CHADWICK GEOTECHNICS

REPORT

Level One Inspection and Testing Services

Meridian Estate Stage 22, Lots 2201 to 2243

Prepared for:

Grosvenor Lodge Pty Ltd

April / 2021

Our Ref: 3807351.022.v1

25 Metcalf Street, Dandenong South, Vic 3175, Australia
www.chadwickgeotechnics.com.au

Document Control

Title: Level One Inspection and Testing Services					
Date	Version	Description	Prepared by:	Reviewed by:	Authorised by:
16-04-2021	1	Level One report, 3807351.022.V1	RHB	RHB	RWMc

Distribution:

Grosvenor Lodge Pty Ltd	1 electronic copy
Chadwick Geotechnics Pty Ltd (FILE)	1 electronic copy

Table of contents

1 Introduction

Chadwick Geotechnics Pty Ltd (Chadwick Geotechnics) was engaged by Grosvenor Lodge Pty Ltd, to provide Level 1 Geotechnical Inspection and Testing Authority (GITA) services for the earthworks within Stage 22 of the Meridian Estate in Clyde North.

2 Project details

The project included the preparation and filling of lot's 2201 to 2243. The specification required the earthworks to be completed under Level 1 GITA Supervision, that is, full-time Geotechnical Inspection and Testing of the earthworks. Chadwick Geotechnics were onsite for the duration of the earthworks program.

The location of the site is shown in figure 1 below.

Figure 1: Approximate site location *(Image sourced from Nearmaps)*

3 Geology

Published information[1] shows that the site is primarily underlain by Red Bluff Sandstone (Nbr) (Miocene to Pliocene). Sandstone, conglomerate: pale yellow and brown; fine to coarse-grained, massive to well bedded; cross-bedded; local ironstone.

4 Specification

A summary of the specification is shown below:

Compaction Requirement	95 % Standard Compaction
Moisture Requirement	+/- 3% of the soils Optimum Moisture Content

5 Inspection and testing

The inspection and testing of earthworks has been carried out in accordance with AS3798-2007, 'Guidelines on earthworks for commercial and residential developments', with a frequency of field density tests as per a type one project (large scale operation). Compaction control laboratory testing was undertaken in our NATA accredited laboratories in accordance with AS1289 'Methods of Testing Soils for Engineering Purposes'.

Prior to fill being placed the subgrade was inspected. The inspections were performed in accordance with the Level 1 guidelines presented in AS 3798–2007 Section 5.5. No soft spots were encountered during the inspections, the area was found to be firm and free of vegetation and other deleterious material.

Full time Level 1 Inspection and testing of the filling operations commenced on 28 August 2020 and was completed on 25 September 2020. During this period Chadwick Geotechnics observed the earthworks at the times (as the filling works were intermittent) the earthworks contractor was placing fill. This included the supply of material, conditioning of material (moisture conditioning and oversize removal), placement and compaction of the fill material.

All fill material was placed in lift sequences and Chadwick Geotechnics verified that the surface of the stripped area, and that of additional lifts, was thoroughly scarified and moisture conditioned prior to placement of additional layers to prevent delamination at the layer interface.

Field density and moisture content testing was carried out using a calibrated portable density and moisture gauge in accordance with AS 1289.5.8.1. The HILF rapid compaction test was used for peak converted wet density determinations in accordance with AS 1289.5.7.1. Test locations were recorded using a handheld GPS unit. A site plan showing the field density test locations is provided in Appendix A.

A total of forty four (44) tests were performed during the filling process.

The results show that two (2) tests failed to meet the specification requirements for the project. The earthworks contractor was advised of the tests that failed and the fill relevant to those areas was reworked, reconditioned, re-compacted and subsequently retested. The final results show the tests achieved the specification requirements for the project.

A summary table of Hilf density tests is provided in Appendix B and the laboratory test reports are provided in Appendix C. The Fill certificate is provided in Appendix D.

[1]. VicGeo Earth Resources (https://gsv.vic.gov.au) Geological Unit (250k)

6 Conclusion

On the basis of our inspections and after considering all test results relating to the project, it is our opinion, so far as it is able to be determined, that:

- The materials used by the earthworks contractor met the geotechnical property requirements of the specification.
- The sourced fill was considered to be natural and clean and suitable for use at the site.
- The fill material placed was tested at a suitable frequency in accordance with AS 3798-2007- Table 8.1 and the results indicate the compacted clay achieved the density requirement of the specification.
- Given the consistent construction practices followed by the earthworks contractor and as witnessed by the Chadwick Geotechnics, combined with the satisfactory verification of test results achieved, it is inferred that areas of the site between test locations were performed to the same standard as those areas that have been tested.

