



REPORT

Level One Inspection and Testing Services

Meridian Central Estate Stage 34, Clyde
Lot's 3406 to 3415 & Lot's 3422 to 3427

Prepared for:

Grosvenor Lodge Pty Ltd

15 June 2022

Our Ref: 3807351.034.v1

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Document Control

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Grosvenor Lodge Pty Ltd

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1 Introduction

As part of the construction of the Meridian Central Estate development in Clyde North, Chadwick Geotechnics Pty Ltd (Chadwick Geotechnics), has been engaged by Grosvenor Lodge Pty Ltd to provide Geotechnical Inspection and Testing Authority (GITA) services for the earthworks within Stage 34 of the Estate.

This report presents the earthworks supervision methods and density testing results for the residential lot's 3406 to 3415 and 3422 to 3427 within the Stage 34 site. The earthworks were completed between 17 December 2021 and 20 January 2022.

The specification required the earthworks to be completed under Level 1 Supervision, that is, full-time Inspection and Testing of the earthworks. Chadwick Geotechnics were onsite for the duration of the earthworks program.

2 Project details

2.1 Location

The Meridian Central Estate is in Clyde North, the Stage 34 site is located North of Stage 35 and East of Stage 33 within the Meridian Central site. The stage is being developed as a residential development.

A site plan of the area is included in Appendix A.

2.2 Fill specification

A summary of the specification is shown below:

- All filling in excess of 300mm depth shall be constructed to specifications satisfying the requirements of AS 3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments".
- All filling works shall be undertaken with supervision to the standard detailed as "Level 1 Inspection and Testing" in AS 3798-2007, such that the supervisor will issue a notice detailing that the works comply with the specifications and drawings.
- The fill soils to comply with the 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007, and the following:
 - Maximum particle size of 150mm.
 - Particles over 37.5mm diameter not to exceed 20% of the material.
 - Organic soils, topsoil, silts, or soils containing organic matter, wood, plastics, metal or other deleterious materials are not acceptable.
- Subgrade to be proof rolled in presence of the Level 1 Inspector prior to the placement of engineered fill.
- Fill to be compacted in near horizontal layers.
- Compaction to achieve a ratio of at least 95% Standard MDD (maximum dry density).
- Frequency of testing to be in accordance with Table 8.1 of AS3798-2007.

2.3 Roles

The organisations and their roles are presented in Table 2.1 below.

Table 2.1 Project roles

Role	Organisation
Developer	Grosvenor Lodge Pty Ltd
Geotechnical Inspection and Testing Authority (GITA)	Chadwick Geotechnics Pty Ltd
Civil Designer / Superintendent	Beveridge Williams Pty Ltd
Earthworks Contractor	Brown Property Group Pty Ltd

2.4 Source of material

The material used on site was transported from local sources.

2.5 General

The inspection and testing of earthworks have 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 1 project (large scale operation). Compaction control laboratory testing was undertaken within Chadwick Geotechnics NATA accredited laboratories in accordance with AS1289 'Methods of Testing Soils for Engineering Purposes'.

2.6 Subgrade inspection

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. The stripped surface was stripped to natural clay and proof rolled on the 15 and 16 December 2021, and 14 January 2022. The area was found to be firm and free of vegetation and other deleterious material. All pre-existing uncontrolled fill was removed prior to the placement of engineered fill to achieve the design levels.

2.7 Earthwork supervision

Full time Level 1 inspection and testing of the Stage 34 filling operations commenced on 17 December 2021 and was completed on 20 January 2022. During this period Chadwick Geotechnics was on site all the time (except when there were no earthworks) and observed the earthworks, the placing of fill including 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 subgrade and additional lifts were thoroughly scarified, and moisture conditioned prior to placement of additional layers to prevent delamination at the layer interface.

Below are two photographs of typical earthwork operations completed during earthworks, See Photographs 2.7.1 and 2.7.2 below.



Photograph 2.7.1: Proof Roll



Photograph 2.7.2: Material placement

2.8 Earthwork equipment

The fill was placed and compacted using vibrating Pad foot rollers. Water trucks with water cannons attached were used to moisture condition the soil materials.

2.9 Geotechnical sampling and testing

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 handheld GPS units.

A total of 28 tests were performed across the Stage 34 area during the filling process.

The results show that all tests achieved the specification requirements for the project.

