500 N 31429.700 RL 50.500	E 8906.700 N 31460.600 RL 52.200
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	6.2	5.6	16.9	12.8
Hilf MDR Number :	246442	246443	246444	246445
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84	73.5	97	92
Field Wet Density (t/m³) :	2.134	2.069	2.100	2.030
Optimum Moisture Content (%) :	7.4	7.6	17.4	13.9
Moisture Variation :	1.2	2.1	0.5	1.1
Peak Converted Wet Density (t/m³) :	2.145	2.066	2.076	2.073
Hilf Density Ratio (%) :	**99.5**	**100.0**	**101.0**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 32**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246446	246447	246448	246449
Test Number :	103	104	105	106
Sampling Method :	-	-	-	-
Date Sampled :	31/05/2018	31/05/2018	31/05/2018	31/05/2018
Date Tested :	31/05/2018	31/05/2018	31/05/2018	31/05/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8940.900 N 31420.000 RL 48.700	E 8927.400 N 31410.300 RL 48.900	E 9025.600 N 31376.100 RL 45.700	E 9032.800 N 31361.100 RL 46.100
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	8.9	5.4	14.8	9.7
Hilf MDR Number :	246446	246447	246448	246449
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98.5	73	97.5	82.5
Field Wet Density (t/m³) :	2.060	2.111	2.081	2.104
Optimum Moisture Content (%) :	9.0	7.4	15.2	11.8
Moisture Variation :	0.1	2.1	0.3	2.1
Peak Converted Wet Density (t/m³) :	2.035	2.107	2.118	2.032
Hilf Density Ratio (%) :	**101.0**	**100.0**	**98.0**	**103.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 33**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246450	246451		
Test Number :	107	108		
Sampling Method :	-	-		
Date Sampled :	31/05/2018	31/05/2018		
Date Tested :	31/05/2018	31/05/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 9039.900 N 31347.600 RL 46.500	E 9049.600 N 31329.700 RL 46.600		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	8.0	13.7		
Hilf MDR Number :	246450	246451		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	83	98		
Field Wet Density (t/m³) :	2.088	2.191		
Optimum Moisture Content (%) :	9.6	14.0		
Moisture Variation :	1.7	0.3		
Peak Converted Wet Density (t/m³) :	2.081	2.113		
Hilf Density Ratio (%) :	**100.5**	**103.5**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	-	-		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 34**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246530	246531	246532	246533
Test Number :	109	110	111	112
Sampling Method :	-	-	-	-
Date Sampled :	1/06/2018	1/06/2018	1/06/2018	1/06/2018
Date Tested :	1/06/2018	1/06/2018	1/06/2018	1/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9116.000 N 31390.700 RL 45.600	E 9108.700 N 31379.600 RL 45.900	E 9088.300 N 31367.300 RL 46.200	E 9074.700 N 31356.100 RL 46.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	12.4	10.9	11.4	11.7
Hilf MDR Number :	246530	246531	246532	246533
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	101.5	86	99.5	102.5
Field Wet Density (t/m³) :	2.074	2.036	2.075	2.056
Optimum Moisture Content (%) :	12.2	12.6	11.5	11.4
Moisture Variation :	-0.2	1.8	0.1	-0.2
Peak Converted Wet Density (t/m³) :	2.140	2.092	2.134	2.145
Hilf Density Ratio (%) :	**97.0**	**97.5**	**97.0**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 35**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**9/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246534	246535	246536	246537
Test Number :	113	114	115	116
Sampling Method :	-	-	-	-
Date Sampled :	1/06/2018	1/06/2018	1/06/2018	1/06/2018
Date Tested :	1/06/2018	1/06/2018	1/06/2018	1/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9057.600 N 31342.300 RL 46.700	E 9015.100 N 31348.600 RL 46.300	E 8996.000 N 31330.000 RL 46.700	E 8977.200 N 31327.800 RL 47.100
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.2	11.9	14.4	11.0
Hilf MDR Number :	246534	246535	246536	246537
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	97	89.5	99	102
Field Wet Density (t/m³) :	2.100	2.050	2.068	2.088
Optimum Moisture Content (%) :	11.6	13.3	14.5	10.8
Moisture Variation :	0.3	1.3	0.1	-0.2
Peak Converted Wet Density (t/m³) :	2.113	2.087	2.136	2.146
Hilf Density Ratio (%) :	**99.5**	**98.0**	**97.0**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 36**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246636	246637	246638	246639
Test Number :	117	118	119	120
Sampling Method :	-	-	-	-
Date Sampled :	04/06/2018	04/06/2018	04/06/2018	04/06/2018
Date Tested :	04/06/2018	04/06/2018	04/06/2018	04/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9054.200 N 31394.900 RL 46.100	E 9030.400 N 31379.500 RL 46.500	E 9010.800 N 31351.600 RL 46.800	E 8991.700 N 31348.900 RL 46.800
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.4	12.9	8.4	11.5
Hilf MDR Number :	246636	246637	246638	246639
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	103	106	83.5	86.5
Field Wet Density (t/m³) :	2.090	2.061	2.048	2.050
Optimum Moisture Content (%) :	11.0	12.2	10.1	13.3
Moisture Variation :	-0.3	-0.7	1.7	1.8
Peak Converted Wet Density (t/m³) :	2.163	2.139	2.142	2.149
Hilf Density Ratio (%) :	**96.5**	**96.5**	**95.5**	**95.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 37**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246640	246641	246642	246643
Test Number :	121	122	123	124
Sampling Method :	-	-	-	-
Date Sampled :	04/06/2018	04/06/2018	04/06/2018	04/06/2018
Date Tested :	04/06/2018	04/06/2018	04/06/2018	04/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8986.500 N 31333.300 RL 47.200	E 8959.700 N 31340.700 RL 47.300	E 8963.000 N 31367.000 RL 46.700	E 8983.100 N 31365.100 RL 46.400
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.5	12.2	10.0	18.0
Hilf MDR Number :	246640	246641	246642	246643
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	90	102	91.5	101
Field Wet Density (t/m³) :	2.108	2.088	2.085	2.067
Optimum Moisture Content (%) :	12.8	12.0	10.9	17.8
Moisture Variation :	1.2	-0.2	0.9	-0.2
Peak Converted Wet Density (t/m³) :	2.179	2.170	2.144	2.096
Hilf Density Ratio (%) :	**96.5**	**96.0**	**97.0**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 38**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246644	246645		
Test Number :	125	126		
Sampling Method :	-	-		
Date Sampled :	04/06/2018	04/06/2018		
Date Tested :	04/06/2018	04/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 9012.900 N 31386.700 RL 46.300	E 9028.000 N 31430.500 RL 46.500		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	150	150		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	12.1	12.1		
Hilf MDR Number :	246644	246645		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	93.5	100		
Field Wet Density (t/m³) :	2.113	2.080		
Optimum Moisture Content (%) :	12.9	12.1		
Moisture Variation :	0.8	0.0		
Peak Converted Wet Density (t/m³) :	2.108	2.150		
Hilf Density Ratio (%) :	**100.0**	**96.5**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 39**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246646	246647	246648	
Test Number :	127	128	129	
Sampling Method :	-	-	-	
Date Sampled :	04/06/2018	04/06/2018	04/06/2018	
Date Tested :	04/06/2018	04/06/2018	04/06/2018	
Material Type :	**General Fill**	**General Fill**	**General Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	-	-	-	
Sample Location :	External Works E 8502.200 N 31868.900 RL 70.700	External Works E 8506.619 N 31823.700 RL 68.500	External Works E 8502.100 N 31805.300 RL 68.300	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	150	150	150	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	-	-	
Field Moisture Content (%) :	12.6	13.2	13.5	
Hilf MDR Number :	246646	246647	246648	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	89.5	100.5	100.5	
Field Wet Density (t/m³) :	2.035	2.082	2.076	
Optimum Moisture Content (%) :	14.1	13.2	13.4	
Moisture Variation :	1.5	0.0	-0.1	
Peak Converted Wet Density (t/m³) :	2.120	2.157	2.171	
Hilf Density Ratio (%) :	**96.0**	**96.5**	**95.5**	
Minimum Specification :	95	95	95	
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	
Site Selection :	-	-	-	
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 40**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246696	246697	246698	246699
Test Number :	130	131	132	133
Sampling Method :	-	-	-	-
Date Sampled :	05/06/2018	05/06/2018	05/06/2018	05/06/2018
Date Tested :	05/06/2018	05/06/2018	05/06/2018	05/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8920.000 N 31322.500 RL 47.900	E 8952.400 N 31346.600 RL 47.400	E 8981.400 N 31366.900 RL 46.800	E 9033.500 N 31368.500 RL 46.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	8.5	8.9	10.1	8.9
Hilf MDR Number :	246696	246697	246698	246699
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	83	84	98.5	84.5
Field Wet Density (t/m³) :	2.040	2.080	2.089	2.109
Optimum Moisture Content (%) :	10.2	10.6	10.3	10.5
Moisture Variation :	1.8	1.8	0.2	1.7
Peak Converted Wet Density (t/m³) :	2.132	2.080	2.092	2.102
Hilf Density Ratio (%) :	**95.5**	**100.0**	**100.0**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 41**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246700	246701	246702	246703
Test Number :	134	135	136	137
Sampling Method :	-	-	-	-
Date Sampled :	05/06/2018	05/06/2018	05/06/2018	05/06/2018
Date Tested :	05/06/2018	05/06/2018	05/06/2018	05/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8954.400 N 31396.900 RL 47.300	E 8929.400 N 31382.000 RL 47.600	E 9047.800 N 31382.100 Final Level	E 9047.800 N 31382.100 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	13	10	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.530	2.608	-	-
Field Moisture Content (%) :	9.0	8.6	10.7	10.8
Hilf MDR Number :	246700	246701	246702	246703
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84	84	96	97.5
Field Wet Density (t/m³) :	2.099	2.124	2.190	2.081
Optimum Moisture Content (%) :	10.7	10.2	11.1	11.1
Moisture Variation :	1.8	1.7	0.4	0.3
Peak Converted Wet Density (t/m³) :	2.159*	2.143*	2.178	2.137
Hilf Density Ratio (%) :	**97.0**	**99.0**	**100.5**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 42**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246704	246705	246706	246707
Test Number :	138	139	140	141
Sampling Method :	-	-	-	-
Date Sampled :	05/06/2018	05/06/2018	05/06/2018	05/06/2018
Date Tested :	05/06/2018	05/06/2018	05/06/2018	05/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8498.100 N 31803.700 RL 70.350 Final Level	E 8496.800 N 31782.20 RL 70.430 Final Level	E 8496.900 N 31768.180 RL 70.520 Final Level	E 8869.600 N 31539.000 RL 57.500 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.3	13.9	9.0	9.0
Hilf MDR Number :	246704	246705	246706	246707
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100.5	88.5	83.5	83.5
Field Wet Density (t/m³) :	2.076	2.056	2.092	2.103
Optimum Moisture Content (%) :	13.2	15.7	10.8	10.8
Moisture Variation :	-0.1	1.8	1.8	1.8
Peak Converted Wet Density (t/m³) :	2.166	2.081	2.101	2.148
Hilf Density Ratio (%) :	**96.0**	**99.0**	**99.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 43**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246708	246709		
Test Number :	142	143		
Sampling Method :	-	-		
Date Sampled :	05/06/2018	05/06/2018		
Date Tested :	05/06/2018	05/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 8865.661 N 31506.900 RL 56.000 Final Level	E 8867.600 N 31478.500 RL 54.500 Final Level		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	150	150		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	10.1	12.4		
Hilf MDR Number :	246708	246709		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	85.5	88		
Field Wet Density (t/m³) :	2.123	2.078		
Optimum Moisture Content (%) :	11.8	14.1		
Moisture Variation :	1.7	1.7		
Peak Converted Wet Density (t/m³) :	2.096	2.109		
Hilf Density Ratio (%) :	**101.5**	**98.5**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 44**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246789	246790	246791	246792
Test Number :	144	145	146	147
Sampling Method :	-	-	-	-
Date Sampled :	06/06/2018	06/06/2018	06/06/2018	06/06/2018
Date Tested :	06/06/2018	06/06/2018	06/06/2018	06/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 9009.400 N 31352.900 RL 47.500 / Final Level	Fill Area 2 E 9003.200 N 31360.000 RL 47.400 / Final Level	Fill Area 2 E 9011.400 N 31372.000 RL 47.100 / Final Level	Fill Area 2 E 9025.000 N 31363.000 RL 47.000 / Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	8.3	9.5	9.7	7.4
Hilf MDR Number :	246789	246790	246791	246792
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	97	97	84	81
Field Wet Density (t/m³) :	2.076	2.107	2.080	2.083
Optimum Moisture Content (%) :	8.5	9.8	11.5	9.1
Moisture Variation :	0.2	0.3	1.9	1.8
Peak Converted Wet Density (t/m³) :	2.110	2.108	2.117	2.126
Hilf Density Ratio (%) :	**98.5**	**100.0**	**98.0**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 45**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246793	246794	246795	246796
Test Number :	148	149	150	151
Sampling Method :	-	-	-	-
Date Sampled :	06/06/2018	06/06/2018	06/06/2018	06/06/2018
Date Tested :	06/06/2018	06/06/2018	06/06/2018	06/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 9034.3 N 31372.400 RL 47.000 / Final Level	Fill Area 2 E 9026.8 N 31379.2 RL 47.000 / Final Level	Fill Area 2 E 9109.600 N 31327.200 RL 46.500	Fill Area 2 E 9086.500 N 31309.900 RL 47.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.1	10.3	8.6	7.1
Hilf MDR Number :	246793	246794	246795	246796
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	96.5	75.5	71
Field Wet Density (t/m³) :	2.081	2.068	2.090	2.079
Optimum Moisture Content (%) :	9.3	10.7	11.4	10.0
Moisture Variation :	0.2	0.3	2.8	3.0
Peak Converted Wet Density (t/m³) :	2.097	2.113	2.093	2.064
Hilf Density Ratio (%) :	**99.0**	**98.0**	**100.0**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 46**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246797	246798		
Test Number :	152	153		
Sampling Method :	-	-		
Date Sampled :	06/06/2018	06/06/2018		
Date Tested :	06/06/2018	06/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Fill Area 2 E 9073.300 N 31297.700 RL 48.200	Fill Area 2 E 9014.600 N 31285.400 RL 48.500		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	10.0	9.8		
Hilf MDR Number :	246797	246798		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	80.5	98.5		
Field Wet Density (t/m³) :	2.105	2.090		
Optimum Moisture Content (%) :	12.4	10.0		
Moisture Variation :	2.4	0.1		
Peak Converted Wet Density (t/m³) :	2.113	2.108		
Hilf Density Ratio (%) :	**99.5**	**99.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	-	-		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 47**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246799	246800	246801	246802
Test Number :	154	155	156	157
Sampling Method :	-	-	-	-
Date Sampled :	06/06/2018	06/06/2018	06/06/2018	06/06/2018
Date Tested :	06/06/2018	06/06/2018	06/06/2018	06/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8627.900 N 31783.200 RL 59.500	Fill Area 1 E 8616.300 N 31767.300 RL 59.600	Fill Area 1 E 8612.500 N 31790.100 RL 60.300	Fill Area 1 E 8561.400 N 31782.100 RL 63.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.1	8.8	11.1	8.2
Hilf MDR Number :	246799	246800	246801	246802
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	102.5	76.5	102	76
Field Wet Density (t/m³) :	2.081	2.066	2.093	2.056
Optimum Moisture Content (%) :	8.9	11.5	10.9	10.8
Moisture Variation :	-0.2	2.8	-0.2	2.6
Peak Converted Wet Density (t/m³) :	2.121	2.078	2.078	2.101
Hilf Density Ratio (%) :	**98.0**	**99.5**	**100.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 48**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246803	246804		
Test Number :	158	159		
Sampling Method :	-	-		
Date Sampled :	06/06/2018	06/06/2018		
Date Tested :	06/06/2018	06/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Fill Area 1 E 8553.600 N 31803.500 RL 64.100	Fill Area 1 E 8552.500 N 31783.700 RL 64.100		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	9.0	12.4		
Hilf MDR Number :	246803	246804		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	78	99		
Field Wet Density (t/m³) :	2.042	2.060		
Optimum Moisture Content (%) :	11.5	12.5		
Moisture Variation :	2.6	0.1		
Peak Converted Wet Density (t/m³) :	2.074	2.127		
Hilf Density Ratio (%) :	**98.5**	**97.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	-	-		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 49**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**22/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246923	246924	246925	246926
Test Number :	160	161	162	163
Sampling Method :	-	-	-	-
Date Sampled :	11/06/2018	11/06/2018	11/06/2018	11/06/2018
Date Tested :	11/06/2018	11/06/2018	11/06/2018	11/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8545.200 N 31776.100 RL 60.900	Fill Area 1 E 8551.300 N 31778.000 RL 64.300	Fill Area 1 E 8540.900 N 31796.500 RL 64.800	Fill Area 1 E 8537.500 N 31815.900 RL 65.400
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.5	16.5	10.5	10.9
Hilf MDR Number :	246923	246924	246925	246926
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99.5	101	98	97
Field Wet Density (t/m³) :	2.056	2.121	2.066	2.154
Optimum Moisture Content (%) :	13.6	16.4	10.7	11.3
Moisture Variation :	0.1	-0.1	0.2	0.3
Peak Converted Wet Density (t/m³) :	2.122	2.074	2.116	2.174
Hilf Density Ratio (%) :	**97.0**	**102.5**	**97.5**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 50**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**22/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246927	246928	246929	246930
Test Number :	164	165	166	167
Sampling Method :	-	-	-	-
Date Sampled :	11/06/2018	11/06/2018	11/06/2018	11/06/2018
Date Tested :	11/06/2018	11/06/2018	11/06/2018	11/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 9060.600 N 31288.500 RL 48.900	Fill Area 2 E 9048.600 N 31298.600 RL 48.900	Fill Area 2 E 9061.500 N 31312.100 RL 48.500	Fill Area 2 E 9101.300 N 31346.000 RL 46.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.1	9.0	9.5	11.1
Hilf MDR Number :	246927	246928	246929	246930
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85.5	83.5	85	86
Field Wet Density (t/m³) :	2.115	2.077	2.085	2.062
Optimum Moisture Content (%) :	11.8	10.8	11.2	12.9
Moisture Variation :	1.7	1.8	1.7	1.8
Peak Converted Wet Density (t/m³) :	2.115	2.128	2.098	2.104
Hilf Density Ratio (%) :	**100.0**	**97.5**	**99.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 51**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**22/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246931	246932		
Test Number :	168	169		
Sampling Method :	-	-		
Date Sampled :	11/06/2018	11/06/2018		
Date Tested :	11/06/2018	11/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Fill Area 2 E 9101.800 N 31320.200 RL 46.800	Fill Area 2 E 9053.800 N 31276.000 RL 49.000		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	150	150		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	12.7	10.4		
Hilf MDR Number :	246931	246932		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	90.5	85.5		
Field Wet Density (t/m³) :	2.085	2.068		
Optimum Moisture Content (%) :	14.0	12.1		
Moisture Variation :	1.4	1.8		
Peak Converted Wet Density (t/m³) :	2.071	2.089		
Hilf Density Ratio (%) :	**100.5**	**99.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 52**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**22/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	246933	246934	246935	246936
Test Number :	170	171	172	173
Sampling Method :	-	-	-	-
Date Sampled :	11/06/2018	11/06/2018	11/06/2018	11/06/2018
Date Tested :	11/06/2018	11/06/2018	11/06/2018	11/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8580.700 N 31802.400 RL 59.800	Fill Area 1 E 8591.500 N 31783.000 RL 61.800	Fill Area 1 E 8582.000 N 31759.000 RL 59.900	Fill Area 1 E 8582.300 N 31741.900 RL 61.100
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	14.4	12.7	9.4	11.4
Hilf MDR Number :	246933	246934	246935	246936
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	90.5	93	96.5	88
Field Wet Density (t/m³) :	2.052	2.062	1.983	2.075
Optimum Moisture Content (%) :	15.9	13.7	9.8	13.0
Moisture Variation :	1.5	1.0	0.3	1.6
Peak Converted Wet Density (t/m³) :	2.100	2.075	2.034	2.022
Hilf Density Ratio (%) :	**97.5**	**99.5**	**97.5**	**102.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 53**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**22/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247010	247011	247012	247013
Test Number :	174	175	176	177
Sampling Method :	-	-	-	-
Date Sampled :	12/06/2018	12/06/2018	12/06/2018	12/06/2018
Date Tested :	12/06/2018	12/06/2018	12/06/2018	12/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 8933.200 N 31394.200 RL 48.000	Fill Area 2 E 8943.200 N 31402.200 RL 48.500	Fill Area 2 E 8920.900 N 31390.000 RL 48.600	Fill Area 2 E 8911.600 N 31381.700 RL 48.800
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	12	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.508	-	-	-
Field Moisture Content (%) :	9.5	11.6	9.8	8.5
Hilf MDR Number :	247010	247011	247012	247013
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	83.5	87	86.5	83
Field Wet Density (t/m³) :	2.085	2.133	2.098	2.120
Optimum Moisture Content (%) :	11.4	13.4	11.3	10.2
Moisture Variation :	1.9	1.8	1.6	1.8
Peak Converted Wet Density (t/m³) :	2.159*	2.085	2.049	2.084
Hilf Density Ratio (%) :	**96.5**	**102.5**	**102.5**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 54**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**22/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247014	247015	247016	247017
Test Number :	178	179	180	181
Sampling Method :	-	-	-	-
Date Sampled :	12/06/2018	12/06/2018	12/06/2018	12/06/2018
Date Tested :	12/06/2018	12/06/2018	12/06/2018	12/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8624.900 N 31731.700 RL 60.400	Fill Area 1 E 8626.100 N 31756.500 RL 59.900	Fill Area 1 E 8616.700 N 31741.500 RL 60.800	Fill Area 1 E 8611.300 N 31756.200 RL 61.100
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.7	11.6	12.1	11.2
