CHADWICK GEOTECHNICS

REPORT

Level 1 Geotechnical Inspection and Testing Authority Services

Meridian Green Estate Clyde North Stage 50A Lots 5011 to 5029

Prepared for:

Greenridge Properties Pty Ltd

15 April 2025

Our Ref: 1091936.050A.v1

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

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Document Control

Title:	Level One Inspection and testing Services.				
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by**
15 April 2025	1091936.050A.R1.V1	Final Report	RHB	RWMC	MCDM

1 Introduction

Chadwick Geotechnics Pty Ltd (Chadwick Geotechnics), was engaged by Greenridge Properties Pty Ltd, to provide Level 1 Geotechnical Inspection and Testing Authority (GITA), services for the earthworks conducted within Stage 50 of the Meridian Green Estate in Clyde North. The Stage 50 site is split into two stages called, Stage 50A and 50B, both stages were constructed at the same time by the earthwork's contractor. This report relates to the Stage 50A works only. Testing was undertaken between 17 August and 30 January 2025 for this stage of works.

Level 1 GITA services as defined in AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Development," requires full time inspection and field and laboratory testing of earthworks in accordance with AS1289 "Methods of Testing Soils for Engineering Purposes."

2 Project details

2.1 Location

Stage 50A is located across the northern section of Stage 50, the site is south of Guling Rise and west of Marquess Crescent in Clyde North. Stage 53 and the school site are within the same development area.

The included works are shown on the Site Plan in **Appendix A**. Figure 2.1 below is an extract from Nearmap taken at the time of writing this report.

Figure 2.1: Extract from Nearmap

2.2 Roles

The organisations and their roles are presented in Table 2.1

Table 2.1: Roles on the Project

Role	Organisation
Developer	Greenridge Properties Pty Ltd
Geotechnical Inspection and Testing Authority (GITA)	Chadwick Geotechnics Pty Ltd
Designer / Superintendent	Charlton Degg Pty Ltd
Earthworks Contractor	Brown Property Group Pty Ltd

Chadwick Geotechnics undertook the field density testing, and the compaction control laboratory testing was conducted in our NATA accredited laboratories.

2.3 Dates on Site

Geotechnical technical and engineering staff from Chadwick Geotechnics were onsite for the duration of the earthworks program on the days shown in Table 2.2 below.

Table 2.2: Level 1 GITA – Onsite Presence

Month	Dates on site
August 2024	17, 21
January 2025	15, 16, 17, 20, 22, 24, 28, 29, 30

2.4 Included Areas

This report is applicable to material placed by the contractor on the residential lots within Meridian Green Estate Stage 50A, as shown on the Site Plan in **Appendix A,** and with reference to Section 2.5 (Excluded Areas) of this report.

The following Lots were filled (or partially filled) during the Level 1 GITA supervision:

- The residential lots filled include Lots 5011 to 5029.

2.5 Excluded Areas

This report does not include fill outside the general boundary of the filled areas as shown in **Appendix A** of this report. No fill was placed on the lots not mentioned in Section 2.4 of this report.

Backfill of trenches for the underground services, fill on footpaths, driveways and roads, or placement of topsoil, were not part of the scope for the works supervised by Chadwick Geotechnics.

3 Specifications

The works were to be conducted in general accordance with the 'Guidelines on earthworks for commercial and residential developments' of AS3798-2007.

The following items were adopted as part of the project earthworks specifications:

- All Filling, in excess, of 200mm depth within the residential lots shall be undertaken to specifications satisfying the requirements of AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Development".
- 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 prior to placement of an engineered fill.
- Fill to be compacted in near horizontal layers not exceeding 250mm loose thickness.
- Compaction to achieve a ratio of at least 95% Standard Maximum Dry Density (SMDD).
- Frequency of testing to be in accordance with Table 8.1 of AS3798-2007.
- Finished fill surface to be surveyed prior to placement of topsoil.

4 Inspection and Testing

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 Table 8.1 (explained in Section 4.5 of this report). Compaction control laboratory testing was performed in a Chadwick Geotechnics NATA accredited laboratory in accordance with AS1289 'Methods of Testing Soils for Engineering Purposes'.

4.1 Earthworks

The earthworks for the project comprised of the following phases:

- Stripping of topsoil from the proposed fill areas.
- Assessment, remediation, and proof rolling of subgrade.
- Geotechnical compliance testing of the soils used for fill, and,
- Placement and compaction of engineered fill.

4.2 Fill material

Material used for the construction of the fill comprised of local gravelly and silty clays won from the road boxing and trench excavations on this and the surrounding sites. Some imported fill was also placed.

Samples were taken from the site comprising of local material used for fill was taken for geotechnical compliance testing during the works. The material compliance test results are summarised in **Table 4.1** The laboratory test certificate is attached in **Appendix C.**

Table 4.1: Compliance test Result Summary

Sample #	Particle Size Distribution (PSD)						Liquid Limit %	Plastic Limit %	Plasticity Index %	Source
	37.5 mm	13.2 mm	4.75 mm	1.18 mm	425 µm	0.75 µm				
S23DS-06926/1	100	100	99	94	85	73	71	21	50	On - Site
S25DS-00227/1	100	100	98	91	82	68	62	22	40	On - Site

The laboratory test results indicate the fill material is clay of high plasticity and satisfied the requirements of the Specification.

The material was deemed as being derived from natural soils. The soil is considered as 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007.

The fill material was not tested for classification of 'Fill Material' as defined in EPA Publication IWRG621. Environmental testing is not within Chadwick Geotechnics scope.

Any observed organic or deleterious matter including any oversize cobbles or boulders were removed from the tested areas during the fill placement.

Photographs of typical materials used during construction are shown below.

Photograph 4.1: Photographs of the material used on site

Photograph 1: Typical on-site clay material

Photograph 2: Silty Mottled Orange Brown Clay

4.3 Subgrade Assessment / Proof Roll

The Subgrade of the site was progressively assessed during the period Chadwick Geotechnics personnel were on site.