A site plan showing the field density test locations is provided in Appendix A. A summary of the Hilf density test reports is provided within Appendix B, and all the test reports are provided within Appendix C. Controlled fill certificate are provided within Appendix D.

3 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 fill material placed was tested at a suitable frequency in accordance with AS 3798-2007- Table 8.1 and the results indicate the compacted material achieved the minimum density requirement of the specification.
- Given the consistent construction practices followed by the earthworks contractor, and as witnessed by 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 of AS3798-2007 - Level 1 Inspection and Testing.

4 Applicability

This report has been prepared for the exclusive use of our client Grosvenor Lodge Pty Ltd , with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Recommendations and opinions in this report are based on data from discrete investigation locations. The nature and continuity of subsoil away from these locations are inferred but it must be appreciated that actual conditions could vary from the assumed model.

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:

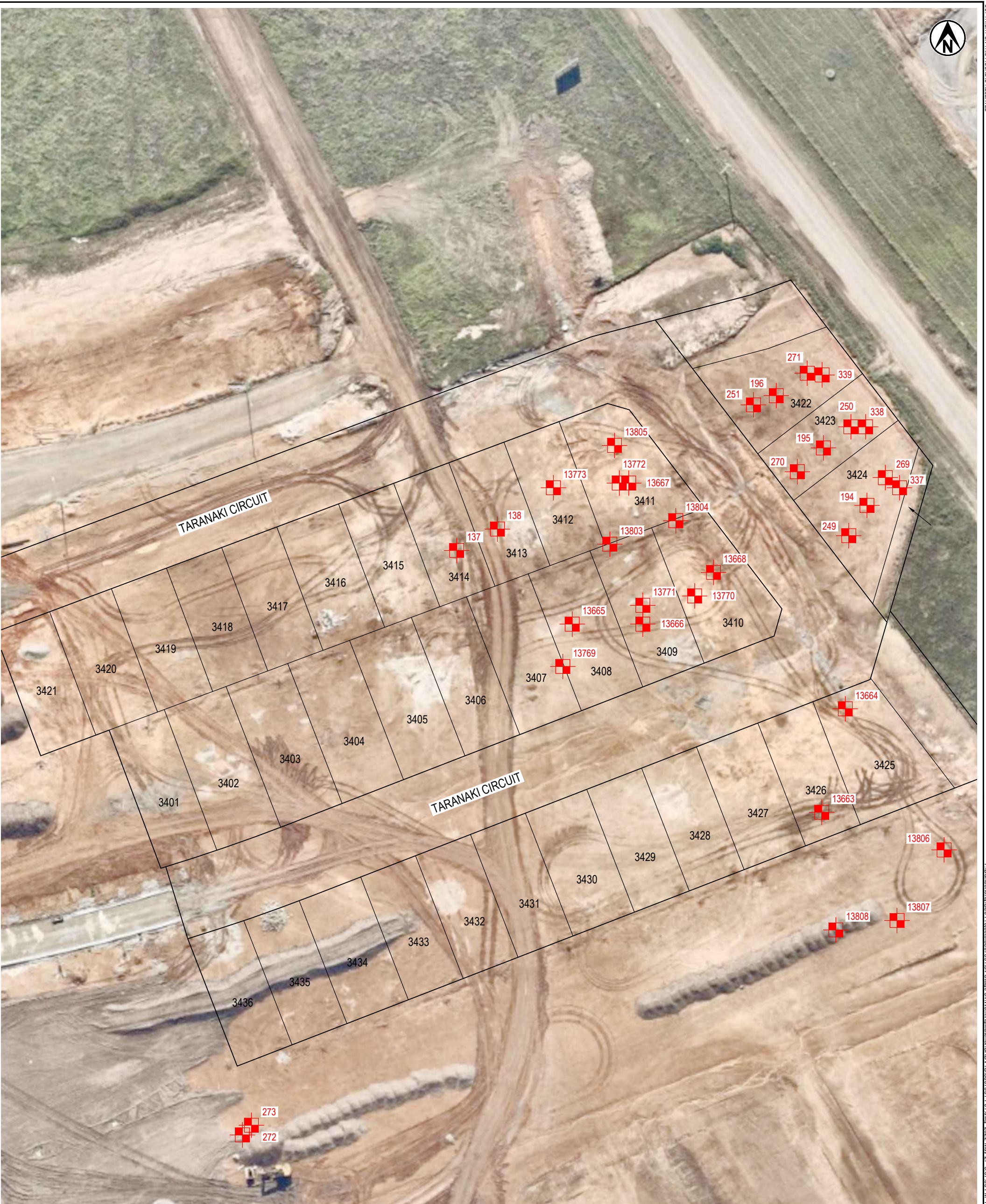


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Robert Barden
Project Manager


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Tim Chadwick
Project Director

17-Jun-22
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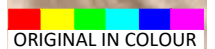
Appendix A: Site plan



LEGEND

 11360
HILF DENSITY TEST LOCATION

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD. IMAGERY DATE: 25/04/2022.