It is our opinion that the earthworks undertaken have been performed in accordance with the requirements of Section 8.2 – Level 1 Inspection and Testing - AS3798-2007 “Guidelines on Earthworks for Commercial and Residential Developments”.

7 Applicability

This report has been prepared for the exclusive use of our client Grosvenor Lodge Pty Ltd in good faith and in accordance with the Chadwick Geotechnics quality system for the earthworks filling at the site.

This report is based on the nature of the project and the prevailing conditions between 28 August 2020 and 25 September 2020. No responsibility or liability will be accepted, and Chadwick Geotechnics is indemnified to the full extent permitted by law in respect of the use of this report where there has been a change in the nature of the project or the conditions on site that may alter or affect the conclusions of this report.

Should you require any further information regarding this report, please do not hesitate to contact the undersigned on (03) 8796 7900.

Chadwick Geotechnics Pty Ltd

Report prepared by:	Authorised for Chadwick Geotechnics Pty Ltd by:
	
.....	.....
Robert Barden	Timothy Chadwick
Geotechnical Engineer	Project Director

www.chadwickgeotechnics.com.au

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Appendix A: Density Test Location Plan

LEGEND

19245 HILF DENSITY TEST LOCATION

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 11/01/2021.
2. BASE PLAN PROVIDED BY BEVERIDGE WILLIAMS. PROJECT REFERENCE: 1801767, DRAWING NO: 010. DATE RECEIVED: 25/02/2021.

A3 SCALE 1:1000
0 5 10 15 20 30 40 50 (m)

ORIGINAL IN COLOUR

CHADWICK GEOTECHNICS
www.chadwickgeotechnics.com.au

PROJECT No.	1234567.1000	
DESIGNED	ZKO	Feb.21
DRAWN	KMJA	Feb.21
CHECKED		
APPROVED		DATE

CLIENT **GROSVENOR LODGE PTY LTD**
PROJECT **MERIDIAN ESTATE - STAGE 22**
TITLE LEVEL ONE HILF DENSITY TESTING
HILF DENSITY TEST PLAN
UNDER REVISION 1
SCALE (A3) 1:1000 FIG No. FIGURE 01 REV 1

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Appendix B: Table of field density results

CHADWICK GEOTECHNICS

3807351 - Meridian Estate Stage 22 - HILF Summary

Chadwick Geotechnics
25 Metcalf Stre
Dandenong Sou
Tel : (03) 8796 7900
Fax: (03) 8796 7944