Hilf MDR Number :	247014	247015	247016	247017
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98.5	99.5	96.5	102
Field Wet Density (t/m³) :	2.104	2.095	2.125	2.079
Optimum Moisture Content (%) :	11.9	11.6	12.5	11.0
Moisture Variation :	0.2	0.0	0.5	-0.2
Peak Converted Wet Density (t/m³) :	2.131	2.084	2.032	2.126
Hilf Density Ratio (%) :	**98.5**	**100.5**	**104.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 55**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**22/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247018	247019	247020	247021
Test Number :	182	183	184	185
Sampling Method :	-	-	-	-
Date Sampled :	12/06/2018	12/06/2018	12/06/2018	12/06/2018
Date Tested :	12/06/2018	12/06/2018	12/06/2018	12/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 8950.400 N 31395.600 Final Level	Fill Area 2 E 8926.300 N 31377.500 Final Level	Fill Area 2 E 8916.500 N 31384.900 Final Level	Fill Area 2 E 8935.000 N 31399.000 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	8	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.520	-	-
Field Moisture Content (%) :	9.8	10.1	10.6	9.6
Hilf MDR Number :	247018	247019	247020	247021
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85	86	86	85
Field Wet Density (t/m³) :	2.113	2.082	2.104	2.091
Optimum Moisture Content (%) :	11.5	11.7	12.3	11.3
Moisture Variation :	1.8	1.7	1.8	1.7
Peak Converted Wet Density (t/m³) :	2.051	2.159*	2.103	2.021
Hilf Density Ratio (%) :	**103.0**	**96.5**	**100.0**	**103.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 56**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**22/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-337250**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247022	247023	247024	247025
Test Number :	186	187	188	189
Sampling Method :	-	-	-	-
Date Sampled :	12/06/2018	12/06/2018	12/06/2018	12/06/2018
Date Tested :	12/06/2018	12/06/2018	12/06/2018	12/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8545.426 N 31786.990 RL 64.922	Fill Area 1 E 8552.804 N 31786.512 RL 64.664	Fill Area 1 E 8551.670 N 31757.758 RL 65.231	Fill Area 1 E 8544.199 N 31754.577 RL 65.828
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.1	13.1	14.2	14.4
Hilf MDR Number :	247022	247023	247024	247025
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100.5	97	96	100
Field Wet Density (t/m³) :	2.060	2.100	2.050	2.045
Optimum Moisture Content (%) :	10.0	13.5	14.8	14.4
Moisture Variation :	-0.1	0.3	0.6	0.0
Peak Converted Wet Density (t/m³) :	2.033	2.077	1.967	2.029
Hilf Density Ratio (%) :	**101.5**	**101.0**	**104.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 57**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**26/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247157	247158	247159	247160
Test Number :	190	191	192	193
Sampling Method :	-	-	-	-
Date Sampled :	13/06/2018	13/06/2018	13/06/2018	13/06/2018
Date Tested :	13/06/2018	13/06/2018	13/06/2018	13/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 9099.800 N 31335.300 RL 47.300	Fill Area 2 E 9081.700 N 31319.400 RL 48.200	Fill Area 2 E 9067.000 N 31308.200 RL 48.800	Fill Area 2 E 9048.400 N 31294.800 RL 49.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	10	13	13	12
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.412	2.339	2.340	2.302
Field Moisture Content (%) :	9.8	10.1	11.5	10.2
Hilf MDR Number :	247157	247158	247159	247160
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85	84.5	86.5	90
Field Wet Density (t/m³) :	2.075	2.120	2.197	2.197
Optimum Moisture Content (%) :	11.6	12.0	13.3	11.3
Moisture Variation :	1.8	1.9	1.8	1.1
Peak Converted Wet Density (t/m³) :	2.171*	2.173*	2.19*	2.204*
Hilf Density Ratio (%) :	**95.5**	**97.5**	**100.5**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 58**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**26/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247161	247162	247163	247164
Test Number :	194	195	196	197
Sampling Method :	-	-	-	-
Date Sampled :	13/06/2018	13/06/2018	13/06/2018	13/06/2018
Date Tested :	13/06/2018	13/06/2018	13/06/2018	13/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8602.300 N 31743.000 RL 61.087	Fill Area 1 E 8618.500 N 31747.600 RL 61.000	Fill Area 1 E 8612.700 N 31776.400 RL 61.200	Fill Area 1 E 8584.800 N 31686.224 RL 65.400
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	10
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	2.331
Field Moisture Content (%) :	19.9	17.5	18.6	12.1
Hilf MDR Number :	247161	247162	247163	247164
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99.5	100	99.5	87
Field Wet Density (t/m³) :	2.019	2.051	2.056	2.115
Optimum Moisture Content (%) :	20.0	17.5	18.7	13.9
Moisture Variation :	0.1	0.0	0.1	1.8
Peak Converted Wet Density (t/m³) :	2.061	2.064	2.060	2.136*
Hilf Density Ratio (%) :	**98.0**	**99.5**	**100.0**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 59**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**26/06/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247165	247166		
Test Number :	198	199		
Sampling Method :	-	-		
Date Sampled :	13/06/2018	13/06/2018		
Date Tested :	13/06/2018	13/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Fill Area 1 E 8608.300 N 31680.500 RL 63.900	Fill Area 1 E 8627.600 N 31684.900 RL 62.200		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	150	150		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	2.368	-		
Field Moisture Content (%) :	17.7	13.7		
Hilf MDR Number :	247165	247166		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	99	87.5		
Field Wet Density (t/m³) :	2.050	2.091		
Optimum Moisture Content (%) :	17.9	15.6		
Moisture Variation :	0.2	1.9		
Peak Converted Wet Density (t/m³) :	2.103	2.075		
Hilf Density Ratio (%) :	**97.5**	**101.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 60**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247218	247219	247220	247221
Test Number :	200	201	202	203
Sampling Method :	-	-	-	-
Date Sampled :	14/06/2018	14/06/2018	14/06/2018	14/06/2018
Date Tested :	14/06/2018	14/06/2018	14/06/2018	14/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8611.900 N 31738.500 RL 61.400	Fill Area 1 E 8606.200 N 31727.400 RL 62.000	Fill Area 1 E 8641.900 N 31729.500 RL 57.500	Fill Area 1 E 8621.000 N 31725.300 RL 59.400
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	20.3	17.3	19.2	12.6
Hilf MDR Number :	247218	247219	247220	247221
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	106	106	105	90
Field Wet Density (t/m³) :	1.949	2.036	2.013	2.062
Optimum Moisture Content (%) :	19.1	16.3	18.3	14.0
Moisture Variation :	-1.2	-0.9	-0.8	1.5
Peak Converted Wet Density (t/m³) :	1.984	2.066	1.997	2.094
Hilf Density Ratio (%) :	**98.0**	**98.5**	**101.0**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	**MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 61**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247222	247223	247224	247225
Test Number :	204	205	206	207
Sampling Method :	-	-	-	-
Date Sampled :	14/06/2018	14/06/2018	14/06/2018	14/06/2018
Date Tested :	14/06/2018	14/06/2018	14/06/2018	14/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 9076.900 N 31320.900 RL 48.400 (Final Level)	Fill Area 2 E 9064.300 N 31294.000 RL 49.400 (Final Level)	Fill Area 2 E 9115.300 N 31345.700 Final Level	Fill Area 2 E 9134.900 N 31369.000 RL 47.500 (Final Level)
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	150	150	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	7	5	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.489	2.465	-
Field Moisture Content (%) :	11.2	8.6	10.3	12.2
Hilf MDR Number :	247222	247223	247224	247225
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	83.5	99	99	85.5
Field Wet Density (t/m³) :	2.107	2.159	2.159	2.076
Optimum Moisture Content (%) :	13.4	8.7	10.4	14.3
Moisture Variation :	2.2	0.1	0.1	2.1
Peak Converted Wet Density (t/m³) :	2.099	2.151*	2.138*	2.090
Hilf Density Ratio (%) :	**100.5**	**100.5**	**101.0**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	**MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.**			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 62**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247226	247227	247228	247229
Test Number :	208	209	210	211
Sampling Method :	-	-	-	-
Date Sampled :	14/06/2018	14/06/2018	14/06/2018	14/06/2018
Date Tested :	14/06/2018	14/06/2018	14/06/2018	14/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8603.500 N 31713.400 RL 57.700	Fill Area 1 E 8684.600 N 31722.300 RL 57.700	Fill Area 1 E 8666.600 N 31726.400 RL 58.500	Fill Area 1 E 8669.100 N 31713.400 RL 58.100
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	5	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.125	-	-	-
Field Moisture Content (%) :	15.8	14.9	12.5	14.0
Hilf MDR Number :	247226	247227	247228	247229
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	93.5	90.5	85	97
Field Wet Density (t/m³) :	2.177	2.060	2.049	2.061
Optimum Moisture Content (%) :	16.9	16.5	14.7	14.4
Moisture Variation :	1.1	1.6	2.2	0.5
Peak Converted Wet Density (t/m³) :	2.064*	2.054	2.061	2.059
Hilf Density Ratio (%) :	**105.5**	**100.5**	**99.5**	**100.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	**MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.**			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 63**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247230	247231	247232	247233
Test Number :	212	213	214	215
Sampling Method :	-	-	-	-
Date Sampled :	14/06/2018	14/06/2018	14/06/2018	14/06/2018
Date Tested :	14/06/2018	14/06/2018	14/06/2018	14/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 8969.200 N 31390.600 Final Level	Fill Area 2 E 8954.600 N 31381.000 RL 47.500	Fill Area 2 E 8954.300 N 31354.300 Final Level	Fill Area 2 E 8964.900 N 31344.000 RL 48.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	5	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	1.999	-	-	-
Field Moisture Content (%) :	11.6	11.7	11.6	8.7
Hilf MDR Number :	247230	247231	247232	247233
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	91.5	99	91.5	85.5
Field Wet Density (t/m³) :	2.168	2.085	2.106	2.093
Optimum Moisture Content (%) :	12.7	11.8	12.7	10.2
Moisture Variation :	1.1	0.1	1.1	1.5
Peak Converted Wet Density (t/m³) :	2.113*	2.140	2.111	2.112
Hilf Density Ratio (%) :	**102.5**	**97.5**	**100.0**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	**MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.**			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 64**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247234	247235		
Test Number :	216	217		
Sampling Method :	-	-		
Date Sampled :	14/06/2018	14/06/2018		
Date Tested :	14/06/2018	14/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Fill Area 2 E 8975.200 N 31335.500 Final Level	Fill Area 2 E 8985.400 N 31325.500 RL 48.000		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	150		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	5	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	2.094	-		
Field Moisture Content (%) :	9.3	9.4		
Hilf MDR Number :	247234	247235		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	87.5	98		
Field Wet Density (t/m³) :	2.119	2.087		
Optimum Moisture Content (%) :	10.6	9.6		
Moisture Variation :	1.4	0.2		
Peak Converted Wet Density (t/m³) :	2.052*	2.092		
Hilf Density Ratio (%) :	**103.0**	**100.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	**MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.**			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 65**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247264	247265	247266	247267
Test Number :	218	219	220	221
Sampling Method :	-	-	-	-
Date Sampled :	15/06/2018	15/06/2018	15/06/2018	15/06/2018
Date Tested :	15/06/2018	15/06/2018	15/06/2018	15/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 8978.100 N 31364.700 RL 48.600	Fill Area 2 E 8984.700 N 31376.600 RL 48.500	Fill Area 2 E 9007.3 N 31398.2 RL 48.300	Fill Area 2 E 8995.900 N 31386.000 RL 48.200
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	6.4	10.4	8.7	10.4
Hilf MDR Number :	247264	247265	247266	247267
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	104	103.5	100.5	102.5
Field Wet Density (t/m³) :	2.104	2.129	2.105	2.089
Optimum Moisture Content (%) :	6.1	10.0	8.7	10.1
Moisture Variation :	-0.2	-0.3	0.0	-0.2
Peak Converted Wet Density (t/m³) :	2.146	2.164	2.137	2.154
Hilf Density Ratio (%) :	**98.0**	**98.5**	**98.5**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 66**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247268	247269	247270	247271
Test Number :	222	223	224	225
Sampling Method :	-	-	-	-
Date Sampled :	15/06/2018	15/06/2018	15/06/2018	15/06/2018
Date Tested :	15/06/2018	15/06/2018	15/06/2018	15/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8650.000 N 31730.000 RL 59.600	Fill Area 1 E 8668.000 N 31729.000 RL 58.600	Fill Area 1 E 8681.000 N 31727.000 RL 58.200	Fill Area 1 E 8695.000 N 31726.000 RL 57.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	17.4	15.4	17.5	18.1
Hilf MDR Number :	247268	247269	247270	247271
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100.5	98.5	100.5	100.5
Field Wet Density (t/m³) :	2.016	2.046	2.069	2.047
Optimum Moisture Content (%) :	17.3	15.6	17.4	18.0
Moisture Variation :	-0.1	0.2	-0.1	-0.1
Peak Converted Wet Density (t/m³) :	2.058	2.049	2.071	2.058
Hilf Density Ratio (%) :	**98.0**	**100.0**	**100.0**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 67**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247272	247273	247274	247275
Test Number :	226	227	228	229
Sampling Method :	-	-	-	-
Date Sampled :	15/06/2018	15/06/2018	15/06/2018	15/06/2018
Date Tested :	15/06/2018	15/06/2018	15/06/2018	15/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8705.000 N 31725.000 RL 57.300	Fill Area 1 E 8717.000 N 31724.000 RL 56.900	Fill Area 1 E 8726.000 N 31723.000 RL 56.600	Fill Area 1 E 8736.200 N 31723.000 RL 56.200
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	15.0	15.8	14.7	13.1
Hilf MDR Number :	247272	247273	247274	247275
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100.5	91.5	101	97
Field Wet Density (t/m³) :	2.094	2.012	2.096	2.100
Optimum Moisture Content (%) :	14.9	17.3	14.6	13.5
Moisture Variation :	-0.1	1.5	-0.1	0.3
Peak Converted Wet Density (t/m³) :	2.114	2.084	2.110	2.076
Hilf Density Ratio (%) :	**99.0**	**96.5**	**99.5**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 68**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247276	247277	247278	247279
Test Number :	230	231	232	233
Sampling Method :	-	-	-	-
Date Sampled :	15/06/2018	15/06/2018	15/06/2018	15/06/2018
Date Tested :	15/06/2018	15/06/2018	15/06/2018	15/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8600.700 N 31685.000 RL 64.500	Fill Area 1 E 8588.600 N 31692.000 RL 65.200	Fill Area 1 E 8603.300 N 31697.000 RL 63.900	Fill Area 1 E 8629.800 N 31697.100 RL 61.800
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	14.1	12.2	9.6	13.6
Hilf MDR Number :	247276	247277	247278	247279
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	96.5	92	100.5
Field Wet Density (t/m³) :	2.101	2.080	2.061	2.059
Optimum Moisture Content (%) :	14.4	12.6	10.4	13.5
Moisture Variation :	0.3	0.5	0.9	-0.1
Peak Converted Wet Density (t/m³) :	2.137	2.125	2.141	2.128
Hilf Density Ratio (%) :	**98.5**	**98.0**	**96.5**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 69**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247301	247302	247303	247304
Test Number :	234	235	236	237
Sampling Method :	-	-	-	-
Date Sampled :	16/06/2018	16/06/2018	16/06/2018	16/06/2018
Date Tested :	16/06/2018	16/06/2018	16/06/2018	16/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8639.000 N 31693.000 RL 61.300	Fill Area 1 E 8625.000 N 31694.000 RL 62.100	Fill Area 1 E 8612.200 N 31695.000 RL 63.300	Fill Area 1 E 8639.000 N 31703.600 RL 60.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	31.2	17.6	13.2	13.6
Hilf MDR Number :	247301	247302	247303	247304
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	102.5	101.5	97.5	103
Field Wet Density (t/m³) :	2.143	2.080	2.095	2.100
Optimum Moisture Content (%) :	30.5	17.4	13.6	13.2
Moisture Variation :	-0.6	-0.2	0.3	-0.5
Peak Converted Wet Density (t/m³) :	2.086	2.060	2.027	2.045
Hilf Density Ratio (%) :	**102.5**	**101.0**	**103.5**	**102.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	**MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 70**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247305	247306		
Test Number :	238	239		
Sampling Method :	-	-		
Date Sampled :	16/06/2018	16/06/2018		
Date Tested :	16/06/2018	16/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Fill Area 1 E 8620.000 N 31704.000 RL 62.000	Fill Area 1 E 8603.000 N 31704.000 RL 63.200		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	150	150		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	17.7	28.1		
Hilf MDR Number :	247305	247306		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	105	101.5		
Field Wet Density (t/m³) :	2.062	2.100		
Optimum Moisture Content (%) :	16.9	27.6		
Moisture Variation :	-0.8	-0.5		
Peak Converted Wet Density (t/m³) :	2.072	2.090		
Hilf Density Ratio (%) :	**99.5**	**100.5**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	**MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 71**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247349	247350	247351	247352
Test Number :	240	241	242	243
Sampling Method :	-	-	-	-
Date Sampled :	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Date Tested :	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8629.000 N 31699.000 RL 61.800	Fill Area 1 E 8644.000 N 31699.000 RL 60.800	Fill Area 1 E 8660.900 N 31700.000 RL 60.000	Fill Area 1 E 8671.000 N 31701.000 RL 59.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	10
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	2.119
Field Moisture Content (%) :	11.2	12.0	12.8	12.8
Hilf MDR Number :	247349	247350	247351	247352
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	88	88.5	99.5	99.5
Field Wet Density (t/m³) :	2.094	2.051	2.138	2.170
Optimum Moisture Content (%) :	12.8	13.5	12.9	12.9
Moisture Variation :	1.6	1.6	0.1	0.1
Peak Converted Wet Density (t/m³) :	2.116	2.102	2.136	2.141*
Hilf Density Ratio (%) :	**99.0**	**97.5**	**100.0**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 72**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247353	247354	247355	247356
Test Number :	244	245	246	247
Sampling Method :	-	-	-	-
Date Sampled :	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Date Tested :	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8684.000 N 31701.000 RL 58.900	Fill Area 1 E 8867.200 N 31652.000 RL 53.000	Fill Area 1 E 8853.000 N 31677.000 RL 52.600	Fill Area 1 E 8876.000 N 31670.000 RL 52.200
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	10	9
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	2.035	2.096
Field Moisture Content (%) :	12.1	10.3	9.3	10.4
Hilf MDR Number :	247353	247354	247355	247356
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	86.5	88	86.5
Field Wet Density (t/m³) :	2.060	2.070	2.156	2.146
Optimum Moisture Content (%) :	12.3	11.9	10.6	12.0
Moisture Variation :	0.2	1.7	1.3	1.7
Peak Converted Wet Density (t/m³) :	2.108	2.095	2.133*	2.132*
Hilf Density Ratio (%) :	**97.5**	**99.0**	**101.0**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 73**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247357	247358	247359	247360
Test Number :	248	249	250	251
Sampling Method :	-	-	-	-
Date Sampled :	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Date Tested :	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 9066.940 N 31451.180 RL 47.310	E 9056.940 N 31457.700 RL 47.450	E 8649.000 N 31720.000 RL 59.800	E 8659.000 N 31720.000 RL 59.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.2	13.5	13.0	12.7
Hilf MDR Number :	247357	247358	247359	247360
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	94.5	96	99	90.5
Field Wet Density (t/m³) :	2.051	2.065	2.078	2.120
Optimum Moisture Content (%) :	11.8	14.0	13.2	14.0
Moisture Variation :	0.7	0.6	0.1	1.3
Peak Converted Wet Density (t/m³) :	2.097	2.157	2.146	2.101
Hilf Density Ratio (%) :	**98.0**	**95.5**	**97.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 74**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247361	247362	247363	247364
Test Number :	252	253	254	255
Sampling Method :	-	-	-	-
Date Sampled :	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Date Tested :	18/06/2018	18/06/2018	18/06/2018	18/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8669.000 N 31721.000 RL 58.800	E 8678.600 N 31721.000 RL 58.500	E 8694.000 N 31722.000 RL 57.900	E 8837.400 N 31667.000 RL 54.000
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.4	11.3	11.0	9.9
Hilf MDR Number :	247361	247362	247363	247364
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100	88	85	85.5
Field Wet Density (t/m³) :	2.077	2.132	2.121	2.121
Optimum Moisture Content (%) :	11.4	12.8	12.9	11.6
Moisture Variation :	0.0	1.6	1.9	1.7
Peak Converted Wet Density (t/m³) :	2.087	2.119	2.138	2.128
Hilf Density Ratio (%) :	**99.5**	**100.5**	**99.0**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 75**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247365	247366		
Test Number :	256	257		
Sampling Method :	-	-		
Date Sampled :	18/06/2018	18/06/2018		
Date Tested :	18/06/2018	18/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 8856.000 N 31664.300 RL 53.200	E 8879.100 N 31655.600 RL 53.200		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	11.9	8.8		
Hilf MDR Number :	247365	247366		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	99	83.5		
Field Wet Density (t/m³) :	2.085	2.099		
Optimum Moisture Content (%) :	12.0	10.6		
Moisture Variation :	0.1	1.8		
Peak Converted Wet Density (t/m³) :	2.175	2.055		
Hilf Density Ratio (%) :	**96.0**	**102.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY		
Remarks :	-			