A3 SCALE 1:750
0 5 10 15 20 25 30 35 40 (m)
 ORIGINAL IN COLOUR

PROJECT No. 3807351			CLIENT GROSVENOR LODGE PTY LTD		
DESIGNED	MSI	May.22	PROJECT MERIDIAN ESTATE - STAGE 34		
DRAWN	KMJA	May.22	TITLE LEVEL ONE HILF DENSITY TESTING HILF DENSITY TEST LOCATION PLAN		
CHECKED			UNIVERSITY DIVISION 1		
APPROVED		DATE	SCALE (A3) 1:750	FIG No. 3807351-F01	REV 1

Appendix B: Hilf density test summary



Meridian Estate Stage 34 - 3807351.034

HILF Density Testing Summary

Chadwick Geotechnics
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Report No	Sample No	Test Number	Date	Easting	Northing	Layer/RL	Density Ratio ($\geq 95\%$)	Moisture Variation From OMC (%)	Pass / Fail	Remarks
HDR:W21DS03723	13663	1	17/12/2021	356224	5781606	42.3	100	2.0 dry	Pass	
HDR:W21DS03723	13664	2	17/12/2021	356229	5781628	41.822	99.5	2.0 dry	Pass	
HDR:W21DS03723	13665	3	17/12/2021	356171	5781646	42.702	97.5	2.5 dry	Pass	
HDR:W21DS03724	13666	1	18/12/2021	356186	5781646	41.88	99.5	2.5 dry	Pass	
HDR:W21DS03724	13667	2	18/12/2021	356183	5781676	41.439	102.5	2.0 dry	Pass	
HDR:W21DS03724	13668	3	18/12/2021	356201	5781657	41.78	99	2.5 dry	Pass	
HDR:W21DS03753	13769	1	20/12/2021	356169	5781637	42.929	95.5	omc	Pass	
HDR:W21DS03753	13770	2	20/12/2021	356197	5781652	41.903	109	2.5 dry	Pass	
HDR:W21DS03753	13771	3	20/12/2021	356186	5781650	42.313	102.5	2.5 dry	Pass	
HDR:W21DS03753	13772	4	20/12/2021	356181	5781676	41.603	104	2.5 dry	Pass	
HDR:W21DS03753	13773	5	20/12/2021	356167	5781675	41.941	103.5	1.0 dry	Pass	
HDR:W21DS03764	13803	1	21/12/2021	356179	5781663	42.341	103.5	3.0 dry	Pass	
HDR:W21DS03764	13804	2	21/12/2021	356193	5781668	41.978	103.5	2.5 dry	Pass	
HDR:W21DS03764	13805	3	21/12/2021	356180	5781684	41.641	104.5	3.0 dry	Pass	
HDR:W21DS03766	13806	1	21/12/2021	356250	5781598	41.922	103.5	2.5 dry	Pass	Stage 35
HDR:W21DS03766	13807	2	21/12/2021	356240	5781583	42.355	103	2.5 dry	Pass	Stage 35
HDR:W21DS03766	13808	3	21/12/2021	356227	5781581	42.586	102.5	2.5 dry	Pass	Stage 35
HDR:W22DS00047	137	1	14/01/2022	356146.459	5781661.67	42.723	97.5	3.0 dry	Pass	