Subgrade assessments were conducted following the removal of the topsoil that was present on site.

The subgrade inspections were performed in accordance with the Level 1 guidelines presented in AS3798–2007 Section 5.5. No soft spots or deflections were encountered during the inspections and the area was found to be firm and free of vegetation and other deleterious material.

Two photographs of the subgrade assessment phase at the project are shown below.

Photograph 4.2: Subgrade assessment photographs

Photograph 3: Subgrade preparation with Pad foot roller

Photograph 4: Subgrade assessment with a loaded water cart

4.4 Engineered Fill Construction

All fill material was brought by tandem trucks or from local or imported sources. The fill was spread with a bulldozer and compacted with a pad foot roller. A water cart was present onsite during the works for moisture conditioning of the materials.

All fill material was placed in lift sequences comprising horizontal layers. 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. Once the placed fill was approved, the layer was compacted accordingly.

Chadwick Geotechnics personnel were on site on a fulltime basis during the placement, moisture conditioning, compaction, and testing of the fill on the dates noted in Table 2.2 of this report.

The following machinery was on site during earthworks.

Table 4.2: Earthworks plant on site

Equipment type	Model
Dozer	**CAT D6 Dozer**
Pad foot roller	**CAT 15 Tonne CP56B**
Water cart	**1**
Scraper	**1**
Dump trucks	**Tandem**
Excavator	**1**

Photographs of typical machinery on site used during construction are shown below.

Photograph 4.3: General Earthwork machinery and fill construction photographs

Photograph 5: Pad foot Roller compacting.

Photograph 6: Water cart moisture conditioning

Photograph 7: Bulldozer.

Photograph 8: Scraper

4.5 Density and Moisture testing

Field density and moisture content testing was undertaken progressively during construction on the compacted fill using a calibrated portable density and moisture gauge in accordance with AS1289.5.8.1. The HILF rapid compaction test was used for peak converted wet density determinations in accordance with AS1289.5.7.1. Test locations were recorded using a handheld GPS unit. A site plan showing the field density test locations is provided in **Appendix A**.

Testing was undertaken under the frequencies listed below, subject to the area and volume worked on the day of testing:

- 1 test per material type per layer per 2500m² or 1 test per 500m³ distributed reasonably evenly or 3 tests per lot – whichever requires the most tests in accordance with Type 1 Earthworks (large scale operations) as defined in Table 8.1 of the AS3798-2007;

Thirty-seven (37) tests were performed during the filling process. Nine (9) of the tests did not achieve the recommended density or moisture ratio initially. The failed areas were reworked and retested accordingly. The retests returned passing density and moisture test results.

A summary table of HILF density tests is provided in **Appendix B** and the laboratory test reports are provided in **Appendix C**. Two photographs of field density testing conducted on site are shown below.

Photograph 4.4: Field Density/Moisture Testing photographs

Photo 9: Field density/moisture test

Photo 10: Field density/moisture test

5 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 to be determined, that:

- The materials, used by the earth-works contractor met the geotechnical property requirements of the specification.
- The sourced fill was, considered to be natural, 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.
- Based on observations made by Chadwick Geotechnics Level 1 personal and the results of field and laboratory tests, we consider that the engineered fill within the site (noted in Section 2.5), as far as we have been able to reasonably determine, have been placed in general accordance with the intent of the specification.
- 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.

After earthwork construction works the maintenance of the fill is the sole responsibility of the Contractor. If the fill is not well maintained or protected with a sacrificial layer of topsoil or other fill, the uppermost layers and the exposed faces of the engineered fill may deteriorate as a result from exposure to varying weather conditions which can cause cracking or heaving of the fill. Any deterioration will need to be remediated prior to further construction on the site. Chadwick Geotechnics has not provided supervision since the above date and is not responsible for any subsequent deterioration that may have occurred or may occur since that date.

6 Applicability

This report has been prepared for the exclusive use of our client Greenridge Properties 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 17 August 2023 and 30 January 2025. 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:

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Robert Barden

Project Manager

Authorised for Chadwick Geotechnics Pty Ltd by:

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Michael DiMeglio

Project Director

Report reviewed by:

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Robert McKenzie

Principal Geotechnical Engineer

RPEV Number: PE0005222

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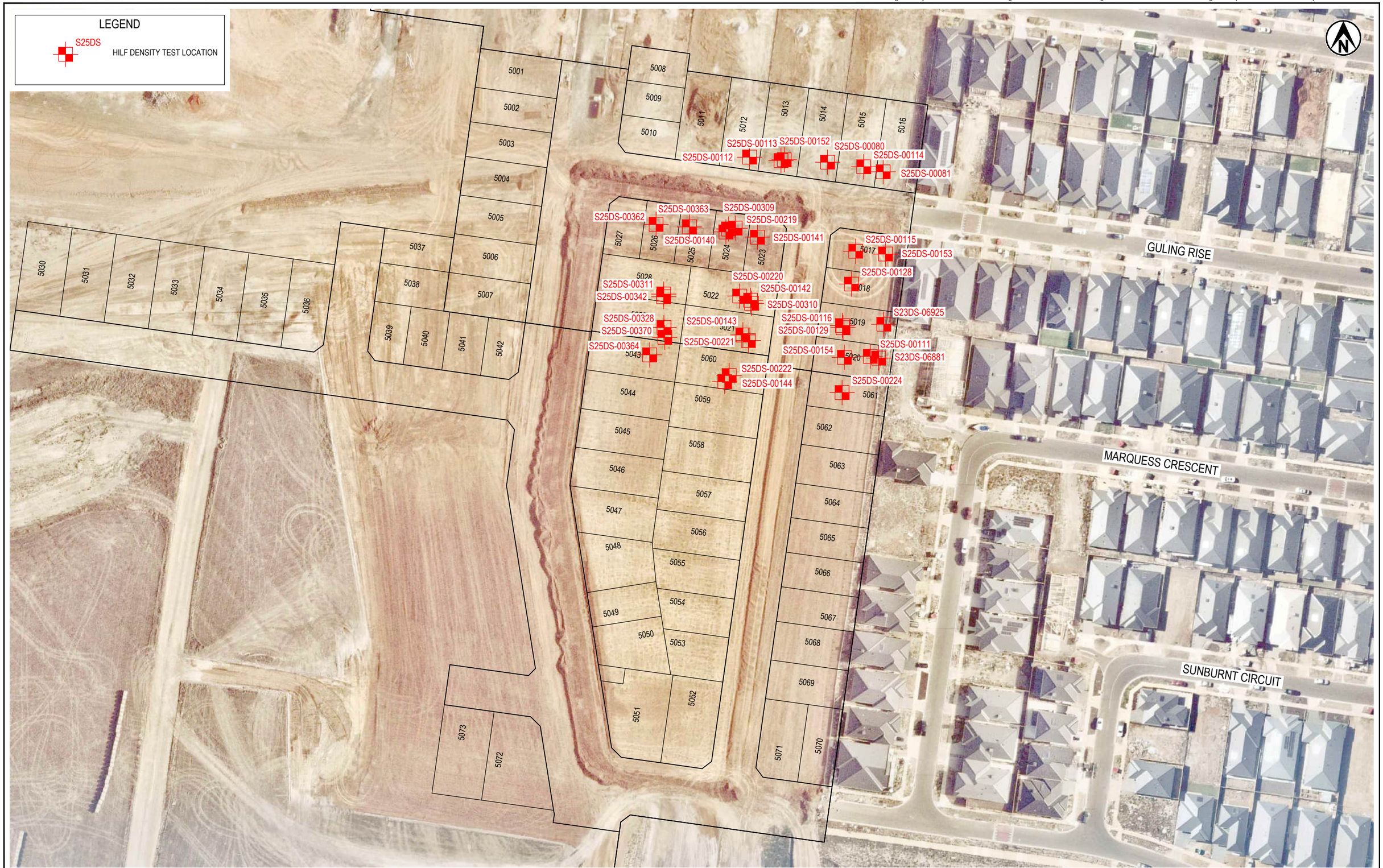
Appendix A Test Location Plan

T:\Dandenong\Geo Projects\1091936\1091936.050 Stage 50 Meridian Greens Estate\Stage 50A\CAD\FIG\1091936.050A-F01.dwg 2025-Apr-14 3:53:03 PM Plotted By: KATHRYN JACKSON



CHADWICK GEOTECHNICS
www.chadwickgeotechnics.com.au

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 01/02/2025.
2. BASE PLAN PROVIDED BY GREENRIDGE PROPERTIES PTY LTD REF: 1669-50A Design RevG - BPG.dwg AND 1669-50B Design RevC.dwg. DATE RECEIVED: 13/03/2025.

A3 SCALE 1:1250
0 25 50 75 (m)

ORIGINAL IN COLOUR

PROJECT No.	1091936.050A	
DESIGNED	STPA	Apr.25
DRAWN	KMJA	Apr.25
CHECKED	RHB	Apr.25
	R. BARDEN	14.04.2025
	APPROVED	DATE

CLIENT **GREENRIDGE PROPERTIES PTY LTD**
PROJECT **MERIDIAN GREEN ESTATE - STAGE 50A**
TITLE LEVEL ONE HILF DENSITY TESTING
HILF DENSITY TEST LOCATION PLAN
SCALE (A3) 1:1250 FIG No. 1091936.050A-F01 REV 1

Appendix B Hilf Density Test Summary

CHADWICK GEOTECHNICS

Meridian Green, 1091936.050 Stage 50A

HILF Density Testing - Field Summary

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Think Act Be Safe

Report No	Sample No	Date	Test Number	Lot No	Easting	Northing	Layer/RL	Density Ratio (≥95 %)	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W23DS02005	S23DS-06881	17/08/2023	1	5022 / 1	357229	5781397	36.589	100	0 wet	PASS	
HDR:W23DS02019	S23DS-06925	21/08/2023	3	5021 / 3	357231	5781409	36.91	99.5	3 wet	PASS	
HDR:W25DS00030	S25DS-00080	15/01/2025	1	5014 / 1	357210	5781467	37.491	96.5	2.5 dry	PASS	
HDR:W25DS00030	S25DS-00081	15/01/2025	2	5016 / 1	357230	5781463	36.55	104	2.5 dry	PASS	
HDR:W25DS00040	S25DS-00111	16/01/2025	5	5020 / 1	357226	5781397	36.354	102	3 dry	PASS	
HDR:W25DS00040	S25DS-00112	16/01/2025	6	5012 / 1	357182	5781469	38.408	99	0.5 dry	PASS	
HDR:W25DS00040	S25DS-00113	16/01/2025	7	5013 / 2	357194	5781467	37.786	104.5	4.5 dry	Fail	See Retest S25DS-00152
HDR:W25DS00040	S25DS-00114	16/01/2025	8	5015 / 2	357223	5781465	36.783	100.5	3 dry	PASS	
HDR:W25DS00040	S25DS-00115	16/01/2025	9	5017 / 2	357221	5781435	36.939	98	3 dry	PASS	
HDR:W25DS00040	S25DS-00116	16/01/2025	10	5019 / 2	357216	5781408	36.933	101	2.5 dry	PASS	
HDR:W25DS00046	S25DS-00128	17/01/2025	5	5018 / 3	357219	5781423	36.169	98	2 dry	PASS	
HDR:W25DS00046	S25DS-00129	17/01/2025	6	5019 / 3	357216	5781408	36.926	99	3 dry	PASS	
HDR:W25DS00052	S25DS-00140	20/01/2025	1	5024 / 1	357174	5781442	38.377	104.5	4.5 dry	Fail	See Retest S25DS-00219
HDR:W25DS00052	S25DS-00141	20/01/2025	2	5023 / 1	357185	5781440	38.085	102	2.5 dry	PASS	
HDR:W25DS00052	S25DS-00142	20/01/2025	3	5022 / 1	357183	5781417	38.134	103.5	5.5 dry	Fail	See Retest S25DS-00220
HDR:W25DS00052	S25DS-00143	20/01/2025	4	5021 / 1	357180	5781405	38.089	105.5	4.5 dry	Fail	See Retest S25DS-00221