NATA WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 76**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247465	247466	247467	247468
Test Number :	258	259	260	261
Sampling Method :	-	-	-	-
Date Sampled :	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Date Tested :	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8589.000 N 31763.000 RL 65.600	Fill Area 1 E 8594.000 N 31672.000 RL 65.300	Fill Area 1 E 8603.300 N 31671.200 RL 65.000	Fill Area 1 E 8609.900 N 31670.600 RL 64.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	15.0	13.9	13.7	15.4
Hilf MDR Number :	247465	247466	247467	247468
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	99.5	97.5	102.5
Field Wet Density (t/m³) :	2.092	2.112	2.093	2.125
Optimum Moisture Content (%) :	15.3	13.9	14.1	15.0
Moisture Variation :	0.3	0.0	0.3	-0.3
Peak Converted Wet Density (t/m³) :	2.133	2.136	2.112	2.160
Hilf Density Ratio (%) :	**98.0**	**99.0**	**99.0**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 77**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247469	247470	247471	247472
Test Number :	262	263	264	265
Sampling Method :	-	-	-	-
Date Sampled :	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Date Tested :	19/06/2018	19/06/2018	19/06/2018	19/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8619.800 N 31669.000 RL 64.000	Fill Area 1 E 8841.000 N 31683.000 RL 54.000	Fill Area 1 E 8858.000 N 31677.300 RL 53.700	Fill Area 1 E 8872.500 N 31670.900 RL 53.400
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	14.3	10.0	9.9	9.9
Hilf MDR Number :	247469	247470	247471	247472
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100.5	81	84	84
Field Wet Density (t/m³) :	2.064	2.113	2.133	2.182
Optimum Moisture Content (%) :	14.3	12.4	11.8	11.8
Moisture Variation :	0.0	2.3	1.9	1.9
Peak Converted Wet Density (t/m³) :	2.140	2.118	2.103	2.111
Hilf Density Ratio (%) :	**96.5**	**100.0**	**101.5**	**103.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 78**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**02/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247473	247474	247475	
Test Number :	266	267	268	
Sampling Method :	-	-	-	
Date Sampled :	19/06/2018	19/06/2018	19/06/2018	
Date Tested :	19/06/2018	19/06/2018	19/06/2018	
Material Type :	**General Fill**	**General Fill**	**General Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	-	-	-	
Sample Location :	E 8636.000 N 31704.000 RL 61.900	E 8629.600 N 31704.700 RL 62.300	E 8616.000 N 31704.400 RL 63.000	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	150	150	150	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	-	-	
Field Moisture Content (%) :	11.4	10.2	10.4	
Hilf MDR Number :	247473	247474	247475	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	85.5	85	84.5	
Field Wet Density (t/m³) :	2.108	2.214	2.099	
Optimum Moisture Content (%) :	13.3	12.0	12.3	
Moisture Variation :	1.9	1.9	1.9	
Peak Converted Wet Density (t/m³) :	2.122	2.121	2.103	
Hilf Density Ratio (%) :	**99.5**	**104.5**	**100.0**	
Minimum Specification :	95	95	95	
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	
Site Selection :	-	-	-	
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 79**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**6/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247585	247586	247587	247588
Test Number :	269	270	271	272
Sampling Method :	-	-	-	-
Date Sampled :	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Date Tested :	20/06/2018	20/06/2018	20/06/2018	20/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 8874.500 N 31556.900 RL 58.200 / Final Level	Fill Area 2 E 8911.000 N 31358.000 Final Level	Fill Area 2 E 8952.800 N 31497.000 Final Level	Fill Area 2 E 8974.000 N 31473.000 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.0	7.1	10.1	12.2
Hilf MDR Number :	247585	247586	247587	247588
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	80.5	82.5	82	87.5
Field Wet Density (t/m³) :	2.141	2.120	2.082	2.056
Optimum Moisture Content (%) :	11.2	8.6	12.3	13.9
Moisture Variation :	2.2	1.6	2.2	1.7
Peak Converted Wet Density (t/m³) :	2.150	2.083	2.153	2.071
Hilf Density Ratio (%) :	**99.5**	**102.0**	**96.5**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Gravelly CLAY, brown	Sandy Gravelly CLAY, brown	Sandy Gravelly CLAY, brown	Sandy Gravelly CLAY, brown
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 80**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**6/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247748	247749	247750	247751
Test Number :	273	274	275	276
Sampling Method :	-	-	-	-
Date Sampled :	23/06/2018	23/06/2018	23/06/2018	23/06/2018
Date Tested :	23/06/2018	23/06/2018	23/06/2018	23/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8623.000 N 31673.000 RL 63.700	E 8614.500 N 31674.400 RL 64.300	E 8668.000 N 31672.000 RL 61.800	E 8659.500 N 31671.900 RL 62.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.0	13.0	11.6	11.2
Hilf MDR Number :	247748	247749	247750	247751
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	97.5	80.5	86
Field Wet Density (t/m³) :	2.118	2.090	2.102	2.088
Optimum Moisture Content (%) :	13.2	13.4	14.4	13.1
Moisture Variation :	0.2	0.3	2.7	1.9
Peak Converted Wet Density (t/m³) :	2.117	2.061	2.112	2.116
Hilf Density Ratio (%) :	**100.0**	**101.5**	**99.5**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 81**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**6/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247752	247753		
Test Number :	277	278		
Sampling Method :	-	-		
Date Sampled :	23/06/2018	23/06/2018		
Date Tested :	23/06/2018	23/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 8652.000 N 31672.000 RL 62.500	E 8642.200 N 31672.000 RL 63.000		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	10.3	11.0		
Hilf MDR Number :	247752	247753		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	86	88.5		
Field Wet Density (t/m³) :	2.074	2.151		
Optimum Moisture Content (%) :	12.0	12.4		
Moisture Variation :	1.7	1.4		
Peak Converted Wet Density (t/m³) :	2.146	2.132		
Hilf Density Ratio (%) :	**96.5**	**101.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 82**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**6/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247831	247832	247833	247834
Test Number :	279	280	281	282
Sampling Method :	-	-	-	-
Date Sampled :	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date Tested :	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8657.900 N 31692.000 RL 61.600	E 8667.000 N 31691.000 RL 61.100	E 8678.000 N 31691.000 RL 60.900	E 8695.200 N 31690.000 RL 60.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.0	11.4	10.9	11.3
Hilf MDR Number :	247831	247832	247833	247834
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84	88	87.5	88
Field Wet Density (t/m³) :	2.068	2.057	2.076	2.062
Optimum Moisture Content (%) :	13.1	13.0	12.5	12.8
Moisture Variation :	2.1	1.6	1.6	1.6
Peak Converted Wet Density (t/m³) :	2.124	2.112	2.107	2.095
Hilf Density Ratio (%) :	**97.5**	**97.5**	**98.5**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 83**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**6/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247835	247836	247837	247838
Test Number :	283	284	285	286
Sampling Method :	-	-	-	-
Date Sampled :	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Date Tested :	25/06/2018	25/06/2018	25/06/2018	25/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8704.900 N 31690.000 RL 60.100	E 8701.500 N 31701.200 RL 59.500	E 8711.900 N 31701.000 RL 58.900	E 8683.400 N 31702.000 RL 60.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	8	-	10	9
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.382		2.174	2.270
Field Moisture Content (%) :	10.3	9.3	9.7	11.2
Hilf MDR Number :	247835	247836	247837	247838
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	87	81.5	84	85
Field Wet Density (t/m³) :	2.107	2.062	2.131	2.160
Optimum Moisture Content (%) :	11.8	11.4	11.6	13.2
Moisture Variation :	1.6	2.1	1.9	2.0
Peak Converted Wet Density (t/m³) :	2.136*	2.033	2.12*	2.13*
Hilf Density Ratio (%) :	**98.5**	**101.5**	**100.5**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 84**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**6/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247839	247840		
Test Number :	287	288		
Sampling Method :	-	-		
Date Sampled :	25/06/2018	25/06/2018		
Date Tested :	25/06/2018	25/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 8690.500 N 31701.000 RL 59.800	E 8722.000 N 31701.400 RL 58.600		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	9.3	9.5		
Hilf MDR Number :	247839	247840		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	78.5	85		
Field Wet Density (t/m³) :	2.082	2.072		
Optimum Moisture Content (%) :	11.8	11.2		
Moisture Variation :	2.6	1.7		
Peak Converted Wet Density (t/m³) :	2.072	2.064		
Hilf Density Ratio (%) :	**100.5**	**100.5**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	-	-		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 85**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**12/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247961	247962	247963	247964
Test Number :	289	290	291	292
Sampling Method :	-	-	-	-
Date Sampled :	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Date Tested :	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8613.000 N 31672.000 RL 64.800	E 8625.000 N 31693.000 RL 64.100	E 8597.100 N 31676.000 RL 65.200	E 8604.000 N 31692.000 RL 64.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	6	6	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.342	2.321	-	-
Field Moisture Content (%) :	13.3	10.1	10.2	7.9
Hilf MDR Number :	247961	247962	247963	247964
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	118	102	102.5	74
Field Wet Density (t/m³) :	2.177	2.133	2.074	2.131
Optimum Moisture Content (%) :	11.3	9.9	10.0	10.6
Moisture Variation :	-2.1	-0.2	-0.2	2.8
Peak Converted Wet Density (t/m³) :	2.161*	2.161*	2.143	2.082
Hilf Density Ratio (%) :	**100.5**	**98.5**	**97.0**	**102.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 86**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**12/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247965	247966	247967	247968
Test Number :	293	294	295	296
Sampling Method :	-	-	-	-
Date Sampled :	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Date Tested :	26/06/2018	26/06/2018	26/06/2018	26/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8682.000 N 31672.000 RL 61.900	E 8693.200 N 31672.000 RL 61.600	E 8657.900 N 31692.600 RL 61.600	E 8689.300 N 31681.000 RL 61.200
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.4	13.4	12.8	8.6
Hilf MDR Number :	247965	247966	247967	247968
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	104	103.5	106.5	108
Field Wet Density (t/m³) :	2.102	2.122	2.117	2.084
Optimum Moisture Content (%) :	10.0	12.9	12.0	8.0
Moisture Variation :	-0.5	-0.5	-0.8	-0.7
Peak Converted Wet Density (t/m³) :	2.156	2.157	2.151	2.150
Hilf Density Ratio (%) :	**97.5**	**98.5**	**98.5**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 87**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**12/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	247969			
Test Number :	297			
Sampling Method :	-			
Date Sampled :	26/06/2018			
Date Tested :	26/06/2018			
Material Type :	**General Fill**			
Material Source :	**On Site**			
Lot Number :	-			
Sample Location :	E 8675.000 N 31672.700 RL 62.100			
Test Depth (mm) :	150			
Layer Depth (mm) :	-			
Maximum Size (mm) :	19			
Oversize Wet (%) :	-			
Oversize Dry (%) :	-			
Oversize Density (t/m³) :	-			
Field Moisture Content (%) :	8.2			
Hilf MDR Number :	247969			
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1 & 5.7.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	80			
Field Wet Density (t/m³) :	2.102			
Optimum Moisture Content (%) :	10.3			
Moisture Variation :	2.1			
Peak Converted Wet Density (t/m³) :	2.125			
Hilf Density Ratio (%) :	**99.0**			
Minimum Specification :	95			
Moisture Specification :	-2% to +3%			
Site Selection :	-			
Soil Description :	Sandy CLAY			
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 88**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**12/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248040	248041	248042	248043
Test Number :	298	299	300	301
Sampling Method :	-	-	-	-
Date Sampled :	27/06/2018	27/06/2018	27/06/2018	27/06/2018
Date Tested :	27/06/2018	27/06/2018	27/06/2018	27/06/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 8627.000 N 31684.000 RL 64.000	Fill Area 2 E 8644.000 N 31681.500 RL 63.000	Fill Area 2 E 8643.100 N 31691.500 RL 63.200	Fill Area 2 E 8614.700 N 31692.800 RL 64.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	14.4	12.8	16.0	15.8
Hilf MDR Number :	248040	248041	248042	248043
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	104.5	87.5	105	106
Field Wet Density (t/m³) :	2.122	2.106	2.066	2.148
Optimum Moisture Content (%) :	13.8	14.6	15.2	14.9
Moisture Variation :	-0.6	1.8	-0.8	-0.9
Peak Converted Wet Density (t/m³) :	2.127	2.088	2.140	2.134
Hilf Density Ratio (%) :	**100.0**	**101.0**	**96.5**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 89**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**12/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248044	248045	248046	
Test Number :	302	303	304	
Sampling Method :	-	-	-	
Date Sampled :	27/06/2018	27/06/2018	27/06/2018	
Date Tested :	27/06/2018	27/06/2018	27/06/2018	
Material Type :	**General Fill**	**General Fill**	**General Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	-	-	-	
Sample Location :	Fill Area 2 E 9144.900 N 31397.000 RL 43.700	Fill Area 2 E 9178.000 N 31410.100 RL 43.300	Fill Area 2 E 9170.000 N 31424.000 RL 43.400	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	-	-	
Field Moisture Content (%) :	11.8	11.3	8.6	
Hilf MDR Number :	248044	248045	248046	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	87.5	86.5	79.5	
Field Wet Density (t/m³) :	2.053	2.085	2.059	
Optimum Moisture Content (%) :	13.5	13.1	10.8	
Moisture Variation :	1.7	1.8	2.3	
Peak Converted Wet Density (t/m³) :	2.123	2.155	2.081	
Hilf Density Ratio (%) :	**96.5**	**97.0**	**99.0**	
Minimum Specification :	95	95	95	
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	
Site Selection :	-	-	-	
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 90**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**12/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248047			
Test Number :	305			
Sampling Method :	-			
Date Sampled :	27/06/2018			
Date Tested :	27/06/2018			
Material Type :	**General Fill**			
Material Source :	**On Site**			
Lot Number :	-			
Sample Location :	Fill Area (Park) E 9071.000 N 31712.000 RL 47.600			
Test Depth (mm) :	150			
Layer Depth (mm) :	-			
Maximum Size (mm) :	19			
Oversize Wet (%) :	-			
Oversize Dry (%) :	-			
Oversize Density (t/m³) :	-			
Field Moisture Content (%) :	9.4			
Hilf MDR Number :	248047			
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1 & 5.7.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	86			
Field Wet Density (t/m³) :	2.127			
Optimum Moisture Content (%) :	11.0			
Moisture Variation :	1.5			
Peak Converted Wet Density (t/m³) :	2.166			
Hilf Density Ratio (%) :	**98.0**			
Minimum Specification :	95			
Moisture Specification :	-2% to +3%			
Site Selection :	-			
Soil Description :	Sandy CLAY			
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 91**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**12/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248048	248049		
Test Number :	306	307		
Sampling Method :	-	-		
Date Sampled :	27/06/2018	27/06/2018		
Date Tested :	27/06/2018	27/06/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Fill Area 1 E 9047.000 N 31715.000 RL 47.900	Fill Area 1 E 9018.000 N 31716.000 RL 48.000		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	9.9	9.5		
Hilf MDR Number :	248048	248049		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	86.5	85		
Field Wet Density (t/m³) :	2.113	2.177		
Optimum Moisture Content (%) :	11.4	11.2		
Moisture Variation :	1.5	1.8		
Peak Converted Wet Density (t/m³) :	2.158	2.173		
Hilf Density Ratio (%) :	**98.0**	**100.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 92**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248321	248322	248323	248324
Test Number :	308	309	310	311
Sampling Method :	-	-	-	-
Date Sampled :	2/07/2018	2/07/2018	2/07/2018	2/07/2018
Date Tested :	2/07/2018	2/07/2018	2/07/2018	2/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8619.000 N 31755.000 RL 60.658	E 8639.000 N 31757.000 RL 59.395	E 8656.000 N 31758.000 RL 58.335	E 8596.000 N 31692.000 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	12.7	19.0	11.3	12.2
Hilf MDR Number :	248321	248322	248323	248324
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	102.5	101.5	92	99
Field Wet Density (t/m³) :	2.096	2.026	2.088	1.978
Optimum Moisture Content (%) :	12.4	18.7	12.3	12.3
Moisture Variation :	-0.3	-0.2	1.0	0.1
Peak Converted Wet Density (t/m³) :	2.114	2.046	2.127	2.059
Hilf Density Ratio (%) :	**99.0**	**99.0**	**98.0**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 93**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248325	248326	248327	248328
Test Number :	312	313	314	315
Sampling Method :	-	-	-	-
Date Sampled :	2/07/2018	2/07/2018	2/07/2018	2/07/2018
Date Tested :	2/07/2018	2/07/2018	2/07/2018	2/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8579.000 N 31690.000 Final Level	E 8669.000 N 31790.000 RL 57.182	E 8693.000 N 31795.000 RL 55.825	E 8720.000 N 31797.000 RL 54.037
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.8	9.7	10.4	10.1
Hilf MDR Number :	248325	248326	248327	248328
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	97	85	88.5	83.5
Field Wet Density (t/m³) :	1.985	2.106	2.097	2.195
Optimum Moisture Content (%) :	12.2	11.4	11.7	12.1
Moisture Variation :	0.3	1.8	1.3	2.0
Peak Converted Wet Density (t/m³) :	2.072	2.152	2.151	2.183
Hilf Density Ratio (%) :	**96.0**	**98.0**	**97.5**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 94**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248329	248330	248331	
Test Number :	316	317	318	
Sampling Method :	-	-	-	
Date Sampled :	2/07/2018	2/07/2018	2/07/2018	
Date Tested :	2/07/2018	2/07/2018	2/07/2018	
Material Type :	**General Fill**	**General Fill**	**General Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	-	-	-	
Sample Location :	E 8650.000 N 31772.000 RL 58.617	E 8678.000 N 31776.000 RL 57.444	E 8698.000 N 31779.000 RL 56.241	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	-	-	
Field Moisture Content (%) :	12.0	10.3	10.4	
Hilf MDR Number :	248329	248330	248331	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	101	98.5	102.5	
Field Wet Density (t/m³) :	2.058	2.166	2.088	
Optimum Moisture Content (%) :	11.9	10.4	10.2	
Moisture Variation :	-0.1	0.1	-0.2	
Peak Converted Wet Density (t/m³) :	2.129	2.189	2.156	
Hilf Density Ratio (%) :	**96.5**	**99.0**	**97.0**	
Minimum Specification :	95	95	95	
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	
Site Selection :	-	-	-	
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 95**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248415	248416	248417	248418
Test Number :	319	320	321	322
Sampling Method :	-	-	-	-
Date Sampled :	3/07/2018	3/07/2018	3/07/2018	3/07/2018
Date Tested :	3/07/2018	3/07/2018	3/07/2018	3/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8700.000 N 31763.000 RL 56.538	Fill Area 1 E 8717.300 N 31765.000 RL 55.474	Fill Area 1 E 8735.000 N 31767.000 RL 54.324	Fill Area 1 E 8613.000 N 31689.000 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.9	9.9	9.8	12.2
Hilf MDR Number :	248415	248416	248417	248418
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	82.5	90.5	82	94
Field Wet Density (t/m³) :	2.086	2.097	2.081	2.109
Optimum Moisture Content (%) :	12.0	10.9	11.9	13.0
Moisture Variation :	2.1	1.0	2.1	0.8
Peak Converted Wet Density (t/m³) :	2.149	2.158	2.118	2.184
Hilf Density Ratio (%) :	**97.0**	**97.0**	**98.0**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 96**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248419	248420	248421	248422
Test Number :	323	324	325	326
Sampling Method :	-	-	-	-
Date Sampled :	3/07/2018	3/07/2018	3/07/2018	3/07/2018
Date Tested :	3/07/2018	3/07/2018	3/07/2018	3/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8627.000 N 31629.000 Final Level	E 8639.000 N 31690.000 Final Level	E 8661.000 N 31768.000 RL 58.027	E 8675.000 N 31770.000 RL 57.378
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.5	9.5	10.7	11.7
Hilf MDR Number :	248419	248420	248421	248422
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84	83	81	84.5
Field Wet Density (t/m³) :	2.075	2.110	2.072	2.078
Optimum Moisture Content (%) :	12.5	11.5	13.2	13.9
Moisture Variation :	2.0	2.0	2.5	2.1
Peak Converted Wet Density (t/m³) :	2.127	2.146	2.028	2.077
Hilf Density Ratio (%) :	**97.5**	**98.5**	**102.0**	**100.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 97**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248423	248424		
Test Number :	327	328		
Sampling Method :	-	-		
Date Sampled :	3/07/2018	3/07/2018		
Date Tested :	3/07/2018	3/07/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 8699.000 N 31775.000 RL 56.145	E 8720.000 N 31777.000 RL 54.461		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	11.5	12.2		
Hilf MDR Number :	248423	248424		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	84	93.5		
Field Wet Density (t/m³) :	2.185	2.192		
Optimum Moisture Content (%) :	13.7	13.0		
Moisture Variation :	2.2	0.8		
Peak Converted Wet Density (t/m³) :	2.121	2.130		
Hilf Density Ratio (%) :	**103.0**	**103.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 98**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248589	248590	248591	248592
Test Number :	329	330	331	332
Sampling Method :	-	-	-	-
Date Sampled :	4/07/2018	4/07/2018	4/07/2018	4/07/2018
Date Tested :	4/07/2018	4/07/2018	4/07/2018	4/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8704.910 N 31759.740 RL 57.12	Fill Area 1 E 8690.750 N 31760.750 RL 57.78	Fill Area 1 E 8707.080 N 31796.110 RL 55.870	Fill Area 1 E 8693.860 N 31794.000 RL 56.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	14.3	13.5	13.4	14.2
Hilf MDR Number :	248589	248590	248591	248592
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	96.5	98	96	88.5
Field Wet Density (t/m³) :	2.024	2.082	2.095	2.065
Optimum Moisture Content (%) :	14.8	13.8	13.9	16.0
Moisture Variation :	0.5	0.3	0.6	1.8
Peak Converted Wet Density (t/m³) :	2.080	2.087	2.141	2.029
Hilf Density Ratio (%) :	**97.5**	**100.0**	**98.0**	**102.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 99**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**23/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248593	248594	248595	248596
Test Number :	333	334	335	336
Sampling Method :	-	-	-	-
Date Sampled :	4/07/2018	4/07/2018	4/07/2018	4/07/2018
Date Tested :	4/07/2018	4/07/2018	4/07/2018	4/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8683.580 N 31793.000 RL 56.980	E 8613.000 N 31761.000 RL 61.360	E 8626.510 N 31762.000 RL 60.830	E 8640.000 N 31762.000 RL 60.120
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	16.8	14.9	12.8	13.4
Hilf MDR Number :	248593	248594	248595	248596
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99.5	98	90	88.5
Field Wet Density (t/m³) :	2.053	2.044	2.000	1.973
Optimum Moisture Content (%) :	16.9	15.2	14.2	15.1
Moisture Variation :	0.1	0.3	1.5	1.7
Peak Converted Wet Density (t/m³) :	2.080	2.046	1.994	1.985