Meridian Estate Stage 34 - 3807351.034

HILF Density Testing Summary

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Report No	Sample No	Test Number	Date	Easting	Northing	Layer/RL	Density Ratio (≥95%)	Moisture Variation From OMC (%)	Pass / Fail	Remarks
HDR:W22DS00047	138	2	14/01/2022	356155.11	5781666.218	42.335	95.5	3.0 dry	Pass	
HDR:W22DS00057	194	1	17/01/2022	356233.606	5781671.243	40.674	102	2.5 dry	Pass	
HDR:W22DS00057	195	2	17/01/2022	356224.36	5781683.469	40.521	108	3.0 dry	Pass	
HDR:W22DS00057	196	3	17/01/2022	356214.343	5781694.582	40.213	114	3.0 dry	Pass	
HDR:W22DS00074	249	1	18/01/2022	356229.747	5781664.813	41.009	101	3.0 dry	Pass	
HDR:W22DS00074	250	2	18/01/2022	356230.198	5781687.961	40.427	97	3.0 dry	Pass	
HDR:W22DS00074	251	3	18/01/2022	356209.494	5781692.625	40.574	99.5	1.0 dry	Pass	
HDR:W22DS00084	269	1	19/01/2022	356237.505	5781677.15	40.824	102.5	3.0 dry	Pass	
HDR:W22DS00084	270	2	19/01/2022	356218.826	5781678.415	41.136	106.5	3.0 dry	Pass	
HDR:W22DS00084	271	3	19/01/2022	356220.924	5781699.361	40.37	112.5	3.0 dry	Pass	
HDR:W22DS00085	272	1	19/01/2022	356100.941	5781537.418	44.788	101	2.5 dry	Pass	Stage 35
HDR:W22DS00085	273	2	19/01/2022	356102.853	5781539.464	45.112	110.5	0.5 dry	Pass	Stage 35
HDR:W22DS00095	337	1	20/01/2022	356240.535	5781675.006	41.046	111	3.5 dry	Pass	
HDR:W22DS00095	338	2	20/01/2022	356233.322	5781687.954	40.872	98	2.5 dry	Pass	
HDR:W22DS00095	339	3	20/01/2022	356224.086	5781698.987	40.569	96	2.0 dry	Pass	

Appendix C: Hilf density testing reports



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Report No: HDR:W21DS03723


Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.:
TRN:

CG Request No.:
Lot No.:

Accredited for compliance with ISO/IEC 17025
 - Testing



Accreditation Number: 12719
 Site Number: 12712

Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 20/12/2021

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Clyde North
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: Silty Clay

Sample Data

Sample ID	S21DS-13663	S21DS-13664	S21DS-13665		
Field Sample ID	1	2	3		
Date Tested	17/12/2021	17/12/2021	17/12/2021		
E:	2399.662 (356224)	2405.633 (356229)	2346.492 (356171)		
N:	764.575 (5781606)	785.237 (5781628)	803.244 (5781646)		
RL / Layer:	42.300 / 1	41.822 / 1	42.702 / 1		
Lot:	3426	3425	3408		
Other:	Sample 1	Sample 2	Sample 3		

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)	2.03	1.99	1.93		
Peak Converted Wet Density (t/m³)	2.03	2.00	1.98		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	2.0 dry	2.0 dry	2.5 dry		
Hilf Density Ratio (%)	100.0	99.5	97.5		

Comments



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

Ph: + 61 3 8796 7900
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Report No: HDR:W21DS03724

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.:
TRN:

CG Request No.:
Lot No.:

Accredited for compliance with ISO/IEC 17025
 - Testing

M. Singh

Accreditation Number: 12719
 Site Number: 12712

Approved Signatory: M. Singh
 (Field Technician)
 Date of Issue: 27/05/2022

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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: Silty Clay

Sample Data

Sample ID	S21DS-13666	S21DS-13667	S21DS-13668		
Field Sample ID	1	2	3		
Date Tested	18/12/2021	18/12/2021	18/12/2021		
E:	2342.268 (356186)	2360.073 (356183)	2376.045 (356201)		
N:	830.700 (5781646)	834.413 (5781676)	813.756 (5781657)		
RL / Layer:	41.880 / 1	41.439 / 1	41.780 / 1		
Lot:	3409	3411	3410		
Other:	Sample 4	Sample 5	Sample 6		

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/m ³)	1.99	2.07	1.97		
Peak Converted Wet Density (t/m ³)	2.00	2.02	1.98		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	2.5 dry	2.0 dry	2.5 dry		
Hilf Density Ratio (%)	99.5	102.5	99.0		

Comments



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Report No: HDR:W21DS03753

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing

Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 22/12/2021
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Sample Details

Location: Clyde North
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: Silty Clay