Meridian Green, 1091936.050 Stage 50A

HILF Density Testing - Field Summary

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
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Fax: (03) 9706 9431
www.chadwickgeotechnics.com.au

Report No	Sample No	Date	Test Number	Lot No	Easting	Northing	Layer/RL	Density Ratio (≥95 %)	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W25DS00052	S25DS-00144	20/01/2025	5	5060 / 1	357174	5781388	37.934	107.5	4.5 dry	Fail	See Retest S25DS-00222
HDR:W25DS00052	S25DS-00145	20/01/2025	6	4054 / 1	357174	5781376	37.758	101.5	3 dry	PASS	
HDR:W25DS00052	S25DS-00152	20/01/2025	11	5013 / 2	357195	5781468	37.72	100.5	2.5 dry	PASS	Retest of S25DS-00113
HDR:W25DS00052	S25DS-00153	20/01/2025	12	5017 / 4	357231	5781434	36.878	95	2 dry	PASS	
HDR:W25DS00052	S25DS-00154	20/01/2025	13	5020 / 4	357216	5781397	36.817	98	2.5 dry	PASS	
HDR:W25DS00071	S25DS-00219	22/01/2025	1	5024 / -	357177	5781443	38.295	103.5	4.5 dry	Fail	Retest of S25DS-00140 See 00309
HDR:W25DS00071	S25DS-00220	22/01/2025	2	5022 / 1	357179	5781419	38.195	102.5	4.5 dry	Fail	Retest of S25DS-00142 See 00310
HDR:W25DS00071	S25DS-00221	22/01/2025	3	5021 / 1	357182	5781403	38.056	104	2.5 dry	PASS	Retest of S25DS-00143
HDR:W25DS00071	S25DS-00222	22/01/2025	4	5060 / 1	357175	5781390	37.976	97	2 dry	PASS	Retest of S25DS-00144
HDR:W25DS00071	S25DS-00223	22/01/2025	5	5058 / 1	357172	5781362	37.605	98.5	3 dry	PASS	Retest of S25DS-00146
HDR:W25DS00071	S25DS-00224	22/01/2025	6	5061 / 5	357216	5781384	36.775	105.5	3 dry	PASS	
HDR:W25DS00093	S25DS-00309	24/01/2025	1	5024 / 1	357175	5781443	38.3	101.5	2.5 dry	PASS	Retest of S25DS-00219
HDR:W25DS00093	S25DS-00310	24/01/2025	2	5022 / 1	357183	5781416	38.151	96.5	2.5 dry	PASS	Retest of S25DS-00220
HDR:W25DS00093	S25DS-00311	24/01/2025	3	5028 / 1	357152	5781420	38.949	99	4.5 dry	Fail	See Retest S25DS-00342
HDR:W25DS00097	S25DS-00328	28/01/2025	1	5029 / -	357152	5781408	38.95	97.5	4 dry	Fail	See Retest S25Ds-00370
HDR:W25DS00103	S25DS-00342	29/01/2025	2	5028 / 1	357152	5781419	38.939	100.5	2.5 dry	PASS	Retest of S25DS-00311
HDR:W25DS00114	S25DS-00362	30/01/2025	1	5026 / -	357149	5781445	39.168	102	0 dry	PASS	
HDR:W25DS00114	S25DS-00363	30/01/2025	2	5025	357161	5781444	38.794	100.5	2.5 dry	PASS	
HDR:W25DS00114	S25DS-00364	30/01/2025	3	5043 / 2	357147	5781398	39.082	100.5	2.5 dry	PASS	
HDR:W25DS00114	S25DS-00370	30/01/2025	9	5025 / -	357152	5781404	39.144	98.5	0 wet	PASS	Retest of S25DS-00328
HDR:W25DS00114	S25DS-00371	30/01/2025	10	5048 / -	357144	5781321	37.054	100.5	2.5 dry	PASS	Retest of S25DS-00329

Appendix C NATA endorsed laboratory reports

CHADWICK GEOTECHNICS

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Report No: HDR:W23DS02005
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
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. Longfield (Senior Technician)
Date of Issue: 23/08/2023

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Sandy Silty Clay

Sample Data

Sample ID	S23DS-06881					
Field Sample ID	1					
Date Tested	17/08/2023					
Time Tested	08:17					
E:	357228.713					
N:	5781396.615					
EL:	36.589					
Lot / Layer:	5022 / 1					

Field and Laboratory Data

Depth of Test (mm)	225					
Depth of Layer (mm)	250					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	22.2					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.97					
Field Dry Density (t/m³)	1.61					
Peak Converted Wet Density (t/m³)	1.97					
Optimum Moisture Content (%)	22.0					
Compactive Effort	Standard					
Moisture Ratio (%)	100.0					
Moisture Variation (%)	0.0					
Hilf Density Ratio (%)	**100.0**					

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W23DS02019
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
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. Longfield (Senior Technician)
Date of Issue: 23/08/2023

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Silty Clay

Sample Data

Sample ID	S23DS-06923	S23DS-06924	S23DS-06925			
Field Sample ID	1	2	3			
Client Sample ID	2	3	4			
Date Tested	21/08/2023	21/08/2023	21/08/2023			
Time Tested	14:57	15:02	15:09			
E:	357212.328	357221.294	357230.598			
N:	5781278.074	5781342.109	5781408.756			
EL:	34.619	35.994	36.910			
Lot / Layer:	5031 / 3	5026 / 3	5021 / 3			