Hilf Density Ratio (%) :	**98.5**	**100.0**	**100.5**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 100**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**27/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248830	248831	248832	248833
Test Number :	337	338	339	340
Sampling Method :	-	-	-	-
Date Sampled :	9/07/2018	9/07/2018	9/07/2018	9/07/2018
Date Tested :	9/07/2018	9/07/2018	9/07/2018	9/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8693.730 N 31786.170 RL 57.26	Fill Area 1 E 8674.500 N 31783.380 RL 58.31	Fill Area 1 E 8652.560 N 31782.700 RL 59.33	Fill Area 1 E 8629.910 N 31781.820 RL 60.410
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	9	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.522	-	-
Field Moisture Content (%) :	11.3	11.2	13.1	11.9
Hilf MDR Number :	248830	248831	248832	248833
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	72	84.5	100.5	99
Field Wet Density (t/m³) :	2.114	2.139	2.099	2.130
Optimum Moisture Content (%) :	15.7	13.2	13.0	12.0
Moisture Variation :	4.3	2.0	-0.1	0.1
Peak Converted Wet Density (t/m³) :	2.090	2.126*	2.116	2.094
Hilf Density Ratio (%) :	**101.0**	**100.5**	**99.0**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 101**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**27/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248834	248835	248836	248837
Test Number :	341	342	343	344
Sampling Method :	-	-	-	-
Date Sampled :	9/07/2018	9/07/2018	9/07/2018	9/07/2018
Date Tested :	9/07/2018	9/07/2018	9/07/2018	9/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8655.350 N 31773.510 RL 59.390	Fill Area 1 E 8645.100 N 31773.050 RL 60.000	Fill Area 1 E 8637.530 N 31773.530 RL 60.510	Fill Area 1 E 8627.840 N 31773.900 RL 60.910
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	11	14	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.512	2.524	-
Field Moisture Content (%) :	11.0	9.7	9.9	12.9
Hilf MDR Number :	248834	248835	248836	248837
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	80	82.5	96	84
Field Wet Density (t/m³) :	2.103	2.123	2.112	2.094
Optimum Moisture Content (%) :	13.7	11.7	10.3	15.3
Moisture Variation :	2.6	2.1	0.4	2.3
Peak Converted Wet Density (t/m³) :	2.098	2.177*	2.205*	2.142
Hilf Density Ratio (%) :	**100.0**	**97.5**	**96.0**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 102**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**27/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248838	248839	248840	248841
Test Number :	345	346	347	348
Sampling Method :	-	-	-	-
Date Sampled :	9/07/2018	9/07/2018	9/07/2018	9/07/2018
Date Tested :	9/07/2018	9/07/2018	9/07/2018	9/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 2 E 9145.000 N 31422.000 RL 44.600	Fill Area 2 E 9162.000 N 31406.000 RL 44.300	Fill Area 2 E 9127.000 N 31407.000 RL 45.400	Fill Area 2 E 9143.800 N 31393.500 RL 45.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.3	11.6	11.9	11.8
Hilf MDR Number :	248838	248839	248840	248841
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	80.5	91	85	85.5
Field Wet Density (t/m³) :	2.093	2.103	2.086	2.106
Optimum Moisture Content (%) :	12.8	12.7	14.0	13.8
Moisture Variation :	2.6	1.1	2.1	2.0
Peak Converted Wet Density (t/m³) :	2.021	2.113	2.092	2.093
Hilf Density Ratio (%) :	**103.5**	**99.5**	**99.5**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 103**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**27/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248842			
Test Number :	349			
Sampling Method :	-			
Date Sampled :	9/07/2018			
Date Tested :	9/07/2018			
Material Type :	**General Fill**			
Material Source :	**On Site**			
Lot Number :	-			
Sample Location :	Fill Area 2 E 9153.000 N 31403.000 RL 45.300			
Test Depth (mm) :	150			
Layer Depth (mm) :	-			
Maximum Size (mm) :	19			
Oversize Wet (%) :	-			
Oversize Dry (%) :	-			
Oversize Density (t/m³) :	-			
Field Moisture Content (%) :	11.9			
Hilf MDR Number :	248842			
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1 & 5.7.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	73			
Field Wet Density (t/m³) :	2.091			
Optimum Moisture Content (%) :	16.3			
Moisture Variation :	4.3			
Peak Converted Wet Density (t/m³) :	2.049			
Hilf Density Ratio (%) :	**102.0**			
Minimum Specification :	95			
Moisture Specification :	-2% to +3%			
Site Selection :	-			
Soil Description :	Gravelly Clayey SAND			
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 104**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**27/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248899	248900	248901	248902
Test Number :	350	351	352	353
Sampling Method :	-	-	-	-
Date Sampled :	10/07/2018	10/07/2018	10/07/2018	10/07/2018
Date Tested :	10/07/2018	10/07/2018	10/07/2018	10/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8598.900 N 31772.200 RL 62.780	Fill Area 1 E 8587.840 N 31772.870 RL 63.240	Fill Area 1 E 8588.920 N 31773.530 RL 63.470	Fill Area 1 E 8571.310 N 31773.630 RL 64.230
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	12.3	12.8	13.1	12.4
Hilf MDR Number :	248899	248900	248901	248902
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86.5	73.5	85.5	86
Field Wet Density (t/m³) :	2.060	2.178	2.157	2.077
Optimum Moisture Content (%) :	14.2	17.4	15.3	14.4
Moisture Variation :	1.9	4.4	2.1	2.0
Peak Converted Wet Density (t/m³) :	2.055	2.170	2.136	2.133
Hilf Density Ratio (%) :	**100.0**	**100.5**	**101.0**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 105**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**27/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248903	248904	248905	248906
Test Number :	354	355	356	357
Sampling Method :	-	-	-	-
Date Sampled :	10/07/2018	10/07/2018	10/07/2018	10/07/2018
Date Tested :	10/07/2018	10/07/2018	10/07/2018	10/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8935.000 N 31647.000 RL 52.100 (Final Level)	Fill Area 1 (BPH) E 8938.600 N 31649.000 RL 52.100 (Final Level)	Fill Area 1 (BPH) E 9158.600 N 31391.000 RL 45.400 (Final Level)	Fill Area 1 (BPH) E 9146.000 N 31397.500 RL 45.900 (Final Level)
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.3	9.4	12.5	10.8
Hilf MDR Number :	248903	248904	248905	248906
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	80	81	88	82.5
Field Wet Density (t/m³) :	2.122	2.101	2.097	2.109
Optimum Moisture Content (%) :	11.6	11.6	14.2	13.1
Moisture Variation :	2.4	2.2	1.7	2.4
Peak Converted Wet Density (t/m³) :	2.035	2.151	2.093	2.027
Hilf Density Ratio (%) :	**104.5**	**97.5**	**100.0**	**104.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 106**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**27/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248907	248908	248909	248910
Test Number :	358	359	360	361
Sampling Method :	-	-	-	-
Date Sampled :	10/07/2018	10/07/2018	10/07/2018	10/07/2018
Date Tested :	10/07/2018	10/07/2018	10/07/2018	10/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 E 8608.000 N 31782.000 RL 62.300	Fill Area 1 E 8600.000 N 31782.000 RL 62.670	Fill Area 1 E 8591.000 N 31782.000 RL 62.900	Fill Area 1 E 8576.000 N 31782.000 RL 63.930
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	20.0	15.5	12.8	22.8
Hilf MDR Number :	248907	248908	248909	248910
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	92.5	89.5	90.5	98.5
Field Wet Density (t/m³) :	1.976	2.067	2.055	1.991
Optimum Moisture Content (%) :	21.6	17.3	14.2	23.1
Moisture Variation :	1.5	1.8	1.3	0.4
Peak Converted Wet Density (t/m³) :	1.968	2.039	2.091	1.952
Hilf Density Ratio (%) :	**100.5**	**101.5**	**98.5**	**102.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 107**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**27/07/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248911	248912	248913	248914
Test Number :	362	363	364	365
Sampling Method :	-	-	-	-
Date Sampled :	10/07/2018	10/07/2018	10/07/2018	10/07/2018
Date Tested :	10/07/2018	10/07/2018	10/07/2018	10/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 9063.000 N 31721.000 RL 48.000	Fill Area 1 (BPH) E 9039.000 N 31721.000 RL 49.000	Fill Area 1 (BPH) E 8998.000 N 31723.000 RL 49.500	Fill Area 1 (BPH) E 8962.000 N 31731.000 RL 49.000
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.6	11.5	11.3	10.8
Hilf MDR Number :	248911	248912	248913	248914
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84	100.5	92	84.5
Field Wet Density (t/m³) :	2.131	2.085	2.125	2.080
Optimum Moisture Content (%) :	11.4	11.5	12.3	12.8
Moisture Variation :	1.8	0.0	1.0	2.0
Peak Converted Wet Density (t/m³) :	2.101	2.164	2.170	2.040
Hilf Density Ratio (%) :	**101.5**	**96.5**	**98.0**	**102.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 108**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248987	248988	248989	248990
Test Number :	366	367	368	369
Sampling Method :	-	-	-	-
Date Sampled :	11/07/2018	11/07/2018	11/07/2018	11/07/2018
Date Tested :	11/07/2018	11/07/2018	11/07/2018	11/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8630.000 N 31788.530 RL 60.680	Fill Area 1 (Salmons) E 8618.650 N 31788.000 RL 61.700	Fill Area 1 (Salmons) E 8606.000 N 31788.000 RL 62.160	Fill Area 1 (Salmons) E 8595.000 N 31788.000 RL 62.930
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.5	10.3	15.8	10.5
Hilf MDR Number :	248987	248988	248989	248990
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	87	90.5	88.5	84.5
Field Wet Density (t/m³) :	2.021	2.024	2.056	2.066
Optimum Moisture Content (%) :	13.2	11.4	17.9	12.5
Moisture Variation :	1.7	1.1	2.0	2.0
Peak Converted Wet Density (t/m³) :	2.110	2.095	2.005	2.048
Hilf Density Ratio (%) :	**96.0**	**96.5**	**102.5**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 109**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248991	248992	248993	248994
Test Number :	370	371	372	373
Sampling Method :	-	-	-	-
Date Sampled :	11/07/2018	11/07/2018	11/07/2018	11/07/2018
Date Tested :	11/07/2018	11/07/2018	11/07/2018	11/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8936.000 N 31723.000 RL 49.400	Fill Area 1 (BPH) E 8920.000 N 31726.000 RL 49.300	Fill Area 1 (BPH) E 8898.000 N 31728.000 RL 49.700	Fill Area 1 (BPH) E 8860.000 N 31729.000 RL 50.000
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	12	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.480	-	-
Field Moisture Content (%) :	14.4	14.3	11.8	12.6
Hilf MDR Number :	248991	248992	248993	248994
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	105	119	88	102.5
Field Wet Density (t/m³) :	2.109	2.218	2.062	2.158
Optimum Moisture Content (%) :	13.7	12.0	13.4	12.3
Moisture Variation :	-0.7	-2.3	1.7	-0.3
Peak Converted Wet Density (t/m³) :	2.203	2.249*	2.099	2.170
Hilf Density Ratio (%) :	**95.5**	**98.5**	**98.0**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 110**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248995	248996	248997	248998
Test Number :	374	375	376	377
Sampling Method :	-	-	-	-
Date Sampled :	11/07/2018	11/07/2018	11/07/2018	11/07/2018
Date Tested :	11/07/2018	11/07/2018	11/07/2018	11/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8627.000 N 31767.000 RL 61.190	Fill Area 1 (Salmons) E 8617.000 N 31768.000 RL 61.820	Fill Area 1 (Salmons) E 8607.000 N 31769.000 RL 62.520	Fill Area 1 (Salmons) E 8600.000 N 31769.000 RL 63.030
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.0	10.7	10.1	10.5
Hilf MDR Number :	248995	248996	248997	248998
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100	81.5	100	88
Field Wet Density (t/m³) :	2.040	2.088	2.108	2.062
Optimum Moisture Content (%) :	13.0	13.1	10.1	11.9
Moisture Variation :	0.0	2.4	0.0	1.5
Peak Converted Wet Density (t/m³) :	2.040	2.067	2.100	2.097
Hilf Density Ratio (%) :	**100.0**	**101.0**	**100.5**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 111**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	248999	249000	249001	249002
Test Number :	378	379	380	381
Sampling Method :	-	-	-	-
Date Sampled :	11/07/2018	11/07/2018	11/07/2018	11/07/2018
Date Tested :	11/07/2018	11/07/2018	11/07/2018	11/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8918.000 N 31727.000 RL 49.500	Fill Area 1 (BPH) E 8897.000 N 31726.000 RL 49.900	Fill Area 1 (BPH) E 8887.000 N 31728.000 RL 49.900	Fill Area 1 (BPH) E 8882.000 N 31727.000 RL 50.100
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.6	10.2	11.8	12.1
Hilf MDR Number :	248999	249000	249001	249002
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	83.5	83.5	98	98
Field Wet Density (t/m³) :	2.054	2.076	2.065	2.118
Optimum Moisture Content (%) :	12.7	12.2	12.0	12.3
Moisture Variation :	2.1	2.0	0.2	0.2
Peak Converted Wet Density (t/m³) :	2.066	2.022	2.065	2.105
Hilf Density Ratio (%) :	**99.5**	**102.5**	**100.0**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY	Gravelly Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 112**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249158	249159	249160	249161
Test Number :	382	383	384	385
Sampling Method :	-	-	-	-
Date Sampled :	13/07/2018	13/07/2018	13/07/2018	13/07/2018
Date Tested :	13/07/2018	13/07/2018	13/07/2018	13/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8656.000 N 31788.000 RL 59.30	Fill Area 1 (Salmons) E 8647.000 N 31787.000 RL 59.68	Fill Area 1 (Salmons) E 8637.800 N 31787.000 RL 60.26	Fill Area 1 (Salmons) E 8627.000 N 31787.000 RL 60.88
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	11	13	12	8
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.292	2.517	2.444	2.494
Field Moisture Content (%) :	10.2	14.2	12.4	14.1
Hilf MDR Number :	249158	249159	249160	249161
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86.5	100	97	96
Field Wet Density (t/m³) :	2.092	2.089	2.107	2.086
Optimum Moisture Content (%) :	11.8	14.2	12.8	14.7
Moisture Variation :	1.7	0.0	0.3	0.6
Peak Converted Wet Density (t/m³) :	2.16*	2.202*	2.192*	2.151*
Hilf Density Ratio (%) :	**97.0**	**95.0**	**96.0**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 113**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249162	249163	249164	249165
Test Number :	386	387	388	389
Sampling Method :	-	-	-	-
Date Sampled :	13/07/2018	13/07/2018	13/07/2018	13/07/2018
Date Tested :	13/07/2018	13/07/2018	13/07/2018	13/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8912.000 N 31759.000 RL 50.000	Fill Area 1 (BPH) E 8909.000 N 31744.000 RL 50.200	Fill Area 1 (BPH) E 8897.000 N 31745.000 RL 50.400	Fill Area 1 (BPH) E 8879.000 N 31750.000 RL 50.400
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	9	-	11	8
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.196		2.202	2.154
Field Moisture Content (%) :	11.9	13.7	10.7	10.1
Hilf MDR Number :	249162	249163	249164	249165
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	94	103.5	90	97
Field Wet Density (t/m³) :	2.089	2.062	2.099	2.110
Optimum Moisture Content (%) :	12.7	13.2	11.9	10.4
Moisture Variation :	0.8	-0.5	1.2	0.3
Peak Converted Wet Density (t/m³) :	2.133*	2.166	2.151*	2.088*
Hilf Density Ratio (%) :	**98.0**	**95.0**	**97.5**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 114**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249166	249167	249168	249169
Test Number :	390	391	392	393
Sampling Method :	-	-	-	-
Date Sampled :	13/07/2018	13/07/2018	13/07/2018	13/07/2018
Date Tested :	13/07/2018	13/07/2018	13/07/2018	13/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8599.000 N 31766.000 RL 63.03	Fill Area 1 (Salmons) E 8591.000 N 31766.000 RL 63.50	Fill Area 1 (Salmons) E 8584.000 N 31766.000 RL 63.99	Fill Area 1 (Salmons) E 8575.000 N 31766.000 RL 64.40
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.4	12.5	13.6	13.4
Hilf MDR Number :	249166	249167	249168	249169
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98.5	96.5	98.5	98
Field Wet Density (t/m³) :	2.088	2.081	2.073	2.069
Optimum Moisture Content (%) :	13.6	12.9	13.8	13.6
Moisture Variation :	0.2	0.5	0.2	0.2
Peak Converted Wet Density (t/m³) :	2.117	2.094	2.098	2.101
Hilf Density Ratio (%) :	**98.5**	**99.5**	**99.0**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 115**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249170	249171	249172	249173
Test Number :	394	395	396	397
Sampling Method :	-	-	-	-
Date Sampled :	13/07/2018	13/07/2018	13/07/2018	13/07/2018
Date Tested :	13/07/2018	13/07/2018	13/07/2018	13/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8916.000 N 31731.000 RL 50.200	Fill Area 1 (BPH) E 8934.000 N 31733.000 RL 50.300	Fill Area 1 (BPH) E 8948.000 N 31747.000 RL 49.900	Fill Area 1 (BPH) E 8950.000 N 31760.000 RL 50.400
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	12	-	10	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.197	-	2.160	-
Field Moisture Content (%) :	8.5	10.7	8.7	11.1
Hilf MDR Number :	249170	249171	249172	249173
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	78.5	85	77	96.5
Field Wet Density (t/m³) :	2.107	2.073	2.097	2.081
Optimum Moisture Content (%) :	10.9	12.6	11.3	11.5
Moisture Variation :	2.4	1.9	2.7	0.5
Peak Converted Wet Density (t/m³) :	2.102*	2.140	2.068*	2.134
Hilf Density Ratio (%) :	**100.5**	**97.0**	**101.5**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	-	-	-	-
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 116**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249192	249193	249194	249195
Test Number :	398	399	400	401
Sampling Method :	-	-	-	-
Date Sampled :	14/07/2018	14/07/2018	14/07/2018	14/07/2018
Date Tested :	14/07/2018	14/07/2018	14/07/2018	14/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8727.000 N 31801.000 RL 54.90	Fill Area 1 (Salmons) E 8719.000 N 31801.000 RL 55.49	Fill Area 1 (Salmons) E 8708.000 N 31799.000 RL 56.13	Fill Area 1 (Salmons) E 8697.000 N 31796.000 RL 56.86
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	12	-	15
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.605	-	2.322
Field Moisture Content (%) :	11.1	11.4	9.8	11.2
Hilf MDR Number :	249192	249193	249194	249195
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	96.5	96	82.5	96
Field Wet Density (t/m³) :	2.174	2.091	2.175	2.191
Optimum Moisture Content (%) :	11.5	11.9	11.9	11.6
Moisture Variation :	0.4	0.4	2.1	0.4
Peak Converted Wet Density (t/m³) :	2.146	2.193*	2.141	2.179*
Hilf Density Ratio (%) :	**101.5**	**95.5**	**101.5**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-	-	-	-
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 117**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249292	249293	249294	249295
Test Number :	402	403	404	405
Sampling Method :	-	-	-	-
Date Sampled :	16/07/2018	16/07/2018	16/07/2018	16/07/2018
Date Tested :	16/07/2018	16/07/2018	16/07/2018	16/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	E 8744.81 N 31786.93 RL 54.26	E 8733.02 N 31786.49 RL 55.25	E 8722.91 N 31786.59 RL 55.88	E 8706.84 N 31787.64 RL 57.04
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	14	14	15
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.336	2.336	2.245
Field Moisture Content (%) :	10.3	10.7	7.9	9.7
Hilf MDR Number :	249292	249293	249294	249295
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	96	85.5	72.5	82.5
Field Wet Density (t/m³) :	2.158	2.147	2.161	2.167
Optimum Moisture Content (%) :	10.7	12.6	10.9	11.8
Moisture Variation :	0.5	1.9	3.0	2.1
Peak Converted Wet Density (t/m³) :	2.140	2.167*	2.14*	2.137*
Hilf Density Ratio (%) :	**101.0**	**99.0**	**101.0**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 118**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249296	249297	249298	249299
Test Number :	406	407	408	409
Sampling Method :	-	-	-	-
Date Sampled :	16/07/2018	16/07/2018	16/07/2018	16/07/2018
Date Tested :	16/07/2018	16/07/2018	16/07/2018	16/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	E 8745.000 N 31770.000 RL 54.000	E 8733.000 N 31771.000 RL 54.900	E 8721.000 N 31772.000 RL 55.300	E 8705.000 N 31772.000 RL 56.700
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	13	13	15	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.298	2.293	2.347	
Field Moisture Content (%) :	12.2	9.6	10.2	10.6
Hilf MDR Number :	249296	249297	249298	249299
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	87.5	80	80.5	84.5
Field Wet Density (t/m³) :	2.193	2.201	2.151	2.159
Optimum Moisture Content (%) :	13.9	12.0	12.6	12.6
Moisture Variation :	1.6	2.4	2.4	2.0
Peak Converted Wet Density (t/m³) :	2.204*	2.165*	2.176*	2.147
Hilf Density Ratio (%) :	**99.5**	**101.5**	**99.0**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 119**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249300	249301	249302	249303
Test Number :	410	411	412	413
Sampling Method :	-	-	-	-
Date Sampled :	16/07/2018	16/07/2018	16/07/2018	16/07/2018
Date Tested :	16/07/2018	16/07/2018	16/07/2018	16/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	E 8925.441 N 31744.655 RL 51.00	E 8928.671 N 31755.421 RL 51.244	E 8929.934 N 31770.573 RL 51.555	E 8934.547 N 31779.641 RL 51.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	15	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	1.934	-	-
Field Moisture Content (%) :	9.7	9.5	12.4	13.1
Hilf MDR Number :	249300	249301	249302	249303
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	77.5	82.5	87.5	97.5
Field Wet Density (t/m³) :	2.072	2.035	2.057	2.060
Optimum Moisture Content (%) :	12.6	11.5	14.2	13.4
Moisture Variation :	2.9	2.0	1.8	0.3
Peak Converted Wet Density (t/m³) :	2.120	2.093*	2.131	2.146
Hilf Density Ratio (%) :	**97.5**	**97.0**	**96.5**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 120**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249304	249305	249306	249307
Test Number :	414	415	416	417
Sampling Method :	-	-	-	-
Date Sampled :	16/07/2018	16/07/2018	16/07/2018	16/07/2018
Date Tested :	16/07/2018	16/07/2018	16/07/2018	16/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	E 8907.000 N 31745.000 RL 50.600	E 8909.000 N 31757.000 RL 50.900	E 8912.000 N 31771.000 RL 51.200	E 8911.000 N 31781.000 RL 51.200
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	12	16	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	1.904	2.024	-
Field Moisture Content (%) :	10.9	10.1	10.4	10.1
Hilf MDR Number :	249304	249305	249306	249307
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	94	79	88	87.5
Field Wet Density (t/m³) :	2.043	2.082	2.121	2.046
Optimum Moisture Content (%) :	11.6	12.8	11.8	11.5
Moisture Variation :	0.7	2.8	1.4	1.5
Peak Converted Wet Density (t/m³) :	2.123	2.05*	2.113*	2.115
Hilf Density Ratio (%) :	**96.0**	**101.5**	**100.5**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 121**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249400	249401	249402	249403
Test Number :	418	419	420	421
Sampling Method :	-	-	-	-
Date Sampled :	17/07/2018	17/07/2018	17/07/2018	17/07/2018
Date Tested :	17/07/2018	17/07/2018	17/07/2018	17/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8636.000 N 31783.000 RL 60.83	Fill Area 1 (BPH) E 8625.000 N 31783.000 RL 61.65	Fill Area 1 (BPH) E 8616.000 N 31783.000 RL 62.18	Fill Area 1 (BPH) E 8607.000 N 31784.000 RL 62.50
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.0	11.0	11.2	9.8
Hilf MDR Number :	249400	249401	249402	249403
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85	86	85	84
Field Wet Density (t/m³) :	2.213	2.139	2.126	2.121
Optimum Moisture Content (%) :	11.8	12.8	13.2	11.7
Moisture Variation :	1.8	1.8	2.0	1.9
Peak Converted Wet Density (t/m³) :	2.142	2.133	2.143	2.119
Hilf Density Ratio (%) :	**103.5**	**100.5**	**99.0**	**100.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 122**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249404	249405	249406	249407
Test Number :	422	423	424	425
Sampling Method :	-	-	-	-
Date Sampled :	17/07/2018	17/07/2018	17/07/2018	17/07/2018