Report No	Sample No	Date	Test Number	Lot Number	Location [E]	Location [N]	RL (m)	Layer	Density Ratio HILF test (≥95%)	Moisture Variation	Pass / Fail	Remarks
HDR:W20DS04575	16664	28/08/2020	1	2212	355384	5781267	33.187	1	100.5	0.5 wet	Pass	
HDR:W20DS04578	16671	29/08/2020	1	2208	355355	5781274	32.694	1	100	0.5 wet	Pass	
HDR:W20DS04578	16672	29/08/2020	2	2215	355386	5781235	33.275	2	99.5	0.5 wet	Pass	
HDR:W20DS04578	16673	29/08/2020	3	2232	355338	5781212	32.772	3	99	OMC	Pass	
HDR:W20DS04607	16861	31/08/2020	1	2205	355310	5781239	32.313	1	99	3.5 wet	Fail	See Retest 17394
HDR:W20DS04607	16862	31/08/2020	2	2201	355315	5781286	32.143	1	99	OMC	Pass	
HDR:W20DS04690	17151	1/09/2020	1	2213	355391	5781249	33.429	2	100.5	0.5 wet	Pass	
HDR:W20DS04690	17152	1/09/2020	2	2217	355350	5781242	32.950	2	96.5	3.5 wet	Fail	See Retest 17337
HDR:W20DS04740	17337	2/09/2020	1	2217	355350	5781242	32.986	Retest	99.5	OMC	Pass	Retest of 17152
HDR:W20DS04758	17394	3/09/2020	1	2205	355310	5781239	32.323	1	104	0.5 wet	Pass	Retest of 16861
HDR:W20DS04758	17395	3/09/2020	2	2206	355329	5781277	32.629	2	99	0.5 dry	Pass	
HDR:W20DS04758	17396	3/09/2020	3	2219	355326	5781235	32.766	2	99.5	0.5 wet	Pass	
HDR:W20DS04821	17627	4/09/2020	1	2202	355312	5781275	32.539	3	98.5	2.5 dry	Pass	
HDR:W20DS04821	17628	4/09/2020	2	2204	355316	5781245	32.767	3	99.5	1.5 dry	Pass	
HDR:W20DS04966	18071	8/09/2020	1	2234	355361	5781191	33.168	1	98.5	1.5 dry	Pass	
HDR:W20DS04966	18072	8/09/2020	2	2230	355320	5781192	32.852	1	100.5	2.0 dry	Pass	
HDR:W20DS05020	18238	9/09/2020	1	2236	355388	5781196	33.494	2	96.5	0.5 dry	Pass	
HDR:W20DS05082	18423	10/09/2020	1	2229	355315	5781207	32.835	2	103	2.0 dry	Pass	
HDR:W20DS05082	18424	10/09/2020	2	2233	355346	5781205	33.163	2	101.5	1.5 dry	Pass	
HDR:W20DS05098	18472	11/09/2020	1	2239	355390	5781175	33.620	2	99.5	0.5 dry	Pass	
HDR:W20DS05206	18857	16/09/2020	1	2237	355399	5781200	33.745	FSL	104.5	2.0 dry	Pass	
HDR:W20DS05206	18858	16/09/2020	2	2235	355371	5781203	33.551	FSL	100	0.5 dry	Pass	
HDR:W20DS05206	18859	16/09/2020	3	2231	355315	5781185	33.179	FSL	98.5	OMC	Pass	

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Chadwick Geotechnics
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Fax: (03) 8796 7944

Report No	Sample No	Date	Test Number	Lot Number	Location [E]	Location [N]	RL (m)	Layer	Density Ratio HILF test (≥95%)	Moisture Variation	Pass / Fail	Remarks
HDR:W20DS05229	18933	17/09/2020	1	2238	355388	5781157	33.448	1	97.5	0.5 dry	Pass	
HDR:W20DS05229	18934	17/09/2020	2	2242	355347	5781167	33.176	1	99	0.5 dry	Pass	
HDR:W20DS05229	18935	17/09/2020	3	2229	355303	5781209	33.045	FSL	100	OMC	Pass	
HDR:W20DS05281	19124	18/09/2020	1	2243	355336	5781169	33.375	FSL	98	0.5 wet	Pass	
HDR:W20DS05281	19125	18/09/2020	2	2239	355383	5781159	33.602	FSL	97.5	0.5 dry	Pass	
HDR:W20DS05281	19126	18/09/2020	3	2228	355421	5781252	33.625	1	101	0.5 dry	Pass	
HDR:W20DS05282	19127	19/09/2020	1	2203	355310	5781257	32.743	FSL	95	0.5 dry	Pass	
HDR:W20DS05282	19128	19/09/2020	2	Cardillia St	355415	5781324	32.970	FSL	96.5	0.5 dry	Pass	
HDR:W20DS05283	19129	19/09/2020	1		355362	5781319	32.663	1.0	98	2.5 dry	Pass	
HDR:W20DS05283	19130	19/09/2020	2		355326	5781322	32.196	1.0	98	0.5 dry	Pass	
HDR:W20DS05308	19202	21/09/2020	1	2225	355431	5781288	33.546	FSL	102	1.5 dry	Pass	
HDR:W20DS05308	19203	21/09/2020	2	2222	355428	5781330	33.328	FSL	102	2.5 dry	Pass	
HDR:W20DS05310	19205	21/09/2020	1		355310	5781315	32.216	2.0	98.5	0.5 dry	Pass	
HDR:W20DS05310	19206	21/09/2020	2		355391	5781313	33.079	2.0	98.5	2.5 dry	Pass	
HDR:W20DS05310	19207	21/09/2020	3		355364	5781342	33.557	FSL	97	0.5 dry	Pass	
HDR:W20DS05320	19245	22/09/2020	1		355333	5781365	32.200	FSL	103.5	2.0 dry	Pass	
HDR:W20DS05347	19330	23/09/2020	1		355396	5781324	33.214	2.0	103.5	2.0 dry	Pass	
HDR:W20DS05390	19516	24/09/2020	1	2222	355428	5781357	33.301	1	95	0.5 dry	Pass	
HDR:W20DS05391	19517	24/09/2020	1		355399	5781356	33.430	3.0	98	0.5 dry	Pass	
HDR:W20DS05391	19518	24/09/2020	2		355363	5781310	32.877	3.0	98	OMC	Pass	
HDR:W20DS05399	19558	25/09/2020	1		355343	5781320	32.953	4.0	98.5	0.5 dry	Pass	
HDR:W20DS05399	19558	25/09/2020	1		355343	5781320	32.953	4.0	98.5	0.5 dry	Pass	