Field and Laboratory Data

Depth of Test (mm)	275	275	275			
Depth of Layer (mm)	300	300	300			
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Moisture Content (%)	20.3	21.1	29.4			
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Density (t/m³)	2.01	1.95	1.97			
Field Dry Density (t/m³)	1.67	1.61	1.52			
Peak Converted Wet Density (t/m³)	2.02	1.97	1.98			
Optimum Moisture Content (%)	20.0	22.0	26.0			
Compactive Effort	Standard	Standard	Standard			
Moisture Ratio (%)	100.5	97.0	112.0			
Moisture Variation (%)	0.0	0.5 dry	3.0 wet			
Hilf Density Ratio (%)	**99.5**	**99.5**	**99.5**			

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS00030
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 22/01/2025

Sample Details

Location:	Clyde
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95%
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Imported
Material:	Clay

Sample Data

Sample ID	S25DS-00080	S25DS-00081	
Field Sample ID	1	2	
Date Tested	15/01/2025	15/01/2025	
Time Tested	12:40	12:55	
E:	357210.437	357230.361	
N:	5781466.780	5781463.357	
RL:	37.491	36.550	
Lot / Layer:	5014 / 1	5016 / 1	

Field and Laboratory Data

Depth of Test (mm)	125	125	
Depth of Layer (mm)	150	150	
AS Sieve Size (mm)	19.0	19.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	9.1	15.3	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.00	2.10	
Field Dry Density (t/m³)	1.83	1.82	
Peak Converted Wet Density (t/m³)	2.07	2.02	
Optimum Moisture Content (%)	11.5	18.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	78.5	85.0	
Moisture Variation (%)	2.5 dry	2.5 dry	
Hilf Density Ratio (%)	**96.5**	**104.0**	

Comments

Dandenong South
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Report No: HDR:W25DS00040
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 22/01/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Won
Material: CLAY

Sample Data

Sample ID	S25DS-00107	S25DS-00108	S25DS-00109	S25DS-00110	S25DS-00111
Field Sample ID	1	2	3	4	5
Date Tested	16/01/2025	16/01/2025	16/01/2025	16/01/2025	16/01/2025
Time Tested	08:00	08:15	08:25	08:35	08:45
E:	357205.778	357211.515	357214.909	357219.964	357225.748
N:	5781252.183	5781290.596	5781319.951	5781355.245	5781397.258
EL:	33.679	34.318	34.796	35.745	36.354
Lot / Layer	5070 / 1	5068 / 1	5066 / 1	5063 / 1	5020 / 1

Field and Laboratory Data

Depth of Test (mm)	125	125	125	125	125
Depth of Layer (mm)	150	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0
Field Moisture Content (%)	25.3	13.2	12.4	15.4	11.7
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.84	1.98	1.96	1.97	1.98
Field Dry Density (t/m³)	1.47	1.75	1.75	1.71	1.77
Peak Converted Wet Density (t/m³)	1.86	2.02	2.04	1.97	1.95
Optimum Moisture Content (%)	28.0	15.5	14.5	18.0	14.5
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	91.0	84.0	85.5	86.0	80.0
Moisture Variation (%)	2.5 dry	2.5 dry	2.0 dry	2.5 dry	3.0 dry
Hilf Density Ratio (%)	**99.0**	**98.5**	**96.0**	**100.0**	**102.0**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS00040
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 22/01/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Site Won
Material: CLAY

Sample Data

Sample ID	S25DS-00112	S25DS-00113	S25DS-00114	S25DS-00115	S25DS-00116
Field Sample ID	6	7	8	9	10
Date Tested	16/01/2025	16/01/2025	16/01/2025	16/01/2025	16/01/2025
Time Tested	08:50	08:55	09:05	14:20	14:30
E:	357182.491	357193.755	357223.376	357220.526	357215.775
N:	5781468.611	5781467.411	5781465.149	5781434.885	5781408.283
EL:	38.408	37.786	36.783	36.939	36.933
Lot / Layer	5012 / 1	5013 / 2	5015 / 2	5017 / 2	5019 / 2

Field and Laboratory Data

Depth of Test (mm)	125	125	125	125	125
Depth of Layer (mm)	150	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0
Field Moisture Content (%)	10.3	22.1	15.4	15.7	17.0
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.05	1.91	1.97	1.90	1.99
Field Dry Density (t/m³)	1.86	1.56	1.71	1.64	1.70
Peak Converted Wet Density (t/m³)	2.07	1.83	1.96	1.93	1.97
Optimum Moisture Content (%)	10.5	26.5	18.5	19.0	20.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	96.0	83.0	83.5	83.5	86.0
Moisture Variation (%)	0.5 dry	4.5 dry	3.0 dry	3.0 dry	2.5 dry
Hilf Density Ratio (%)	**99.0**	**104.5**	**100.5**	**98.0**	**101.0**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS00046
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 22/01/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00124	S25DS-00125	S25DS-00126	S25DS-00127	S25DS-00128	S25DS-00129
Field Sample ID	1	2	3	4	5	6
Date Tested	17/01/2025	17/01/2025	17/01/2025	17/01/2025	17/01/2025	17/01/2025
Time Tested	08:00	08:10	08:20	08:30	14:00	14:10
E:	357208.319	357205.340	357200.824	357197.209	357219.021	357215.959
N:	5781342.970	5781329.183	5781304.407	5781279.914	5781423.142	5781407.521
EL:	35.835	35.496	34.807	34.344	36.169	36.926
Lot / Layer:	5064 / 2	5065 / 2	5067 / 2	5069 / 2	5018 / 3	5019 / 3