Date Tested :	17/07/2018	17/07/2018	17/07/2018	17/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8920.000 N 31740.000 RL 51.300	Fill Area 1 (Salmons) E 8898.000 N 31723.000 RL 50.900	Fill Area 1 (Salmons) E 8858.000 N 31720.000 RL 51.300	Fill Area 1 (Salmons) E 8864.000 N 31740.000 RL 51.400
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.4	14.3	11.9	11.6
Hilf MDR Number :	249404	249405	249406	249407
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	101	98	88.5	86
Field Wet Density (t/m³) :	2.111	2.131	2.086	2.109
Optimum Moisture Content (%) :	13.3	14.6	13.4	13.5
Moisture Variation :	-0.1	0.2	1.6	1.9
Peak Converted Wet Density (t/m³) :	2.146	2.151	2.093	2.118
Hilf Density Ratio (%) :	**98.5**	**99.0**	**99.5**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 123**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249408	249409	249410	249411
Test Number :	426	427	428	429
Sampling Method :	-	-	-	-
Date Sampled :	17/07/2018	17/07/2018	17/07/2018	17/07/2018
Date Tested :	17/07/2018	17/07/2018	17/07/2018	17/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8876.000 N 31774.000 RL 51.800	Fill Area 1 (BPH) E 8912.000 N 31767.000 RL 52.200	Fill Area 1 (BPH) E 8943.000 N 31769.000 RL 51.600	Fill Area 1 (BPH) E 8943.000 N 31764.000 RL 51.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.3	10.9	10.7	9.9
Hilf MDR Number :	249408	249409	249410	249411
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86.5	93.5	86	86.5
Field Wet Density (t/m³) :	2.068	2.071	2.126	2.159
Optimum Moisture Content (%) :	11.9	11.7	12.4	11.4
Moisture Variation :	1.7	0.8	1.8	1.6
Peak Converted Wet Density (t/m³) :	2.150	2.142	2.141	2.155
Hilf Density Ratio (%) :	**96.0**	**96.5**	**99.5**	**100.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 124**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249511	249512	249513	249514
Test Number :	430	431	432	433
Sampling Method :	-	-	-	-
Date Sampled :	18/07/2018	18/07/2018	18/07/2018	18/07/2018
Date Tested :	18/07/2018	18/07/2018	18/07/2018	18/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8875.000 N 31767.000 RL 51.850	Fill Area 1 (BPH) E 8905.000 N 31765.000 RL 52.200	Fill Area 1 (BPH) E 8893.000 N 31766.000 RL 52.100	Fill Area 1 (BPH) E 8918.000 N 31763.000 RL 52.200
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.7	9.6	9.6	11.1
Hilf MDR Number :	249511	249512	249513	249514
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86.5	83.5	86	102
Field Wet Density (t/m³) :	2.205	2.227	2.116	2.140
Optimum Moisture Content (%) :	13.6	11.5	11.2	10.9
Moisture Variation :	1.9	1.9	1.7	-0.2
Peak Converted Wet Density (t/m³) :	2.124	2.142	2.117	2.120
Hilf Density Ratio (%) :	**104.0**	**104.0**	**100.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 125**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249515	249516	249517	249518
Test Number :	434	435	436	437
Sampling Method :	-	-	-	-
Date Sampled :	18/07/2018	18/07/2018	18/07/2018	18/07/2018
Date Tested :	18/07/2018	18/07/2018	18/07/2018	18/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8929.000 N 31708.000 RL 52.300	Fill Area 1 (BPH) E 8898.000 N 31720.000 RL 52.400	Fill Area 1 (BPH) E 8875.000 N 31720.000 RL 52.500	Fill Area 1 (BPH) E 8853.600 N 31696.000 RL 57.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.8	12.1	11.3	11.6
Hilf MDR Number :	249515	249516	249517	249518
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100.5	91	97	87
Field Wet Density (t/m³) :	2.278	2.125	2.283	2.116
Optimum Moisture Content (%) :	10.8	13.3	11.6	13.4
Moisture Variation :	0.0	1.2	0.3	1.8
Peak Converted Wet Density (t/m³) :	2.142	2.080	2.175	2.083
Hilf Density Ratio (%) :	**106.5**	**102.0**	**105.0**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 126**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249602	249603	249604	249605
Test Number :	438	439	440	441
Sampling Method :	-	-	-	-
Date Sampled :	19/07/2018	19/07/2018	19/07/2018	19/07/2018
Date Tested :	19/07/2018	19/07/2018	19/07/2018	19/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8905.000 N 31745.000 RL 53.200	Fill Area 1 (BPH) E 8877.000 N 31745.000 RL 53.400	Fill Area 1 (BPH) E 8896.000 N 31723.000 RL 53.400	Fill Area 1 (BPH) E 8863.000 N 31726.000 RL 53.690
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	10	13	8	1
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.497	2.462	2.471	2.470
Field Moisture Content (%) :	9.8	10.0	9.4	10.2
Hilf MDR Number :	249602	249603	249604	249605
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	97.5	103.5	95	95
Field Wet Density (t/m³) :	2.075	2.105	2.090	2.090
Optimum Moisture Content (%) :	10.0	9.7	9.9	10.7
Moisture Variation :	0.2	-0.3	0.5	0.6
Peak Converted Wet Density (t/m³) :	2.135*	2.143*	2.087*	2.076*
Hilf Density Ratio (%) :	**97.0**	**98.0**	**100.0**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 127**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**2/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249606	249607	249608	249609
Test Number :	442	443	444	445
Sampling Method :	-	-	-	-
Date Sampled :	19/07/2018	19/07/2018	19/07/2018	19/07/2018
Date Tested :	19/07/2018	19/07/2018	19/07/2018	19/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8881.000 N 31732.000 RL 54.100	Fill Area 1 (BPH) E 8912.000 N 31728.000 RL 53.200	Fill Area 1 (BPH) E 8886.200 N 31729.000 RL 54.000	Fill Area 1 (BPH) E 8855.000 N 31726.000 RL 53.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	8	12	12	12
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.481	2.458	2.481	2.471
Field Moisture Content (%) :	11.9	11.8	13.7	12.1
Hilf MDR Number :	249606	249607	249608	249609
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	96.5	97	98	98
Field Wet Density (t/m³) :	2.139	2.087	2.132	2.093
Optimum Moisture Content (%) :	12.3	12.2	14.0	12.4
Moisture Variation :	0.4	0.3	0.2	0.2
Peak Converted Wet Density (t/m³) :	2.213*	2.155*	2.216*	2.206*
Hilf Density Ratio (%) :	**96.5**	**97.0**	**96.0**	**95.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND	Gravelly Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 128**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249717	249718	249719	249720
Test Number :	446	447	448	449
Sampling Method :	-	-	-	-
Date Sampled :	20/07/2018	20/07/2018	20/07/2018	20/07/2018
Date Tested :	20/07/2018	20/07/2018	20/07/2018	20/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8604.000 N 31771.000 RL 63.180	Fill Area 1 (Salmons) E 8597.000 N 31771.000 RL 63.700	Fill Area 1 (Salmons) E 8589.000 N 31772.000 RL 64.200	Fill Area 1 (Salmons) E 8581.000 N 31773.000 RL 64.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	11	11	-	12
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.498	2.522		2.509
Field Moisture Content (%) :	10.2	10.8	10.5	10.0
Hilf MDR Number :	249717	249718	249719	249720
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	98.5	89	87.5
Field Wet Density (t/m³) :	2.110	2.130	2.090	2.180
Optimum Moisture Content (%) :	10.4	11.0	11.8	11.4
Moisture Variation :	0.2	0.2	1.3	1.4
Peak Converted Wet Density (t/m³) :	2.19*	2.179*	2.152	2.203*
Hilf Density Ratio (%) :	**96.5**	**98.0**	**97.0**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 129**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249721	249722	249723	249724
Test Number :	450	451	452	453
Sampling Method :	-	-	-	-
Date Sampled :	20/07/2018	20/07/2018	20/07/2018	20/07/2018
Date Tested :	20/07/2018	20/07/2018	20/07/2018	20/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8873.000 N 31724.000 RL 54.400 (Final Level)	Fill Area 1 (BPH) E 8876.000 N 31740.000 RL 54.300 (Final Level)	Fill Area 1 (BPH) E 8889.000 N 31728.000 RL 53.980 (Final Level)	Fill Area 1 (BPH) E 8910.000 N 31732.000 RL 53.700 (Final Level)
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	11	14	-	11
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.501	2.487	-	2.521
Field Moisture Content (%) :	10.7	12.7	11.0	12.2
Hilf MDR Number :	249721	249722	249723	249724
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86.5	89	97.5	98
Field Wet Density (t/m³) :	2.144	2.170	2.076	2.114
Optimum Moisture Content (%) :	12.4	14.3	11.3	12.5
Moisture Variation :	1.7	1.6	0.3	0.2
Peak Converted Wet Density (t/m³) :	2.181*	2.15*	2.146	2.209*
Hilf Density Ratio (%) :	**98.5**	**101.0**	**96.5**	**95.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 130**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249725	249726	249727	249728
Test Number :	454	455	456	457
Sampling Method :	-	-	-	-
Date Sampled :	20/07/2018	20/07/2018	20/07/2018	20/07/2018
Date Tested :	20/07/2018	20/07/2018	20/07/2018	20/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8697.000 N 31775.000 RL 58.100	Fill Area 1 (Salmons) E 8686.000 N 31774.000 RL 58.500	Fill Area 1 (Salmons) E 8677.000 N 31773.000 RL 59.000	Fill Area 1 (Salmons) E 8666.000 N 31771.000 RL 59.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	8.9	9.0	12.0	11.9
Hilf MDR Number :	249725	249726	249727	249728
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85.5	87	97	97.5
Field Wet Density (t/m³) :	2.058	2.102	2.084	2.109
Optimum Moisture Content (%) :	10.4	10.4	12.4	12.2
Moisture Variation :	1.6	1.3	0.3	0.3
Peak Converted Wet Density (t/m³) :	2.128	2.137	2.197	2.198
Hilf Density Ratio (%) :	**96.5**	**98.5**	**95.0**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 131**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249729	249730	249731	249732
Test Number :	458	459	460	461
Sampling Method :	-	-	-	-
Date Sampled :	20/07/2018	20/07/2018	20/07/2018	20/07/2018
Date Tested :	20/07/2018	20/07/2018	20/07/2018	20/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8843.000 N 31778.000 RL 51.700	Fill Area 1 (BPH) E 8845.000 N 31789.000 RL 51.600	Fill Area 1 (BPH) E 8894.000 N 31779.000 RL 52.800	Fill Area 1 (BPH) E 8877.000 N 31780.000 RL 52.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	11	-	11	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.480	-	2.512	-
Field Moisture Content (%) :	10.3	10.3	9.7	9.1
Hilf MDR Number :	249729	249730	249731	249732
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	87	84	83	88.5
Field Wet Density (t/m³) :	2.162	2.061	2.155	2.109
Optimum Moisture Content (%) :	11.8	12.3	11.7	10.3
Moisture Variation :	1.6	2.0	2.0	1.2
Peak Converted Wet Density (t/m³) :	2.181*	2.149	2.181*	2.124
Hilf Density Ratio (%) :	**99.0**	**96.0**	**99.0**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 132**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249805	249806	249807	249808
Test Number :	467	468	469	470
Sampling Method :	-	-	-	-
Date Sampled :	23/07/2018	23/07/2018	23/07/2018	23/07/2018
Date Tested :	23/07/2018	23/07/2018	23/07/2018	23/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8661.000 N 31780.000 RL 59.900	Fill Area 1 (Salmons) E 8650.000 N 31780.000 RL 60.600	Fill Area 1 (Salmons) E 8641.000 N 31781.000 RL 61.100	Fill Area 1 (Salmons) E 8630.900 N 31782.000 RL 61.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	7.6	18.1	9.6	9.4
Hilf MDR Number :	249805	249806	249807	249808
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	77	87.5	84.5	78
Field Wet Density (t/m³) :	2.072	2.062	2.089	2.091
Optimum Moisture Content (%) :	9.9	20.7	11.4	12.0
Moisture Variation :	2.4	2.5	1.8	2.6
Peak Converted Wet Density (t/m³) :	2.042	2.040	2.112	2.115
Hilf Density Ratio (%) :	**101.5**	**101.0**	**99.0**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 133**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249809	249810	249811	249812
Test Number :	471	472	473	474
Sampling Method :	-	-	-	-
Date Sampled :	23/07/2018	23/07/2018	23/07/2018	23/07/2018
Date Tested :	23/07/2018	23/07/2018	23/07/2018	23/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8874.000 N 31724.000 RL 54.400	Fill Area 1 (BPH) E 8898.000 N 31728.000 RL 53.900	Fill Area 1 (BPH) E 8910.000 N 31732.000 RL 53.700	Fill Area 1 (BPH) E 8876.000 N 31740.000 RL 54.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	9
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	2.512
Field Moisture Content (%) :	14.5	14.8	13.5	11.0
Hilf MDR Number :	249809	249810	249811	249812
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100	95.5	98	86.5
Field Wet Density (t/m³) :	2.116	2.120	2.155	2.159
Optimum Moisture Content (%) :	14.5	15.5	13.7	12.7
Moisture Variation :	0.0	0.7	0.2	1.7
Peak Converted Wet Density (t/m³) :	2.171	2.162	2.148	2.153*
Hilf Density Ratio (%) :	**97.5**	**98.0**	**100.5**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 134**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249813	249814	249815	249816
Test Number :	475	476	477	478
Sampling Method :	-	-	-	-
Date Sampled :	23/07/2018	23/07/2018	23/07/2018	23/07/2018
Date Tested :	23/07/2018	23/07/2018	23/07/2018	23/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8883.000 N 31773.000 RL 53.300	Fill Area 1 (BPH) E 8909.000 N 31771.000 RL 53.200	Fill Area 1 (BPH) E 8933.000 N 31766.500 RL 53.000	Fill Area 1 (BPH) E 8932.000 N 31752.000 RL 52.800
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	10	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.502	-	-
Field Moisture Content (%) :	9.6	7.9	11.8	12.2
Hilf MDR Number :	249813	249814	249815	249816
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.4	AS1289.2.1.4
Moisture Ratio (%) :	82	80	108	98
Field Wet Density (t/m³) :	2.141	2.126	2.056	2.076
Optimum Moisture Content (%) :	11.7	9.9	10.9	12.4
Moisture Variation :	2.1	2.0	-0.9	0.2
Peak Converted Wet Density (t/m³) :	2.078	2.098*	2.153	2.162
Hilf Density Ratio (%) :	**103.0**	**101.5**	**95.5**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 135**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249928	249929	249930	249931
Test Number :	479	480	481	482
Sampling Method :	-	-	-	-
Date Sampled :	24/07/2018	24/07/2018	24/07/2018	24/07/2018
Date Tested :	24/07/2018	24/07/2018	24/07/2018	24/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8664.000 N 31766.000 RL 59.600	Fill Area 1 (Salmons) E 8653.000 N 31767.000 RL 60.100	Fill Area 1 (Salmons) E 8642.000 N 31766.000 RL 60.900	Fill Area 1 (Salmons) E 8629.000 N 31765.000 RL 61.700
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	14.3	13.2	11.8	10.5
Hilf MDR Number :	249928	249929	249930	249931
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100	98.5	96.5	98.5
Field Wet Density (t/m³) :	2.064	2.084	2.079	2.100
Optimum Moisture Content (%) :	14.3	13.4	12.2	10.6
Moisture Variation :	0.0	0.2	0.5	0.1
Peak Converted Wet Density (t/m³) :	2.124	2.153	2.122	2.152
Hilf Density Ratio (%) :	**97.0**	**97.0**	**98.0**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 136**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**07/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	249932	249933	249934	249935
Test Number :	483	484	485	486
Sampling Method :	-	-	-	-
Date Sampled :	24/07/2018	24/07/2018	24/07/2018	24/07/2018
Date Tested :	24/07/2018	24/07/2018	24/07/2018	24/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8593.000 N 31790.000 RL 63.600	Fill Area 1 (Salmons) E 8594.000 N 31781.000 RL 63.800	Fill Area 1 (Salmons) E 8595.000 N 31772.000 RL 64.000	Fill Area 1 (Salmons) E 8595.000 N 31765.000 RL 63.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	10	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.290	-	-	-
Field Moisture Content (%) :	12.1	11.8	12.4	15.5
Hilf MDR Number :	249932	249933	249934	249934
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99	99.5	98	98.5
Field Wet Density (t/m³) :	2.086	2.091	2.096	2.093
Optimum Moisture Content (%) :	12.2	11.9	12.7	15.8
Moisture Variation :	0.1	0.1	0.2	0.2
Peak Converted Wet Density (t/m³) :	2.162*	2.131	2.135	2.135
Hilf Density Ratio (%) :	**96.5**	**98.0**	**98.0**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 137**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**10/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250040	250041	250042	250043
Test Number :	487	488	489	490
Sampling Method :	-	-	-	-
Date Sampled :	25/07/2018	25/07/2018	25/07/2018	25/07/2018
Date Tested :	25/07/2018	25/07/2018	25/07/2018	25/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8625.000 N 31761.000 RL 62.200	Fill Area 1 (Salmons) E 8615.000 N 31763.000 RL 62.800	Fill Area 1 (Salmons) E 8604.000 N 31763.000 RL 63.400	Fill Area 1 (Salmons) E 8594.000 N 31763.000 RL 64.300
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.9	11.4	12.1	12.4
Hilf MDR Number :	250040	250041	250042	250043
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98.5	98	84	84.5
Field Wet Density (t/m³) :	2.093	2.075	2.045	2.059
Optimum Moisture Content (%) :	12.1	11.6	14.4	14.7
Moisture Variation :	0.2	0.2	2.3	2.2
Peak Converted Wet Density (t/m³) :	2.118	2.103	2.067	2.074
Hilf Density Ratio (%) :	**99.0**	**98.5**	**99.0**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 138**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**10/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250044	250045	250046	250047
Test Number :	491	492	493	494
Sampling Method :	-	-	-	-
Date Sampled :	25/07/2018	25/07/2018	25/07/2018	25/07/2018
Date Tested :	25/07/2018	25/07/2018	25/07/2018	25/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8863.000 N 31783.000 RL 53.700	Fill Area 1 (BPH) E 8887.000 N 31780.000 RL 53.800	Fill Area 1 (BPH) E 8909.000 N 31778.000 RL 53.900	Fill Area 1 (BPH) E 8923.000 N 31777.000 RL 53.900
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	12	-	12	11
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.551	-	2.552	2.556
Field Moisture Content (%) :	9.9	11.9	10.8	11.7
Hilf MDR Number :	250044	250045	250046	250047
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	94.5	99	99.5	98.5
Field Wet Density (t/m³) :	2.072	2.099	2.076	2.110
Optimum Moisture Content (%) :	10.5	12.0	10.8	11.9
Moisture Variation :	0.6	0.1	0.0	0.2
Peak Converted Wet Density (t/m³) :	2.161*	2.189	2.153*	2.172*
Hilf Density Ratio (%) :	**96.0**	**96.0**	**96.5**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 139**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**10/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250048	250049	250050	250051
Test Number :	495	496	497	498
Sampling Method :	-	-	-	-
Date Sampled :	25/07/2018	25/07/2018	25/07/2018	25/07/2018
Date Tested :	25/07/2018	25/07/2018	25/07/2018	25/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8694.000 N 31810.000 RL 58.000	Fill Area 1 (Salmons) E 8684.000 N 31811.000 RL 58.400	Fill Area 1 (Salmons) E 8672.000 N 31812.000 RL 59.200	Fill Area 1 (Salmons) E 8660.000 N 31813.000 RL 60.000
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	12	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	1.549	-
Field Moisture Content (%) :	3.2	11.3	10.9	11.6
Hilf MDR Number :	250048	250049	250050	250051
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	93	96	95.5	98
Field Wet Density (t/m³) :	2.105	2.122	2.089	2.114
Optimum Moisture Content (%) :	3.4	11.7	11.4	11.8
Moisture Variation :	0.2	0.4	0.4	0.2
Peak Converted Wet Density (t/m³) :	2.138	2.173	2.068*	2.168
Hilf Density Ratio (%) :	**98.5**	**97.5**	**101.0**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 140**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**10/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250052	250053	250054	250055
Test Number :	499	500	501	502
Sampling Method :	-	-	-	-
Date Sampled :	25/07/2018	25/07/2018	25/07/2018	25/07/2018
Date Tested :	25/07/2018	25/07/2018	25/07/2018	25/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8881.000 N 31763.000 RL 54.400 (Final Level)	Fill Area 1 (BPH) E 8913.000 N 31760.000 RL 53.600 (Final Level)	Fill Area 1 (BPH) E 8909.000 N 31775.000 RL 54.300 (Final Level)	Fill Area 1 (BPH) E 8880.000 N 31777.000 RL 54.700 (Final Level)
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	11	11	10	11
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.552	2.548	2.553	2.548
Field Moisture Content (%) :	10.9	10.4	9.5	9.7
Hilf MDR Number :	250052	250053	250054	250055
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84	83	80.5	80
Field Wet Density (t/m³) :	2.175	2.153	2.162	2.152
Optimum Moisture Content (%) :	13.0	12.6	11.8	12.1
Moisture Variation :	2.0	2.2	2.3	2.4
Peak Converted Wet Density (t/m³) :	2.196*	2.189*	2.172*	2.182*
Hilf Density Ratio (%) :	**99.0**	**98.5**	**99.5**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 141**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**10/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250159	250160	250161	250162
Test Number :	503	504	505	506
Sampling Method :	-	-	-	-
Date Sampled :	26/07/2018	26/07/2018	26/07/2018	26/07/2018
Date Tested :	26/07/2018	26/07/2018	26/07/2018	26/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E: 8672.000 N: 31796.000 RL: 59.600	Fill Area 1 (Salmons) E: 8661.900 N: 31796.000 RL: 60.200	Fill Area 1 (Salmons) E: 8638.000 N: 31798.000 RL: 61.600	Fill Area 1 (Salmons) E: 8626.000 N: 31798.000 RL: 62.100
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.7	15.8	14.4	13.3
Hilf MDR Number :	250159	250160	250161	250162
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	101.5	101.5	91.5	99
Field Wet Density (t/m³) :	2.040	2.046	2.075	2.060
Optimum Moisture Content (%) :	13.5	15.6	15.8	13.4
Moisture Variation :	-0.2	-0.2	1.4	0.1
Peak Converted Wet Density (t/m³) :	2.094	2.040	2.042	2.130
Hilf Density Ratio (%) :	**97.5**	**100.5**	**101.5**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 142**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**10/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250163	250164	250165	250166
Test Number :	507	508	509	510
Sampling Method :	-	-	-	-
Date Sampled :	26/07/2018	26/07/2018	26/07/2018	26/07/2018
Date Tested :	26/07/2018	26/07/2018	26/07/2018	26/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E: 8841.000 N: 31749.000 RL: 52.500	Fill Area 1 (BPH) E: 8823.000 N: 31750.000 RL: 52.100	Fill Area 1 (BPH) E: 8837.000 N: 31734.000 RL: 52.700	Fill Area 1 (BPH) E: 8818.000 N: 31735.000 RL: 52.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.1	10.1	9.5	10.3
Hilf MDR Number :	250163	250164	250165	250166
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	101	82.5	102
Field Wet Density (t/m³) :	2.098	2.098	2.110	2.085
Optimum Moisture Content (%) :	10.3	10.0	11.5	10.1
Moisture Variation :	0.2	-0.1	2.0	-0.2
Peak Converted Wet Density (t/m³) :	2.108	2.119	2.079	2.124
Hilf Density Ratio (%) :	**99.5**	**99.0**	**101.5**	**98.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 143**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**10/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250167	250168	250169	250170
Test Number :	511	512	513	514
Sampling Method :	-	-	-	-
Date Sampled :	26/07/2018	26/07/2018	26/07/2018	26/07/2018
Date Tested :	26/07/2018	26/07/2018	26/07/2018	26/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E: 8620.000 N: 31823.000 RL: 62.100	Fill Area 1 (Salmons) E: 8614.000 N: 31821.000 RL: 62.600	Fill Area 1 (Salmons) E: 8607.000 N: 31817.000 RL: 62.800	Fill Area 1 (Salmons) E: 8602.000 N: 31814.000 RL: 63.000
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.5	8.3	9.6	9.2
Hilf MDR Number :	250167	250168	250169	250170
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	93	78.5	95	82
Field Wet Density (t/m³) :	2.015	2.106	2.071	2.115
Optimum Moisture Content (%) :	10.2	10.6	10.1	11.2
Moisture Variation :	0.8	2.3	0.6	2.1
Peak Converted Wet Density (t/m³) :	2.095	2.081	2.076	2.087
Hilf Density Ratio (%) :	**96.0**	**101.0**	**100.0**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 144**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**10/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250171	250172	250173	250174