Appendix C NATA endorsed laboratory reports

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS04575
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 17/09/2020

Sample Details

Location:	Clyde
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	Clay

Sample Data

Sample ID	S20DS-16664					
Field Sample ID	1					
Date Tested	28/08/2020					
E:	3553843					
N:	5781267					
Layer:	1					
Field and Laboratory Data						
Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Wet Density (t/m³)	1.99					
Peak Converted Wet Density (t/m³)	1.98					
Compactive Effort	Standard					
Moisture Variation (%)	0.5 wet					
Hilf Density Ratio (%)	**100.5**					

Comments

CHADWICK GEOTECHNICS

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Dandenong South
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Report No: HDR:W20DS04578
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 17/09/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-16671	S20DS-16672	S20DS-16673			
Field Sample ID	1	2	3			
Date Tested	29/08/2020	29/08/2020	29/08/2020			
Field and Laboratory Data						
Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Wet Density (t/m³)	1.98	1.97	1.97			
Peak Converted Wet Density (t/m³)	1.98	1.98	1.98			
Compactive Effort	Standard	Standard	Standard			
Moisture Variation (%)	0.5 wet	0.5 wet	0.0			
Hilf Density Ratio (%)	**100.0**	**99.5**	**99.0**			

Comments

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Report No: HDR:W20DS04607
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 17/09/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-16861	S20DS-16862				
Field Sample ID	1	2				
Date Tested	31/08/2020	31/08/2020				
E:	1486.733	1491.553				
N:	400.2220	446.576				
EL:	32.313	32.143				
Lot:	2205	2201				
Layer:	1	1				
Field and Laboratory Data						
Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	1.85	1.98				
Peak Converted Wet Density (t/m³)	1.86	2.00				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	3.5 wet	0.0				
Hilf Density Ratio (%)	**99.0**	**99.0**				

Comments

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Report No: HDR:W20DS04690
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 2/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-17151	S20DS-17152				
Field Sample ID	1	2				
Date Tested	1/09/2020	1/09/2020				
E:	1567.519	1527.099				
N:	410.210	403.291				
EL:	33.429	32.950				
Lot:	2213	2217				
Layer:	2	2				
Field and Laboratory Data						
Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	2.02	1.86				
Peak Converted Wet Density (t/m³)	2.01	1.93				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	0.5 wet	3.5 wet				
Hilf Density Ratio (%)	**100.5**	**96.5**				

Comments

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Report No: HDR:W20DS04740
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 17/09/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material:

Sample Data

Sample ID	S20DS-17337					
Field Sample ID	1					
Date Tested	2/09/2020					
E:	1527.191					
N:	402.602					
Layer / Lot:	32.986					
	2 / 2217					
	Retest					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Wet Density (t/m³)	1.96					
Peak Converted Wet Density (t/m³)	1.97					
Compactive Effort	Standard					
Moisture Variation (%)	0.0					
Hilf Density Ratio (%)	**99.5**					

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS04758
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 17/09/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-17394	S20DS-17395	S20DS-17396			
Field Sample ID	1	2	3			
Date Tested	3/09/2020	3/09/2020	3/09/2020			
E:	1487.028	1506.089	1503.203			
N:	400.178	438.191	395.542			
EL:	32.323	32.629	32.766			
Lot:	2205	2206	2219			
Layer:	1	2	2			
Field and Laboratory Data						
Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Wet Density (t/m³)	1.98	1.88	1.93			
Peak Converted Wet Density (t/m³)	1.90	1.90	1.94			
Compactive Effort	Standard	Standard	Standard			
Moisture Variation (%)	0.5 wet	0.5 dry	0.5 wet			
Hilf Density Ratio (%)	**104.0**	**99.0**	**99.5**			