Sample Data

Sample ID	S21DS-13769	S21DS-13770	S21DS-13771	S21DS-13772	S21DS-13773
Field Sample ID	1	2	3	4	5
Date Tested	20/12/2021	20/12/2021	20/12/2021	20/12/2021	20/12/2021
E:	2346.249 (356169)	2375.264 (356197)	2362.120 (356186)	2358.196 (356181)	2343.660 (356167)
N:	795.792 (5781637)	814.722 (35781652)	808.718 (5781650)	837.202 (5781676)	833.437 (5781675)
RL / Layer:	42.929 / 2	41.903 / 2	42.313 / 2	41.603 / 2	41.941 / 2
Lot:	3408	3410	3409	3411	3412
Other:	Sample 7	Sample 8	Sample 9	Sample 10	Sample 11

Field and Laboratory Data

Depth of Test (mm)	75	225	225	225	225
Depth of Layer (mm)	100	250	250	250	250
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0
Field Wet Density (t/m³)	2.06	2.11	2.03	1.98	1.92
Peak Converted Wet Density (t/m³)	2.16	1.94	1.98	1.91	1.86
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.0	2.5 dry	2.5 dry	2.5 dry	1.0 dry
Hilf Density Ratio (%)	95.5	109.0	102.5	104.0	103.5

Comments



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Report No: HDR:W21DS03764

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing



Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 23/12/2021
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Sample Details

Location: Clyde North
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: Silty Clay

Sample Data

Sample ID	S21DS-13803	S21DS-13804	S21DS-13805		
Field Sample ID	1	2	3		
Date Tested	21/12/2021	21/12/2021	21/12/2021		
E:	2356.424 (356179)	2368.322 (356193)	2358.160 (356180)		
N:	820.436 (5781663)	826.112 (5781668)	842.702 (5781684)		
RL /Layer:	42.341 / 3	41.978 / 3	41.641 / 3		
Lot:	3409	3410	3411		
Other:	Sample 12	Sample 13	Sample 14		

Field and Laboratory Data

Depth of Test (mm)	225	225	125		
Depth of Layer (mm)	250	250	150		
AS Sieve Size (mm)	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0		
Field Wet Density (t/m³)	2.00	1.99	2.02		
Peak Converted Wet Density (t/m³)	1.93	1.92	1.93		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	3.0 dry	2.5 dry	3.0 dry		
Hilf Density Ratio (%)	103.5	103.5	104.5		

Comments



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Report No: HDR:W21DS03766

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 35
Project No.: 3807351.035
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing

Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 23/12/2021
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Clyde North
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	S21DS-13806	S21DS-13807	S21DS-13808		
Field Sample ID	1	2	3		
Date Tested	21/12/2021	21/12/2021	21/12/2021		
E:	2428.214 (356250)	2415.518 (356240)	2402.945 (356227)		
N:	756.682 (5781598)	742.972 (5781583)	738793 (5781581)		
RL / Layer:	41.922 / 1	42.355 / 1	42.586 / 1		
Lot:	3512	3511	3510		
Other:	Sample 1	Sample 2	Sample 3		

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/m ³)	2.07	1.94	2.01		
Peak Converted Wet Density (t/m ³)	2.00	1.89	1.96		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	2.5 dry	2.5 dry	2.5 dry		
Hilf Density Ratio (%)	103.5	103.0	102.5		

Comments



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Report No: HDR:W22DS00047

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing

Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 20/01/2022
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Location: Clyde North
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	S22DS-00137	S22DS-00138			
Field Sample ID	1	2			
Date Tested	14/01/2022	14/01/2022			
Lot No:	3414	3413			
E:	2323.199	2331.850			
N:	822.649	827.197			
Elv:	42.723	42.335			

Field and Laboratory Data

Depth of Test (mm)	225	225			
Depth of Layer (mm)	250	250			
AS Sieve Size (mm)	19.0	19.0			
Oversize Wet (%)	0	0			
Field Wet Density (t/m³)	1.99	1.83			
Peak Converted Wet Density (t/m³)	2.04	1.91			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	3.0 dry	3.0 dry			
Hilf Density Ratio (%)	97.5	95.5			

Comments



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Report No: HDR:W22DS00057

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing



Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 18/01/2022
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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	S22DS-00194	S22DS-00195	S22DS-00196		
Field Sample ID	1	2	3		
Client Sample ID	17	18	19		
Date Tested	17/01/2022	17/01/2022	17/01/2022		
Lot No:	3424	3423	3422		
E:	2410.346	2401.100	2391.083		
N:	832.222	844.448	855.561		
Elv:	40.674	40.521	40.213		