Test Number :	515	516	517	518
Sampling Method :	-	-	-	-
Date Sampled :	26/07/2018	26/07/2018	26/07/2018	26/07/2018
Date Tested :	26/07/2018	26/07/2018	26/07/2018	26/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E: 8815.000 N: 31773.000 RL: 51.600	Fill Area 1 (BPH) E: 8824.000 N: 31771.500 RL: 51.800	Fill Area 1 (BPH) E: 8836.000 N: 31774.000 RL: 52.100	Fill Area 1 (BPH) E: 8817.000 N: 31785.000 RL: 51.600
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	12.2	11.3	8.5	8.1
Hilf MDR Number :	250171	250172	250173	250174
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86	78	77.5	72
Field Wet Density (t/m³) :	2.141	2.169	2.083	2.108
Optimum Moisture Content (%) :	14.2	14.5	11.0	11.3
Moisture Variation :	1.9	3.2	2.6	3.2
Peak Converted Wet Density (t/m³) :	2.112	2.124	2.030	2.051
Hilf Density Ratio (%) :	**101.5**	**102.0**	**102.5**	**103.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	**Reported moisture variation does not accurately reflect placement moisture.**			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 145**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250340	250341	250342	250343
Test Number :	519	520	521	522
Sampling Method :	-	-	-	-
Date Sampled :	27/07/2018	27/07/2018	27/07/2018	27/07/2018
Date Tested :	27/07/2018	27/07/2018	27/07/2018	27/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8700.000 N 31789.000 RL 58.100	Fill Area 1 (Salmons) E 8691.000 N 31790.000 RL 58.600	Fill Area 1 (Salmons) E 8682.000 N 31791.000 RL 59.300	Fill Area 1 (Salmons) E 8671.000 N 31792.000 RL 59.800
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	16.3	16.4	16.7	12.7
Hilf MDR Number :	250340	250341	250342	250343
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	92	91.5	91.5	87.5
Field Wet Density (t/m³) :	2.038	2.062	2.028	2.050
Optimum Moisture Content (%) :	17.7	17.9	18.3	14.5
Moisture Variation :	1.4	1.5	1.5	1.8
Peak Converted Wet Density (t/m³) :	2.003	1.971	2.029	2.051
Hilf Density Ratio (%) :	**102.0**	**104.5**	**100.0**	**100.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 146**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250344	250345	250346	250347
Test Number :	523	524	525	526
Sampling Method :	-	-	-	-
Date Sampled :	27/07/2018	27/07/2018	27/07/2018	27/07/2018
Date Tested :	27/07/2018	27/07/2018	27/07/2018	27/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8838.000 N 31763.000 RL 53.000	Fill Area 1 (BPH) E 8830.000 N 31757.000 RL 53.100	Fill Area 1 (BPH) E 8829.000 N 31773.000 RL 52.800	Fill Area 1 (BPH) E 8817.000 N 31776.000 RL 52.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	11	9	13	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.500	2.482	2.481	
Field Moisture Content (%) :	10.3	11.7	11.6	11.2
Hilf MDR Number :	250344	250345	250346	250347
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84.5	102	89	86.5
Field Wet Density (t/m³) :	2.162	2.188	2.182	2.115
Optimum Moisture Content (%) :	12.2	11.5	13.1	13.0
Moisture Variation :	1.9	-0.2	1.4	1.8
Peak Converted Wet Density (t/m³) :	2.19*	2.199*	2.228*	2.152
Hilf Density Ratio (%) :	**98.5**	**99.5**	**98.0**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 147**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250348	250349	250350	250351
Test Number :	527	528	529	530
Sampling Method :	-	-	-	-
Date Sampled :	27/07/2018	27/07/2018	27/07/2018	27/07/2018
Date Tested :	27/07/2018	27/07/2018	27/07/2018	27/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8745.000 N 31764.000 RL 55.100	Fill Area 1 (Salmons) E 8737.000 N 31766.000 RL 55.900	Fill Area 1 (Salmons) E 8729.000 N 31768.000 RL 56.500	Fill Area 1 (Salmons) E 8720.000 N 31770.000 RL 57.290
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	12.8	8.8	13.0	12.2
Hilf MDR Number :	250348	250349	250350	250351
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	90.5	82.5	95	89
Field Wet Density (t/m³) :	2.086	2.061	2.084	2.090
Optimum Moisture Content (%) :	14.1	10.7	13.6	13.7
Moisture Variation :	1.3	1.9	0.7	1.6
Peak Converted Wet Density (t/m³) :	2.095	2.065	2.106	2.117
Hilf Density Ratio (%) :	**99.5**	**100.0**	**99.0**	**98.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 148**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250352	250353	250354	250355
Test Number :	531	532	533	534
Sampling Method :	-	-	-	-
Date Sampled :	27/07/2018	27/07/2018	27/07/2018	27/07/2018
Date Tested :	27/07/2018	27/07/2018	27/07/2018	27/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8820.000 N 31749.000 RL 53.200	Fill Area 1 (BPH) E 8832.000 N 31749.000 RL 53.500	Fill Area 1 (BPH) E 8820.000 N 31749.000 RL 53.200	Fill Area 1 (BPH) E 8806.000 N 31750.000 RL 52.500
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	11	-	-	10
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.515	-	-	2.486
Field Moisture Content (%) :	9.4	9.2	-	12.5
Hilf MDR Number :	250352	250353	250354	250355
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85	87	100.5	87.5
Field Wet Density (t/m³) :	2.122	2.089	2.113	2.122
Optimum Moisture Content (%) :	11.1	10.6		14.3
Moisture Variation :	1.7	1.4	-0.7	1.8
Peak Converted Wet Density (t/m³) :	2.2*	2.151	2.161	2.207*
Hilf Density Ratio (%) :	**96.5**	**97.0**	**98.0**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 149**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250368	250369	250370	250371
Test Number :	535	536	537	538
Sampling Method :	-	-	-	-
Date Sampled :	28/07/2018	28/07/2018	28/07/2018	28/07/2018
Date Tested :	28/07/2018	28/07/2018	28/07/2018	28/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8590.000 N 31744.000 RL 64.600	Fill Area 1 (Salmons) E 8580.000 N 31744.000 RL 65.100	Fill Area 1 (Salmons) E 8573.000 N 31744.000 RL 65.500	Fill Area 1 (Salmons) E 8567.000 N 31745.000 RL 65.700
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	8.3	8.8	8.1	8.9
Hilf MDR Number :	250368	250369	250370	250371
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	83	84.5	86.5	84
Field Wet Density (t/m³) :	2.093	2.108	2.098	2.201
Optimum Moisture Content (%) :	10.0	10.4	9.4	10.6
Moisture Variation :	1.8	1.7	1.3	1.8
Peak Converted Wet Density (t/m³) :	2.192	2.183	2.213	2.179
Hilf Density Ratio (%) :	**95.5**	**96.5**	**95.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 150**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250436	250437	250438	250439
Test Number :	539	540	541	542
Sampling Method :	-	-	-	-
Date Sampled :	30/07/2018	30/07/2018	30/07/2018	30/07/2018
Date Tested :	30/07/2018	30/07/2018	30/07/2018	30/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8819.0 N 31759.5 RL 53.2	Fill Area 1 (BPH) E 8831 N 31755 RL 53.7	Fill Area 1 (BPH) E 8843 N 31753 RL 53.9	Fill Area 1 (BPH) E 8831 N 31755 RL 53.7
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	14.2	14.5	13.6	11.6
Hilf MDR Number :	250436	250437	250438	250439
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	90.5	89.5	103.5	102.5
Field Wet Density (t/m³) :	2.054	2.048	2.068	2.070
Optimum Moisture Content (%) :	15.7	16.2	13.2	11.3
Moisture Variation :	1.5	1.7	-0.5	-0.3
Peak Converted Wet Density (t/m³) :	1.973	1.999	2.093	2.090
Hilf Density Ratio (%) :	**104.0**	**102.5**	**99.0**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 151**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250440	250441	250442	250443
Test Number :	543	544	545	546
Sampling Method :	-	-	-	-
Date Sampled :	30/07/2018	30/07/2018	30/07/2018	30/07/2018
Date Tested :	30/07/2018	30/07/2018	30/07/2018	30/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8673 N 31789 RL 59.74	Fill Area 1 (Salmons) E 8667 N 31791 RL 60.1	Fill Area 1 (Salmons) E 8661 N 31793 RL 60.50	Fill Area 1 (Salmons) E 8652 N 31796 RL 61.06
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	10	13
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	2.280	2.380
Field Moisture Content (%) :	11.4	9.4	10.9	10.4
Hilf MDR Number :	250440	250441	250442	250443
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	102.5	100.5	97	102.5
Field Wet Density (t/m³) :	2.077	2.090	2.178	2.219
Optimum Moisture Content (%) :	11.1	9.4	11.2	10.2
Moisture Variation :	-0.2	0.0	0.3	-0.2
Peak Converted Wet Density (t/m³) :	2.121	2.002	2.144*	2.157*
Hilf Density Ratio (%) :	**98.0**	**104.5**	**101.5**	**103.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 152**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250444	250445	250446	250447
Test Number :	547	548	549	550
Sampling Method :	-	-	-	-
Date Sampled :	30/07/2018	30/07/2018	30/07/2018	30/07/2018
Date Tested :	30/07/2018	30/07/2018	30/07/2018	30/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8737 N 31780 RL 55.79	Fill Area 1 (Salmons) E 8730 N 31783 RL 56.35	Fill Area 1 (Salmons) E 8721 N 31788 RL 57.01	Fill Area 1 (Salmons) E 8715 N 31791 RL 57.27
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	12
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	2.373
Field Moisture Content (%) :	11.2	11.6	19.6	13.4
Hilf MDR Number :	250444	250445	250446	250447
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100	99.5	100	101
Field Wet Density (t/m³) :	2.068	2.085	2.090	2.104
Optimum Moisture Content (%) :	11.2	11.6	19.6	13.2
Moisture Variation :	0.0	0.0	0.0	-0.1
Peak Converted Wet Density (t/m³) :	2.102	2.160	2.165	2.185*
Hilf Density Ratio (%) :	**98.5**	**96.5**	**96.5**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 153**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250448	250449	250450	250451
Test Number :	551	552	553	554
Sampling Method :	-	-	-	-
Date Sampled :	30/07/2018	30/07/2018	30/07/2018	30/07/2018
Date Tested :	30/07/2018	30/07/2018	30/07/2018	30/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8806 N 31802 RL 52.814	Fill Area 1 (BPH) E 8807 N 31793 RL 52.9	Fill Area 1 (BPH) E 8810 N 31769 RL 53.057	Fill Area 1 (BPH) E 8808 N 31782 RL 53.0
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	11
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	2.398
Field Moisture Content (%) :	9.6	10.3	12.0	11.0
Hilf MDR Number :	250448	250449	250450	250451
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85.5	87	99	87
Field Wet Density (t/m³) :	2.086	2.079	2.099	2.122
Optimum Moisture Content (%) :	11.2	11.9	12.1	12.7
Moisture Variation :	1.7	1.6	0.1	1.7
Peak Converted Wet Density (t/m³) :	1.999	2.002	2.131	2.063*
Hilf Density Ratio (%) :	**104.5**	**104.0**	**98.5**	**103.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 154**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250516	250517	250518	250519
Test Number :	555	556	557	558
Sampling Method :	-	-	-	-
Date Sampled :	31/07/2018	31/07/2018	31/07/2018	31/07/2018
Date Tested :	31/07/2018	31/07/2018	31/07/2018	31/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8797 N 31755 RL 53.5	Fill Area 1 (BPH) E 8798 N 31766 RL 53.6	Fill Area 1 (BPH) E 8796 N 31779 RL 53.7	Fill Area 1 (BPH) E 8797.5 N 31766 RL 53.6
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	11	-	10	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.575	-	2.585	-
Field Moisture Content (%) :	10.7	10.8	9.5	11.3
Hilf MDR Number :	250516	250517	250518	250519
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	85	85.5	84	85.5
Field Wet Density (t/m³) :	2.213	2.232	2.188	2.176
Optimum Moisture Content (%) :	12.6	12.6	11.3	13.2
Moisture Variation :	1.9	1.8	1.9	1.9
Peak Converted Wet Density (t/m³) :	2.162*	2.123	2.146*	2.117
Hilf Density Ratio (%) :	**102.5**	**105.0**	**102.0**	**103.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 155**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250520	250521	250522	250523
Test Number :	559	560	561	562
Sampling Method :	-	-	-	-
Date Sampled :	31/07/2018	31/07/2018	31/07/2018	31/07/2018
Date Tested :	31/07/2018	31/07/2018	31/07/2018	31/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8623.00 N 31806.00 RL 62.51	Fill Area 1 (Salmons) E 8615.88 N 31806.21 RL 62.61	Fill Area 1 (Salmons) E 8609.10 N 31806.63 RL 63.99	Fill Area 1 (Salmons) E 8602.31 N 31806.60 RL 63.52
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	10	-	9	6
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.526	-	2.521	2.613
Field Moisture Content (%) :	10.7	9.0	9.3	9.7
Hilf MDR Number :	250520	250521	250522	250523
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100	84	84	84
Field Wet Density (t/m³) :	2.171	2.149	2.185	2.182
Optimum Moisture Content (%) :	10.7	10.7	11.1	11.6
Moisture Variation :	0.0	1.8	1.8	1.9
Peak Converted Wet Density (t/m³) :	2.181*	2.133	2.169*	2.151*
Hilf Density Ratio (%) :	**99.5**	**101.0**	**101.0**	**101.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 156**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250524	250525	250526	250527
Test Number :	563	564	565	566
Sampling Method :	-	-	-	-
Date Sampled :	31/07/2018	31/07/2018	31/07/2018	31/07/2018
Date Tested :	31/07/2018	31/07/2018	31/07/2018	31/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8834 N 31755 RL 53.8	Fill Area 1 (BPH) E 8822 N 31757 RL 54.1	Fill Area 1 (BPH) E 8808 N 31760 RL 53.9	Fill Area 1 (BPH) E 8796 N 31763 RL 53.8
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	9	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.597	-	-	-
Field Moisture Content (%) :	11.7	11.6	9.7	11.5
Hilf MDR Number :	250524	250525	250526	250527
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100.5	85.5	87	85.5
Field Wet Density (t/m³) :	2.145	2.122	2.140	2.128
Optimum Moisture Content (%) :	11.6	13.6	11.2	13.4
Moisture Variation :	0.0	1.9	1.5	1.9
Peak Converted Wet Density (t/m³) :	2.138*	2.141	2.055	2.107
Hilf Density Ratio (%) :	**100.5**	**99.0**	**104.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 157**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250528	250529	250530	250531
Test Number :	567	568	569	570
Sampling Method :	-	-	-	-
Date Sampled :	31/07/2018	31/07/2018	31/07/2018	31/07/2018
Date Tested :	31/07/2018	31/07/2018	31/07/2018	31/07/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8735.5 N 31768.83 RL 56.09	Fill Area 1 (Salmons) E 8730.7 N 31771.93 RL 56.46	Fill Area 1 (Salmons) E 8724.81 N 31775.10 RL 56.77	Fill Area 1 (Salmons) E 8719.21 N 31777.98 RL 57.12
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	150	150
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.6	10.9	9.9	10.0
Hilf MDR Number :	250528	250529	250530	250531
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86	85	85.5	86.5
Field Wet Density (t/m³) :	2.075	2.098	2.151	2.093
Optimum Moisture Content (%) :	12.4	12.8	11.6	11.6
Moisture Variation :	1.8	1.9	1.7	1.6
Peak Converted Wet Density (t/m³) :	2.003	2.023	2.042	2.070
Hilf Density Ratio (%) :	**103.5**	**103.5**	**105.5**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy Clay	Sandy Clay
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 158**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250641	250642	250643	250644
Test Number :	571	572	573	574
Sampling Method :	-	-	-	-
Date Sampled :	1/08/2018	1/08/2018	1/08/2018	1/08/2018
Date Tested :	1/08/2018	1/08/2018	1/08/2018	1/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8636.31 N 31799.88 RL 62.37	Fill Area 1 (Salmons) E 8629.57 N 31800.83 RL 62.74	Fill Area 1 (Salmons) E 8624.63 N 31801.31 RL 62.91	Fill Area 1 (Salmons) E 8619.46 N 31802.31 RL 63.19
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	11.1	12.6	12.7	11.9
Hilf MDR Number :	250641	250642	250643	250644
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86	92	106.5	99
Field Wet Density (t/m³) :	2.009	2.013	2.035	2.017
Optimum Moisture Content (%) :	12.9	13.7	11.9	12.0
Moisture Variation :	1.8	1.1	-0.8	0.1
Peak Converted Wet Density (t/m³) :	2.051	2.079	2.103	2.090
Hilf Density Ratio (%) :	**98.0**	**97.0**	**97.0**	**96.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 159**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250645	250646	250647	250648
Test Number :	575	576	577	578
Sampling Method :	-	-	-	-
Date Sampled :	1/08/2018	1/08/2018	1/08/2018	1/08/2018
Date Tested :	1/08/2018	1/08/2018	1/08/2018	1/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8927.36 N 31578.62 RL 55.1	Fill Area 1 (BPH) E 8918.19 N 31584.27 RL 55.6	Fill Area 1 (BPH) E 8939.14 N 31572.86 RL 54.7	Fill Area 1 (BPH) E 8951.7 N 31564.1 RL 54.46
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	9.5	9.7	11.3	13.3
Hilf MDR Number :	250645	250646	250647	250648
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	79	79	95	96.5
Field Wet Density (t/m³) :	2.091	2.065	2.020	2.028
Optimum Moisture Content (%) :	12.0	12.2	11.9	13.8
Moisture Variation :	2.5	2.5	0.6	0.5
Peak Converted Wet Density (t/m³) :	2.110	2.109	2.104	2.109
Hilf Density Ratio (%) :	**99.0**	**98.0**	**96.0**	**96.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 160**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250649	250650	250651	250652
Test Number :	579	580	581	582
Sampling Method :	-	-	-	-
Date Sampled :	1/08/2018	1/08/2018	1/08/2018	1/08/2018
Date Tested :	1/08/2018	1/08/2018	1/08/2018	1/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8630.55 N 31832.14 RL 61.75	Fill Area 1 (Salmons) E 8623.27 N 31833.02 RL 61.92	Fill Area 1 (Salmons) E 8616.91 N 31833.36 RL 62.30	Fill Area 1 (Salmons) E 8610.66 N 31831.27 RL 62.84
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	150	150	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	12.4	12.6	11.0	12.5
Hilf MDR Number :	250649	250650	250651	250652
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	100.5	104.5	108	107
Field Wet Density (t/m³) :	2.080	2.070	2.144	2.116
Optimum Moisture Content (%) :	12.3	12.1	10.2	11.7
Moisture Variation :	-0.1	-0.6	-0.8	-0.8
Peak Converted Wet Density (t/m³) :	2.178	2.179	2.189	2.211
Hilf Density Ratio (%) :	**95.5**	**95.0**	**98.0**	**95.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy Clay	Sandy Clay	Sandy CLAY	Sandy CLAY
Remarks :	MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 161**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250653	250654	250655	250656
Test Number :	583	584	585	586
Sampling Method :	-	-	-	-
Date Sampled :	1/08/2018	1/08/2018	1/08/2018	1/08/2018
Date Tested :	1/08/2018	1/08/2018	1/08/2018	1/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (BPH) E 8796.6 N 31754.8 RL 54.4	Fill Area 1 (BPH) E 8808.5 N 31751.6 RL 54.3	Fill Area 1 (BPH) E 8787.4 N 31768.8 RL 54.2	Fill Area 1 (BPH) E 8788.9 N 31783.8 RL 54.5
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	13	8	9	11
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.677	2.555	2.646	2.561
Field Moisture Content (%) :	9.6	9.3	11.2	10.5
Hilf MDR Number :	250653	250654	250655	250656
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	92.5	82	88.5	99.5
Field Wet Density (t/m³) :	2.197	2.159	2.207	2.205
Optimum Moisture Content (%) :	10.4	11.3	12.7	10.6
Moisture Variation :	0.8	2.0	1.4	0.0
Peak Converted Wet Density (t/m³) :	2.213*	2.184*	2.216*	2.223*
Hilf Density Ratio (%) :	**99.5**	**99.0**	**99.5**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	MDR performed by Gold Coast Laboratory. Corporate Site No. 1900.			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 162**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250721	250722	250723	250724
Test Number :	587	588	589	590
Sampling Method :	-	-	-	-
Date Sampled :	2/08/2018	2/08/2018	2/08/2018	2/08/2018
Date Tested :	2/08/2018	2/08/2018	2/08/2018	2/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Fill Area 1 (Salmons) E 8705.29 N 31806.60 RL 58.78	Fill Area 1 (Salmons) E 8698.18 N 31808.11 RL 58.92	Fill Area 1 (Salmons) E 8690.77 N 31810.12 RL 59.25	Fill Area 1 (Salmons) E 8684.58 N 31811.40 RL 59.62
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	7	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	2.557	-	-
Field Moisture Content (%) :	15.5	15.0	12.3	13.2
Hilf MDR Number :	250721	250722	250723	250724
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	99	99.5	101	99
Field Wet Density (t/m³) :	2.064	2.083	2.053	2.069
Optimum Moisture Content (%) :	15.7	15.1	12.2	13.4
Moisture Variation :	0.2	0.1	-0.1	0.1
Peak Converted Wet Density (t/m³) :	2.085	2.13*	2.078	2.092
Hilf Density Ratio (%) :	**99.0**	**98.0**	**99.0**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-	-	-	-
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 163**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250725	250726		
Test Number :	591	592		
Sampling Method :	-	-		
Date Sampled :	2/08/2018	2/08/2018		
Date Tested :	2/08/2018	2/08/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site (Cut)**	**On Site (Cut)**		
Lot Number :	-	-		
Sample Location :	Fill Area 1 (BPH) E 8816.38 N 31582.7 RL 57.91	Fill Area 1 (BPH) E 8817.6 N 31588.4 RL 58.4		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	6	9		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	2.551	2.554		
Field Moisture Content (%) :	11.1	11.0		
Hilf MDR Number :	250725	250726		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	102	100.5		
Field Wet Density (t/m³) :	2.113	2.125		
Optimum Moisture Content (%) :	10.9	11.0		
Moisture Variation :	-0.2	0.0		
Peak Converted Wet Density (t/m³) :	2.11*	2.09*		
Hilf Density Ratio (%) :	**100.0**	**101.5**		
Minimum Specification :	95	95		
Moisture Specification :	-	-		
Site Selection :	-	-		
Soil Description :	Clayey SAND	Clayey SAND		
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 164**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250729	250730	250731	250732
Test Number :	593	594	595	596
Sampling Method :	-	-	-	-
Date Sampled :	3/08/2018	3/08/2018	3/08/2018	3/08/2018
Date Tested :	3/08/2018	3/08/2018	3/08/2018	3/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Working Layer - House Lots E 8984 N 31541 Final Level	Working Layer - House Lots E 9035 N 31483 Final Level	Working Layer - House Lots E 9005 N 31519 Final Level	Working Layer - House Lots E 9007 N 31544 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	13	12	12	11
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.410	2.464	2.346	2.406
Field Moisture Content (%) :	10.3	10.6	10.2	10.3
Hilf MDR Number :	250729	250730	250731	250732
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	81.5	85.5	83.5	87
Field Wet Density (t/m³) :	2.108	2.130	2.102	2.116
Optimum Moisture Content (%) :	12.6	12.4	12.2	11.8
Moisture Variation :	2.3	1.8	2.0	1.6
Peak Converted Wet Density (t/m³) :	2.163*	2.165*	2.167*	2.176*
Hilf Density Ratio (%) :	**97.5**	**98.5**	**97.0**	**97.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-	-	-	-
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 165**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250733	250734	250735	250736
Test Number :	597	598	599	600
Sampling Method :	-	-	-	-
Date Sampled :	3/08/2018	3/08/2018	3/08/2018	3/08/2018
Date Tested :	3/08/2018	3/08/2018	3/08/2018	3/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Working Layer - House Lots E 8958 N 31567 Final Level	Working Layer - House Lots E 9065 N 31500 Final Level	Working Layer - House Lots E 8944 N 31565 Final Level	Working Layer - House Lots E 8899 N 31600 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	12	10	13	12
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.400	2.314	2.379	2.469
Field Moisture Content (%) :	10.7	9.3	10.0	10.0
Hilf MDR Number :	250733	250734	250735	250736
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84.5	84	82.5	83
Field Wet Density (t/m³) :	2.135	2.124	2.105	2.127
Optimum Moisture Content (%) :	12.7	11.0	12.1	12.1
Moisture Variation :	2.0	1.8	2.1	2.1
Peak Converted Wet Density (t/m³) :	2.163*	2.172*	2.168*	2.184*
Hilf Density Ratio (%) :	**98.5**	**98.0**	**97.0**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-	-	-	-
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam A McDowall