Comments

CHADWICK GEOTECHNICS

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Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 17/09/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-17627	S20DS-17628				
Field Sample ID	1	2				
Date Tested	4/09/2020	4/09/2020				
E:	1488.866	1493.016				
N:	435.665	406.215				
EL:	32.539	32.767				
Lot:	2202	2204				
Layer:	3	3				

Field and Laboratory Data

Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	1.88	1.92				
Peak Converted Wet Density (t/m³)	1.91	1.92				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	2.5 dry	1.5 dry				
Hilf Density Ratio (%)	**98.5**	**99.5**				

Comments

CHADWICK GEOTECHNICS

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25 Metcalf Street
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Report No: HDR:W20DS04966
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 17/09/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-18071	S20DS-18072				
Field Sample ID	1	2				
Date Tested	8/09/2020	8/09/2020				
E:	1538.223	1497.159				
N:	351.569	352.586				
EL:	33.168	32.852				
Lot:	2234	2230				
Layer:	1	1				

Field and Laboratory Data

Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	1.95	2.00				
Peak Converted Wet Density (t/m³)	1.98	1.99				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	1.5 dry	2.0 dry				
Hilf Density Ratio (%)	**98.5**	**100.5**				

Comments

CHADWICK GEOTECHNICS

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DANDENONG SOUTH, VIC 3175

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Report No: HDR:W20DS05020
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 6/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-18238					
Field Sample ID	1					
Date Tested	9/09/2020					
E:	1564.988					
N:	357.005					
EL:	33.494					
Lot:	2236					
Layer:	2					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
Field Wet Density (t/m³)	1.89					
Peak Converted Wet Density (t/m³)	1.96					
Compactive Effort	Standard					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**96.5**					

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05082
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: J. Lamont
(Dandenong Laboratory Manager)
12712 Date of Issue: 27/11/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-18423	S20DS-18424				
Field Sample ID	1	2				
Date Tested	10/09/2020	10/09/2020				
E:	1491.710	1522.459				
N:	368.225	365.560				
EL:	32.835	33.163				
Lot:	2229	2233				
Layer:	2	2				
Field and Laboratory Data						
Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	2.01	1.95				
Peak Converted Wet Density (t/m³)	1.95	1.92				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	2.0 dry	1.5 dry				
Hilf Density Ratio (%)	**103.0**	**101.5**				

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05098

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Date of Issue:

Sample Details

Location:	Clyde North
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95%
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	CLAY

Sample Data

Sample ID	S20DS-18472					
Field Sample ID	1					
Date Tested	11/09/2020					
Lot No:	2239					
E:	1567.230					
N:	335.497					
Elv:	33.62					
	Layer 2					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Wet Density (t/m³)	2.02					
Peak Converted Wet Density (t/m³)	2.04					
Compactive Effort	Standard					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**99.5**					

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05206
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 2/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-18857	S20DS-18858	S20DS-18859			
Field Sample ID	1	2	3			
Date Tested	16/09/2020	16/09/2020	16/09/2020			
E:	1575.735	1547.962	1491.551			
N:	360.719	364.219	345.674			
EL:	33.745	33.551	33.179			
Lot:	2237	2235	2231			
Layer:	FSL	FSL	FSL			

Field and Laboratory Data

Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Wet Density (t/m³)	1.98	2.02	2.07			
Peak Converted Wet Density (t/m³)	1.89	2.02	2.11			
Compactive Effort	Standard	Standard	Standard			
Moisture Variation (%)	2.0 dry	0.5 dry	0.0			
Hilf Density Ratio (%)	**104.5**	**100.0**	**98.5**			

Comments

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Report No: HDR:W20DS05229
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 2/10/2020

Sample Details

Location:	Clyde North
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95%
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	Gravelly Clay

Sample Data

Sample ID	S20DS-18933	S20DS-18934	S20DS-18935			
Field Sample ID	1	2	3			
Date Tested	17/09/2020	17/09/2020	17/09/2020			
E	1565.099	1523.295	1479.418			
N	317.610	327.924	370.013			
Elv	33.448	33.176	33.045			
	Layer 1	Layer 1	FSL			