Field and Laboratory Data

Depth of Test (mm)	125	125	125	125	125	125
Depth of Layer (mm)	150	150	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0	0
Field Moisture Content (%)	13.5	14.7	11.5	10.0	16.4	16.1
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.94	2.01	1.99	1.99	1.98	2.01
Field Dry Density (t/m³)	1.71	1.75	1.79	1.81	1.70	1.73
Peak Converted Wet Density (t/m³)	2.02	2.05	2.03	2.07	2.02	2.03
Optimum Moisture Content (%)	16.5	17.5	14.5	12.0	18.5	19.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	82.5	83.5	79.5	82.0	87.5	85.0
Moisture Variation (%)	3.0 dry	3.0 dry	3.0 dry	2.0 dry	2.0 dry	3.0 dry
Hilf Density Ratio (%)	**96.0**	**98.0**	**98.5**	**96.5**	**98.0**	**99.0**

Comments

Dandenong South
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Report No: HDR:W25DS00052
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 22/01/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00140	S25DS-00141	S25DS-00142	S25DS-00143	S25DS-00144	S25DS-00145	S25DS-00146
Field Sample ID	1	2	3	4	5	6	7
Date Tested	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
Time Tested	08:25	08:35	08:40	08:45	08:50	08:55	09:00
E:	357174.025	357185.318	357182.839	357180.094	357173.577	357173.577	357176.740
N:	5781441.800	5781439.946	5781417.342	5781404.921	5781388.193	5781376.424	5781861.214
EL:	38.377	38.085	38.134	38.089	37.934	37.758	37.524
Lot / Layer:	5024 / 1	5023 / 1	5022 / 1	5021 / 1	5060 / 1	4054 / 1	5058 / 1
Field and Laboratory Data							
Depth of Test (mm)	125	125	125	125	125	125	125
Depth of Layer (mm)	150	150	150	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0	0	0
Field Moisture Content (%)	23.5	19.1	21.7	23.6	19.3	25.9	20.4
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.91	1.98	1.87	1.91	1.99	1.86	1.78
Field Dry Density (t/m³)	1.54	1.66	1.53	1.55	1.67	1.48	1.48
Peak Converted Wet Density (t/m³)	1.83	1.94	1.80	1.82	1.85	1.83	1.75
Optimum Moisture Content (%)	28.5	22.0	27.5	28.0	24.0	29.0	25.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	82.5	88.0	79.5	84.0	80.5	89.0	81.5
Moisture Variation (%)	4.5 dry	2.5 dry	5.5 dry	4.5 dry	4.5 dry	3.0 dry	4.5 dry
Hilf Density Ratio (%)	**104.5**	**102.0**	**103.5**	**105.5**	**107.5**	**101.5**	**102.0**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS00052
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 22/01/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00147	S25DS-00148	S25DS-00149	S25DS-00152	S25DS-00153	S25DS-00154	S25DS-00155
Field Sample ID	8	9	10	11	12	13	14
Date Tested	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025	20/01/2025
Time Tested	09:10	09:20	09:30	14:00	15:15	15:25	15:35
E:	357166.708	357170.673	357163.876	357194.919	357231.197	357216.434	357218.119
N:	5781343.948	5781329.070	5781319.409	5781467.703	5781433.905	5781396.894	5781372.280
EL:	37.123	36.721	36.490	37.720	36.878	36.817	36.390
Lot / Layer:	5057 / 1	5056 / 1	5055 / 1	5013 / 2	5017 / 4	5020 / 4	5062 / 4
				Retest of S25DS-00113			
Field and Laboratory Data							
Depth of Test (mm)	125	125	125	125	125	125	125
Depth of Layer (mm)	150	150	150	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0	0	0
Field Moisture Content (%)	22.4	19.9	25.8	22.9	10.9	16.7	13.7
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.80	1.84	1.84	1.92	1.92	1.97	2.00
Field Dry Density (t/m³)	1.47	1.53	1.46	1.56	1.73	1.69	1.76
Peak Converted Wet Density (t/m³)	1.87	1.72	1.82	1.91	2.02	2.02	1.91
Optimum Moisture Content (%)	25.0	22.5	28.5	25.5	13.0	19.0	16.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	90.0	87.5	90.0	89.5	83.5	87.5	86.0
Moisture Variation (%)	2.5 dry	3.0 dry	2.5 dry	2.5 dry	2.0 dry	2.5 dry	2.5 dry
Hilf Density Ratio (%)	**96.5**	**107.0**	**101.0**	**100.5**	**95.0**	**98.0**	**104.5**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS00071
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 28/01/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00219	S25DS-00220	S25DS-00221	S25DS-00222
Field Sample ID	1	2	3	4
Date Tested	22/01/2025	22/01/2025	22/01/2025	22/01/2025
Time Tested	12:00	12:10	12:20	12:30
E:	357177.351	357178.926	357182.031	357175.192
N:	5781443.160	5781418.855	5781402.930	5781390.406
EL:	38.295	38.195	38.056	37.976
Lot / Layer:	5024 / -	5022 / 1	5021 / 1	5060 / 1
	Retest of S25DS-00140	Retest of S25DS-00142	Retest of S25DS-00143	Retest of S25DS-00144

Field and Laboratory Data

Depth of Test (mm)	125	125	125	125
Depth of Layer (mm)	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0
Field Moisture Content (%)	24.5	22.8	20.6	23.7
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.87	1.87	1.90	1.84
Field Dry Density (t/m³)	1.50	1.52	1.58	1.49
Peak Converted Wet Density (t/m³)	1.80	1.82	1.83	1.90
Optimum Moisture Content (%)	29.5	27.5	23.5	26.0
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	83.5	82.5	88.5	91.0
Moisture Variation (%)	4.5 dry	4.5 dry	2.5 dry	2.0 dry
Hilf Density Ratio (%)	**103.5**	**102.5**	**104.0**	**97.0**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS00071
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