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 166**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250737	250738	250739	250740
Test Number :	601	602	603	604
Sampling Method :	-	-	-	-
Date Sampled :	3/08/2018	3/08/2018	3/08/2018	3/08/2018
Date Tested :	3/08/2018	3/08/2018	3/08/2018	3/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**	**On Site (Cut)**
Lot Number :	-	-	-	-
Sample Location :	Working Layer - House Lots E 8826 N 31593 Final Level	Working Layer - House Lots E 8871 N 31596 Final Level	Working Layer - House Lots E 8592 N 31819 Final Level	Working Layer - House Lots E 8578 N 31803 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	13	12	12	12
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	2.474	2.431	2.361	2.381
Field Moisture Content (%) :	10.6	9.6	10.2	9.9
Hilf MDR Number :	250737	250738	250739	250740
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	87	83.5	85	86.5
Field Wet Density (t/m³) :	2.114	2.127	2.117	2.136
Optimum Moisture Content (%) :	12.2	11.5	12.0	11.5
Moisture Variation :	1.6	1.9	1.8	1.6
Peak Converted Wet Density (t/m³) :	2.182*	2.186*	2.175*	2.163*
Hilf Density Ratio (%) :	**97.0**	**97.5**	**97.5**	**99.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-	-	-	-
Site Selection :	-	-	-	-
Soil Description :	Clayey SAND	Clayey SAND	Clayey SAND	Clayey SAND
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 168**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**21/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	250891	250892		
Test Number :	608	609		
Sampling Method :	-	-		
Date Sampled :	7/08/2018	7/08/2018		
Date Tested :	7/08/2018	7/08/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	Fill Area 1 E 8684.87 N 31792.65 RL 59.30	Fill Area 1 E 8676.08 N 31795.11 RL 59.80		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	11		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	2.613		
Field Moisture Content (%) :	13.6	13.4		
Hilf MDR Number :	250891	250892		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	98	99.5		
Field Wet Density (t/m³) :	2.068	2.098		
Optimum Moisture Content (%) :	13.8	13.5		
Moisture Variation :	0.2	0.1		
Peak Converted Wet Density (t/m³) :	2.093	2.099*		
Hilf Density Ratio (%) :	**99.0**	**100.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 169**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**28/08/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	251065	251066	251067	251068
Test Number :	610	611	612	613
Sampling Method :	-	-	-	-
Date Sampled :	10/08/2018	10/08/2018	10/08/2018	10/08/2018
Date Tested :	10/08/2018	10/08/2018	10/08/2018	10/08/2018
Material Type :	**General Fill**	**General Fill**	**General Fill**	**General Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	-	-	-	-
Sample Location :	E 8647.000 N 31800.000 Final Level	E 8662.000 N 31803.000 Final Level	E 8675.000 N 31803.000 Final Level	E 8683.000 N 31802.000 Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	13.0	13.4	12.2	12.1
Hilf MDR Number :	251065	251066	251067	251068
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	90	97.5	86	95.5
Field Wet Density (t/m³) :	2.043	2.099	2.027	2.078
Optimum Moisture Content (%) :	14.4	13.8	14.2	12.6
Moisture Variation :	1.5	0.3	2.0	0.6
Peak Converted Wet Density (t/m³) :	2.089	2.075	2.078	2.065
Hilf Density Ratio (%) :	**98.0**	**101.0**	**97.5**	**100.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	-2% to +3%
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 170**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**3/09/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	251228	251229	251230	
Test Number :	614	615	616	
Sampling Method :	-	-	-	
Date Sampled :	15/08/2018	15/08/2018	15/08/2018	
Date Tested :	15/08/2018	15/08/2018	15/08/2018	
Material Type :	**General Fill**	**General Fill**	**General Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	-	-	-	
Sample Location :	E 8706.220 N 31798.000 Final Level	E 8720.780 N 31802.000 Final Level	E 8719.110 N 31823.000 Final Level	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	-	-	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	-	-	
Field Moisture Content (%) :	11.5	9.6	8.3	
Hilf MDR Number :	251228	251229	251230	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	85.5	82.5	79.5	
Field Wet Density (t/m³) :	2.127	2.051	2.146	
Optimum Moisture Content (%) :	13.5	11.6	10.4	
Moisture Variation :	2.0	2.0	2.1	
Peak Converted Wet Density (t/m³) :	2.091	2.052	2.086	
Hilf Density Ratio (%) :	**101.5**	**100.0**	**103.0**	
Minimum Specification :	95	95	95	
Moisture Specification :	-2% to +3%	-2% to +3%	-2% to +3%	
Site Selection :	-	-	-	
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 171**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**3/09/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	251723	251724		
Test Number :	617	618		
Sampling Method :	-	-		
Date Sampled :	23/08/2018	23/08/2018		
Date Tested :	23/08/2018	23/08/2018		
Material Type :	**General Fill**	**General Fill**		
Material Source :	**On Site**	**On Site**		
Lot Number :	-	-		
Sample Location :	E 8834.000 N 31653.000 RL 55.600	E 8807.000 N 31668.000 RL 56.600		
Test Depth (mm) :	150	150		
Layer Depth (mm) :	-	-		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	-	-		
Oversize Dry (%) :	-	-		
Oversize Density (t/m³) :	-	-		
Field Moisture Content (%) :	11.7	10.4		
Hilf MDR Number :	251723	251724		
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	86.5	81		
Field Wet Density (t/m³) :	2.090	2.087		
Optimum Moisture Content (%) :	13.5	12.8		
Moisture Variation :	1.8	2.4		
Peak Converted Wet Density (t/m³) :	2.099	2.087		
Hilf Density Ratio (%) :	**99.5**	**100.0**		
Minimum Specification :	95	95		
Moisture Specification :	-2% to +3%	-2% to +3%		
Site Selection :	-	-		
Soil Description :	Sandy CLAY	Sandy CLAY		
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 172**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**3/09/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	251979	251980	251981	251982
Test Number :	619	620	621	622
Sampling Method :	-	-	-	-
Date Sampled :	29/08/2018	29/08/2018	29/08/2018	29/08/2018
Date Tested :	29/08/2018	29/08/2018	29/08/2018	29/08/2018
Material Type :	**Allotment Fill**	**Allotment Fill**	**Allotment Fill**	**Allotment Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	**1293**	**1317**	**1315**	**1319**
Sample Location :	Lot 1293 6m From North Boundary 3m From West Boundary Final Level	Lot 1317 4m From South Boundary 6m From West Boundary Final Level	Lot 1315 4m From North Boundary 6m From West Boundary Final Level	Lot 1319 4m From North Boundary 2m From West Boundary Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	8.9	10.1	10.7	10.7
Hilf MDR Number :	251979	251980	251981	251982
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	75.5	89.5	98.5	85
Field Wet Density (t/m³) :	2.075	2.188	2.053	2.169
Optimum Moisture Content (%) :	11.8	11.3	10.9	12.6
Moisture Variation :	2.9	1.2	0.2	1.9
Peak Converted Wet Density (t/m³) :	2.095	2.145	2.099	2.150
Hilf Density Ratio (%) :	**99.0**	**102.0**	**98.0**	**101.0**
Minimum Specification :	95	95	95	95
Moisture Specification :	-	-	-	-
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 173**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**3/09/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	251983	251984	251985	251986
Test Number :	623	624	625	626
Sampling Method :	-	-	-	-
Date Sampled :	29/08/2018	29/08/2018	29/08/2018	29/08/2018
Date Tested :	29/08/2018	29/08/2018	29/08/2018	29/08/2018
Material Type :	**Allotment Fill**	**Allotment Fill**	**Allotment Fill**	**Allotment Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	**1321**	**1286**	**1296**	**2001**
Sample Location :	Lot 1321 5m From South Boundary 3m From East Boundary Final Level	Lot 1286 4m From South Boundary 2m From East Boundary Final Level	Lot 1296 4m From North Boundary 6m From West Boundary Final Level	Lot 2001 3m From North Boundary 4m From East Boundary Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	6.9	10.1	10.7	11.1
Hilf MDR Number :	251983	251984	251985	251986
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	66	90.5	81.5	83
Field Wet Density (t/m³) :	2.064	2.071	2.083	2.049
Optimum Moisture Content (%) :	10.4	11.2	13.1	13.4
Moisture Variation :	3.6	1.1	2.4	2.2
Peak Converted Wet Density (t/m³) :	2.109	2.141	2.114	2.104
Hilf Density Ratio (%) :	**98.0**	**96.5**	**98.5**	**97.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-	-	-	-
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 174**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**3/09/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	251987	251988	251989	251990
Test Number :	627	628	629	630
Sampling Method :	-	-	-	-
Date Sampled :	29/08/2018	29/08/2018	29/08/2018	29/08/2018
Date Tested :	29/08/2018	29/08/2018	29/08/2018	29/08/2018
Material Type :	**Allotment Fill**	**Allotment Fill**	**Allotment Fill**	**Allotment Fill**
Material Source :	**On Site**	**On Site**	**On Site**	**On Site**
Lot Number :	**2003**	**1138**	**1261**	**1258**
Sample Location :	Lot 2003 5m From North Boundary 7m From East Boundary Final Level	Lot 1138 4m From North Boundary 6m From East Boundary Final Level	Lot 1261 3m From North Boundary 6m From East Boundary Final Level	Lot 1258 4m From North Boundary 4m From East Boundary Final Level
Test Depth (mm) :	150	150	150	150
Layer Depth (mm) :	-	-	-	-
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	-	-	-	-
Oversize Dry (%) :	-	-	-	-
Oversize Density (t/m³) :	-	-	-	-
Field Moisture Content (%) :	10.9	9.6	10.8	8.1
Hilf MDR Number :	251987	251988	251989	251990
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	84.5	82.5	89	77.5
Field Wet Density (t/m³) :	2.051	2.082	2.098	2.106
Optimum Moisture Content (%) :	12.9	11.6	12.1	10.5
Moisture Variation :	2.0	2.0	1.3	2.4
Peak Converted Wet Density (t/m³) :	2.074	2.115	2.142	2.112
Hilf Density Ratio (%) :	**99.0**	**98.5**	**98.0**	**99.5**
Minimum Specification :	95	95	95	95
Moisture Specification :	-	-	-	-
Site Selection :	-	-	-	-
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