Field and Laboratory Data

Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Wet Density (t/m³)	2.01	2.07	2.10			
Peak Converted Wet Density (t/m³)	2.07	2.10	2.10			
Compactive Effort	Standard	Standard	Standard			
Moisture Variation (%)	0.5 dry	0.5 dry	0.0			
Hilf Density Ratio (%)	**97.5**	**99.0**	**100.0**			

Comments

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Report No: HDR:W20DS05281
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 6/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-19124	S20DS-19125	S20DS-19126			
Field Sample ID	1	2	3			
Date Tested	18/09/2020	18/09/2020	18/09/2020			
E:	1513.114	1559.857	1598.166			
N:	330.083	319.810	413.416			
EL:	33.375	33.602	33.625			
Lot:	2243	2239	2228			
Layer:	FSL	FSL	1			
Field and Laboratory Data						
Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Wet Density (t/m³)	2.06	2.05	2.12			
Peak Converted Wet Density (t/m³)	2.10	2.10	2.09			
Compactive Effort	Standard	Standard	Standard			
Moisture Variation (%)	0.5 wet	0.5 dry	0.5 dry			
Hilf Density Ratio (%)	**98.0**	**97.5**	**101.0**			

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05282
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number 12719
12712

Approved Signatory: M. Robinson (Team Leader)
Date of Issue: 24/02/2021

Sample Details

Location:	Cordillia Street
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95%
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	Clay

Sample Data

Sample ID	S20DS-19127	S20DS-19128				
Field Sample ID	1	2				
Date Tested	19/09/2020	19/09/2020				
E:	1487.121	1591.846				
N:	417.618	484.499				
EL:	32.743	32.970				
Lot:	2203	FSL				
Layer:	FSL					

Field and Laboratory Data

Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	1.97	2.02				
Peak Converted Wet Density (t/m³)	2.07	2.09				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	0.5 dry	0.5 dry				
Hilf Density Ratio (%)	**95.0**	**96.5**				

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05283
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate Clyde
Project No.: 3807351.022A
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 2/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-19129	S20DS-19130				
Field Sample ID	1	2				
Date Tested	19/09/2020	19/09/2020				
E:	1538.778	1502.676				
N:	479.732	482.888				
EL:	32.663	32.196				
Layer:	1	1				
Field and Laboratory Data						
Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	1.92	2.00				
Peak Converted Wet Density (t/m³)	1.97	2.04				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	2.5 dry	0.5 dry				
Hilf Density Ratio (%)	**98.0**	**98.0**				

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05308
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 6/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-19202	S20DS-19203				
Field Sample ID	1	2				
Date Tested	21/09/2020	21/09/2020				
E:	1607.557	1604.291				
N:	448.643	490.586				
EL:	33.546	33.328				
Lot:	2225	2222				
Layer:	FSL	FSL				
Field and Laboratory Data						
Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	1.99	1.99				
Peak Converted Wet Density (t/m³)	1.95	1.94				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	1.5 dry	2.5 dry				
Hilf Density Ratio (%)	**102.0**	**102.0**				

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05310
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate Clyde
Project No.: 3807351.022A
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 6/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-19205	S20DS-19206	S20DS-19207			
Field Sample ID	1	2	3			
Date Tested	21/09/2020	21/09/2020	21/09/2020			
E:	1486.496	1568.162	1541.027			
N:	476.042	473.607	503.019			
EL:	32.216	33.079	33.557			
Layer:	2	2	FSL			
Field and Laboratory Data						
Depth of Test (mm)	175	175	175			
Depth of Layer (mm)	200	200	200			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Wet Density (t/m³)	2.01	1.98	2.05			
Peak Converted Wet Density (t/m³)	2.04	2.01	2.12			
Compactive Effort	Standard	Standard	Standard			
Moisture Variation (%)	0.5 dry	2.5 dry	0.5 dry			
Hilf Density Ratio (%)	**98.5**	**98.5**	**97.0**			

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05320
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate Clyde
Project No.: 3807351.022A
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 6/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-19245					
Field Sample ID	1					
Date Tested	22/09/2020					
E:	1510.164					
N:	525.701					
EL:	32.200					
Layer:	FSL					

Field and Laboratory Data

Depth of Test (mm)	150					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Wet Density (t/m³)	1.99					
Peak Converted Wet Density (t/m³)	1.92					
Compactive Effort	Standard					
Moisture Variation (%)	2.0 dry					
Hilf Density Ratio (%)	**103.5**					