Field and Laboratory Data

Depth of Test (mm)	225	225	225		
Depth of Layer (mm)	250	250	250		
Field Wet Density (t/m³)	2.01	2.01	2.08		
Peak Converted Wet Density (t/m³)	1.97	1.86	1.82		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	2.5 dry	3.0 dry	3.0 dry		
Hilf Density Ratio (%)	102.0	108.0	114.0		

Comments



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Report No: HDR:W22DS00074

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing

Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 19/01/2022
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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	S22DS-00249	S22DS-00250	S22DS-00251		
Field Sample ID	1	2	3		
Date Tested	18/01/2022	18/01/2022	18/01/2022		
Lot No:	3424	3423	3422		
E:	2406.487	2406.938	2386.234		
N:	825.792	848.940	853.604		
Elv:	41.009	40.427	40.574		

Field and Laboratory Data

Depth of Test (mm)	225	225	225		
Depth of Layer (mm)	250	250	250		
Field Wet Density (t/m ³)	1.90	1.89	1.86		
Peak Converted Wet Density (t/m ³)	1.88	1.95	1.87		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	3.0 dry	3.0 dry	1.0 dry		
Hilf Density Ratio (%)	101.0	97.0	99.5		

Comments



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Report No: HDR:W22DS00084

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing

Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 20/01/2022
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

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	S22DS-00269	S22DS-00270	S22DS-00271		
Field Sample ID	1	2	3		
Date Tested	19/01/2022	19/01/2022	19/01/2022		
Lot No:	3424	3423	3422		
E:	2414.245	2395.566	2397.664		
N:	838.129	839.394	860.340		
Elv:	40.824	41.136	40.370		

Field and Laboratory Data

Depth of Test (mm)	275	275	275		
Depth of Layer (mm)	300	300	300		
Field Wet Density (t/m ³)	2.01	2.11	2.04		
Peak Converted Wet Density (t/m ³)	1.96	1.97	1.81		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	3.0 dry	3.0 dry	3.0 dry		
Hilf Density Ratio (%)	102.5	106.5	112.5		

Comments



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Report No: HDR:W22DS00085

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 35
Project No.: 3807351.035
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing



Accreditation Number: 12719
 Site Number: 12712

Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 20/01/2022

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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	S22DS-00272	S22DS-00273			
Field Sample ID	1	2			
Date Tested	19/01/2022	19/01/2022			
Lot No:	3501	3501			
E:	2277.681	2279.593			
N:	698.397	700.443			
Elv:	44.788	45.112			

Field and Laboratory Data

Depth of Test (mm)	275	275			
Depth of Layer (mm)	300	300			
Field Wet Density (t/m³)	1.94	2.03			
Peak Converted Wet Density (t/m³)	1.93	1.83			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	2.5 dry	0.5 dry			
Hilf Density Ratio (%)	101.0	110.5			

Comments



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Report No: HDR:W22DS00095

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Meridian Estate - Stage 34
Project No.: 3807351.034
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing



Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 21/01/2022
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

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	S22DS-00337	S22DS-00338	S22DS-00339		
Field Sample ID	1	2	3		
Date Tested	20/01/2022				
Lot No:	3424	3423	3422		
E:	2417.275	2410.062	2400.826		
N:	835.985	848.933	859.966		
Elv:	41.046	40.872	40.569		

Field and Laboratory Data

Depth of Test (mm)	275	275	275		
Depth of Layer (mm)	300	300	300		
Field Wet Density (t/m³)	2.02	1.90	1.94		
Peak Converted Wet Density (t/m³)	1.82	1.94	2.02		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	3.5 dry	2.5 dry	2.0 dry		
Hilf Density Ratio (%)	111.0	98.0	96.0		

Comments

Appendix D: Controlled Fill certificate



CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : Lot No's: 3406 to 3415 and 3422 to 3427 Chadwick Geotechnics REF: 3807351.034.v1
Meridian Central Estate Stage 34

CLIENT : Grosvenor Lodge Pty Ltd DATE : 15 June 2022
PO Box 4136
DANDENONG SOUTH VIC 3164

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 topsoil).

This report is based on the conditions present and factors affecting the soil at the time of inspection (17 December 2021 and was completed on 20 January 2022). 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

A handwritten signature in black ink that reads 'Robert Barden'.

Robert Barden
Project Manager

A handwritten signature in blue ink that reads 'Timothy Chadwick'.

Timothy Chadwick
Project Director

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