MORRISON GEOTECHNIC

Brisbane | Gold Coast | Maroochydore
Unit 1, 35 Limestone Street (PO Box 3063), Darra Q 4076 P (07) 3279 0900 F (07) 3279 0955
ABN: 51 009 878 899
www.morrisongeo.com.au

Hilf Density Ratio Report

Client :	**SHADFORTH'S CIVIL PTY LTD**	Report Number:	**DL18/096 - 175**
Address :	**99 SANDALWOOD LANE, FOREST GLEN, QLD, 4556**	Report Date :	**3/09/2018**
Project Name :	**EARTHWORKS - EVERLEIGH PRECINCT 1.1**	Order Number :	**2161-11002**
Project Number :	**DL18/096**	Test Method :	**AS1289.5.8.1 & 5.7.1**
Location:	**TEVIOT ROAD , GREENBANK**	**Page 1 of 1**	

Sample Number :	251991	251992	251993	
Test Number :	631	632	633	
Sampling Method :	-	-	-	
Date Sampled :	29/08/2018	29/08/2018	29/08/2018	
Date Tested :	29/08/2018	29/08/2018	29/08/2018	
Material Type :	**Allotment Fill**	**Allotment Fill**	**Allotment Fill**	
Material Source :	**On Site**	**On Site**	**On Site**	
Lot Number :	**1256**	**1254**	**1252**	
Sample Location :	Lot 1256 5m From South Boundary 4m From West Boundary Final Level	Lot 1254 6m From North Boundary 4m From East Boundary Final Level	Lot 1252 7m From South Boundary 5m From East Boundary Final Level	
Test Depth (mm) :	150	150	150	
Layer Depth (mm) :	-	-	-	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	-	8	8	
Oversize Dry (%) :	-	-	-	
Oversize Density (t/m³) :	-	2.500	2.520	
Field Moisture Content (%) :	7.6	8.1	9.3	
Hilf MDR Number :	251991	251992	251993	
Hilf MDR Method :	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	AS1289.5.1.1 & 5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	AS1289.5.8.1 & 5.7.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	62.5	65	81.5	
Field Wet Density (t/m³) :	2.081	2.123	2.220	
Optimum Moisture Content (%) :	12.1	12.4	11.4	
Moisture Variation :	4.5	4.3	2.2	
Peak Converted Wet Density (t/m³) :	2.079	2.129*	2.185*	
Hilf Density Ratio (%) :	**100.0**	**99.5**	**101.5**	
Minimum Specification :	95	95	95	
Moisture Specification :	-	-	-	
Site Selection :	-	-	-	
Soil Description :	Sandy CLAY	Sandy CLAY	Sandy CLAY	
Remarks :	-			

* - denotes adjusted for oversize

NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

APPROVED SIGNATORY

Liam Mcdowall (Brisbane) - Branch Manager
NATA Accreditation Number
1162 / 1169

Important Information about Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.

ASFE
THE BEST PEOPLE ON EARTH

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

IIGER06085.0MRP