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Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 28/01/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00223	S25DS-00224	S25DS-00225	S25DS-00226
Field Sample ID	5	6	7	8
Date Tested	22/01/2025	22/01/2025	22/01/2025	22/01/2025
Time Tested	12:40	13:00	13:10	13:20
E:	357171.513	357215.627	357218.475	357197.799
N:	5781362.190	5781384.283	5781342.205	5781268.663
EL:	37.605	36.775	36.031	34.447
Lot / Layer:	5058 / 1	5061 / 5	5064 / 5	5071 / 5
	Retest of S25DS-00146			

Field and Laboratory Data

Depth of Test (mm)	125	125	125	125
Depth of Layer (mm)	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0
Field Moisture Content (%)	22.7	26.9	24.9	23.8
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.85	1.94	1.94	1.86
Field Dry Density (t/m³)	1.51	1.52	1.55	1.50
Peak Converted Wet Density (t/m³)	1.88	1.83	1.79	1.85
Optimum Moisture Content (%)	26.0	30.0	30.0	26.5
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	87.5	90.0	83.5	90.0
Moisture Variation (%)	3.0 dry	3.0 dry	5.0 dry	2.5 dry
Hilf Density Ratio (%)	**98.5**	**105.5**	**108.5**	**100.5**

Comments

CHADWICK GEOTECHNICS

Dandenong South
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Report No: HDR:W25DS00093
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 31/01/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00309	S25DS-00310	S25DS-00311	S25DS-00312	S25DS-00313	S25DS-00314	S25DS-00315
Field Sample ID	1	2	3	4	5	6	7
Date Tested	24/01/2025	24/01/2025	24/01/2025	24/01/2025	24/01/2025	24/01/2025	24/01/2025
Time Tested	07:50	08:00	08:30	08:40	08:50	09:00	11:00
E:	357174.978	357183.220	357151.722	357145.783	357142.174	357219.014	357164.285
N:	5781442.864	5781416.236	5781419.564	5781368.252	5781290.518	5781343.612	5781304.577
EL:	38.300	38.151	38.949	38.293	35.844	36.012	35.834
Lot / Layer:	5024 / 1	5022 / 1	5028 / 1	5045 / 1	5050 / 1	5064 / 5	5054 / 2
	Retest of S25DS-00219	Retest of S25DS-00220				Retest of S25DS-00225	Retest of S25DS-00256
Field and Laboratory Data							
Depth of Test (mm)	125	125	125	125	125	125	125
Depth of Layer (mm)	150	150	150	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0	0	0
Field Moisture Content (%)	23.8	22.9	21.2	20.9	19.0	23.8	17.9
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.95	1.84	1.80	1.96	1.85	1.96	1.84
Field Dry Density (t/m³)	1.57	1.49	1.49	1.62	1.55	1.58	1.56
Peak Converted Wet Density (t/m³)	1.92	1.90	1.82	1.96	1.97	1.92	1.99
Optimum Moisture Content (%)	26.5	25.5	26.0	23.0	21.5	26.5	19.5
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	90.5	89.5	81.5	90.5	89.5	90.5	91.5
Moisture Variation (%)	2.5 dry	2.5 dry	4.5 dry	2.0 dry	2.0 dry	2.5 dry	1.5 dry
Hilf Density Ratio (%)	**101.5**	**96.5**	**99.0**	**100.0**	**93.5**	**102.0**	**92.5**

Comments

CHADWICK GEOTECHNICS

Dandenong South
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Report No: HDR:W25DS00097
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 3/02/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00328	S25DS-00329	
Field Sample ID	1	2	
Date Tested	28/01/2025	28/01/2025	
Time Tested		08:00	
E:	357151.811	357142.439	
N:	5781407.575	5781321.554	
EL:	38.950	36.905	
Lot / Layer:	5029 / -	5048 / -	

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 Moisture Content (%)	16.1	14.9	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.88	1.86	
Field Dry Density (t/m³)	1.62	1.62	
Peak Converted Wet Density (t/m³)	1.93	1.94	
Optimum Moisture Content (%)	20.5	19.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	78.5	77.0	
Moisture Variation (%)	4.0 dry	4.5 dry	
Hilf Density Ratio (%)	**97.5**	**96.0**	

Comments

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Report No: HDR:W25DS00103
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 3/02/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00341	S25DS-00342	
Field Sample ID	1	2	
Date Tested	29/01/2025	29/01/2025	
Time Tested	13:10	13:00	
E:	357136.479	357151.712	
N:	5781288.670	5781418.600	
EL:	35.900	38.939	
Lot / Layer:	5050 / 1	5028 / 1	
	Retest of S25DS-00313	Retest of S25DS-00311	

Field and Laboratory Data

Depth of Test (mm)	125	125	
Depth of Layer (mm)	150	150	
AS Sieve Size (mm)	19.0	19.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	27.0	26.5	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.91	1.87	
Field Dry Density (t/m³)	1.50	1.48	
Peak Converted Wet Density (t/m³)	1.86	1.86	
Optimum Moisture Content (%)	29.5	29.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	91.5	91.0	
Moisture Variation (%)	2.5 dry	2.5 dry	
Hilf Density Ratio (%)	**102.5**	**100.5**	