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05347
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate Clyde
Project No.: 3807351.022A
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 6/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-19330					
Field Sample ID	1					
Date Tested	23/09/2020					
E:	1572.497					
N:	484.868					
EL:	33.214					
Layer:	2					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Wet Density (t/m³)	2.12					
Peak Converted Wet Density (t/m³)	2.05					
Compactive Effort	Standard					
Moisture Variation (%)	2.0 dry					
Hilf Density Ratio (%)	**103.5**					

Comments

CHADWICK GEOTECHNICS

Think Act Safe Be

Dandenong South
ACN 143 009 330
25 Metcalf Street
DANDENONG SOUTH, VIC 3175

Ph: + 61 3 8796 7900
Fax: +61 3 9706 9431

Report No: HDR:W20DS05390
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 22
Project No.: 3807351.022
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

Accreditation Number 12719
12712

Approved Signatory: M. Robinson
(Team Leader)
Date of Issue: 24/02/2021

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S20DS-19516					
Field Sample ID	1					
Date Tested	24/09/2020					
E:	1605.192					
N:	518.370					
EL:	33.301					
Lot:	2222					
Layer:	1					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Wet Density (t/m³)	1.89					
Peak Converted Wet Density (t/m³)	1.99					
Compactive Effort	Standard					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**95.0**					

Comments

CHADWICK GEOTECHNICS

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Fax: +61 3 9706 9431

Report No: HDR:W20DS05391
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate Clyde
Project No.: 3807351.022A
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

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Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 6/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-19517	S20DS-19518				
Field Sample ID	1	2				
Date Tested	24/09/2020	24/09/2020				
E:	1575.990	1539.443				
N:	516.671	470.664				
EL:	33.430	32.877				
Layer:	3	3				
Field and Laboratory Data						
Depth of Test (mm)	175	175				
Depth of Layer (mm)	200	200				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Wet Density (t/m³)	2.04	2.04				
Peak Converted Wet Density (t/m³)	2.07	2.08				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	0.5 dry	0.0				
Hilf Density Ratio (%)	**98.0**	**98.0**				

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W20DS05399
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate Clyde
Project No.: 3807351.022A
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA Accreditation No.12719

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory: M. Longfield
(Senior Technician)
12712 Date of Issue: 6/10/2020

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95% (+- 3% of OMC)
Field Test procedures: AS 1289.5.8.1
Laboratory Test procedures: AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Rocky Clay

Sample Data

Sample ID	S20DS-19558					
Field Sample ID	1					
Date Tested	25/09/2020					
E:	1519.307					
N:	481.066					
EL:	32.953					
Layer:	4					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Wet Density (t/m³)	1.91					
Peak Converted Wet Density (t/m³)	1.95					
Compactive Effort	Standard					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**98.5**					

Comments

Appendix D: Controlled fill certificate

CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT	: Lot No's: 2201 to 2243 Meridian Estate Stage 22	Chadwick Geotechnics REF: 3807351.022.v1	
CLIENT	: Grosvenor Lodge Pty Ltd PO Box 4136 DANDENONG SOUTH VIC 3164	DATE	: April / 2021

SUMMARY

Chadwick Geotechnics Pty Ltd conducted Level 1 inspection and testing, in accordance with Section 8.2 Level 1 inspection and Testing *AS3798-2007, Guidelines on earthworks for commercial and residential developments,* during the filling of the site.

So far as it is able to be determined, the fill was placed in accordance with the Specification that required a minimum density ratio of 95% of HILF Density (AS1289.5.7.1) to be achieved.

LIMITATIONS

This Certificate has been commissioned for the filling of the area mentioned above. No responsibility or liability will be accepted for the use of this report for any purpose other than that for which Chadwick Geotechnics Pty Ltd was engaged, specifically for Level 1 Inspection and Testing of the structural fill (excluding top soil).

This report is based on the conditions present and factors affecting the soil at the time of inspection (28 August 2020 and 25 September 2020) No responsibility or liability will be accepted and Chadwick Geotechnics Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions since the site testing.

CHADWICK GEOTECHNICS PTY LTD

Robert Barden
Geotechnical Engineer

Timothy Chadwick
Project Director

CHADWICK
GEOTECHNICS