Comments

CHADWICK GEOTECHNICS

Think Act Safe Be

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Report No: HDR:W25DS00114
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 4/02/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00362	S25DS-00363	S25DS-00364	S25DS-00365	S25DS-00366	S25DS-00367
Field Sample ID	1	2	3	4	5	6
Date Tested	30/01/2025	30/01/2025	30/01/2025	30/01/2025	30/01/2025	30/01/2025
Time Tested	11:00	11:10	11:20	11:30	11:40	11:50
E:	357148.975	357160.961	357146.686	357154.722	357140.479	357137.883
N:	5781444.532	5781443.636	5781397.774	5781382.890	5781356.541	5781339.586
EL:	39.168	38.794	39.082	38.860	38.416	37.666
Lot / Layer:	5026 / -	5025 / -	5043 / 2	5044 / 2	5046 / 2	5047 / 2
Field and Laboratory Data						
Depth of Test (mm)	125	125	125	125	125	125
Depth of Layer (mm)	150	150	150	150	150	150
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0	0
Field Moisture Content (%)	27.2	24.1	23.1	28.2	28.8	24.8
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.95	1.90	1.90	1.95	1.89	1.86
Field Dry Density (t/m³)	1.53	1.53	1.54	1.52	1.47	1.49
Peak Converted Wet Density (t/m³)	1.92	1.89	1.88	1.89	1.82	1.90
Optimum Moisture Content (%)	27.5	26.5	25.5	28.5	31.5	27.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	99.5	90.5	90.0	99.5	91.5	91.5
Moisture Variation (%)	0.0	2.5 dry	2.5 dry	0.0	2.5 dry	2.0 dry
Hilf Density Ratio (%)	**102.0**	**100.5**	**100.5**	**103.5**	**103.5**	**98.0**

Comments

CHADWICK GEOTECHNICS

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Report No: HDR:W25DS00114
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 4/02/2025

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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Clay

Sample Data

Sample ID	S25DS-00368	S25DS-00369	S25DS-00370	S25DS-00371	S25DS-00372	
Field Sample ID	7	8	9	10	11	
Date Tested	30/01/2025	30/01/2025	30/01/2025	30/01/2025	30/01/2025	
Time Tested	12:00	12:10	12:20	12:30	12:40	
E:	357143.040	357142.717	357152.110	357143.693	357164.200	
N:	5781306.496	5781277.564	5781404.060	5781320.898	5781305.017	
EL:	36.434	35.267	39.144	37.054	35.800	
Lot / Layer:	5049 / 2	5051 / 2	5025 / -	5048 / -	5054 / 2	
			Retest of S25DS-00328	Retest of S25DS-00329	Retest of S25DS-00315	
Field and Laboratory Data						
Depth of Test (mm)	125	125	125	125	125	
Depth of Layer (mm)	150	150	150	150	150	
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	
Oversize Wet (%)	0	0	0	0	0	
Field Moisture Content (%)	25.0	26.7	27.9	27.5	27.0	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.92	1.86	1.89	1.86	1.90	
Field Dry Density (t/m³)	1.54	1.47	1.47	1.46	1.50	
Peak Converted Wet Density (t/m³)	1.84	1.84	1.92	1.85	1.84	
Optimum Moisture Content (%)	27.5	29.5	28.0	30.0	29.5	
Compactive Effort	Standard	Standard	Standard	Standard	Standard	
Moisture Ratio (%)	91.0	90.5	100.0	91.5	91.0	
Moisture Variation (%)	2.5 dry	2.5 dry	0.0	2.5 dry	2.5 dry	
Hilf Density Ratio (%)	**104.0**	**101.0**	**98.5**	**100.5**	**103.0**	

Comments

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Report No: MAT:S23DS-06926/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
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. Longfield (Senior Technician)
Date of Issue: 15/09/2023

Sample Details

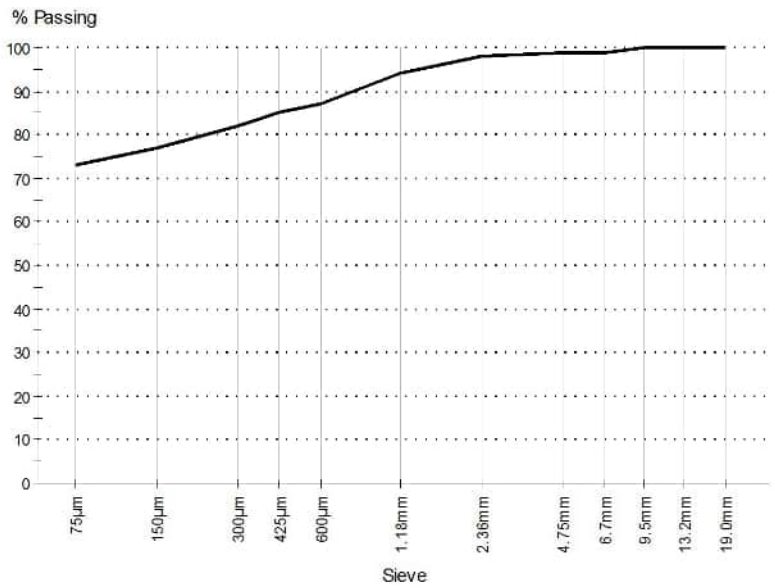
Sample Location	E: 357230.598, N: 5781408.756, EL: 36.910, Lot: 5021, Layer: 3
Field Sample ID	1
Date Sampled	21/08/2023
Time Sampled	15:09
Source	Onsite
Material	Silty Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S23DS-06926

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	28.1	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	18.5	
Mould Length (mm)		250	
Crumbling		No	

Particle Size Distribution

AS 1289.3.6.1



Drying By: Oven
Date Tested: 29/08/2023

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	100	
6.7mm	99	
4.75mm	99	
2.36mm	98	
1.18mm	94	
600µm	87	
425µm	85	
300µm	82	
150µm	77	
75µm	73	

Comments

N/A

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Report No: MAT:S23DS-06926/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
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. Longfield (Senior Technician)
Date of Issue: 15/09/2023

Other Test Results

Description	Method	Result	Limits
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	71	
Plastic Limit (%)	AS 1289.3.2.1	21	
Plasticity Index (%)	AS 1289.3.3.1	50	
Date Tested		30/08/2023	

Comments

N/A

CHADWICK GEOTECHNICS

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Report No: MAT:S25DS-00227/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Green Estate, Stage 50
Project No.: 1091936.050
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 5/02/2025

Sample Details

Sample Location	E: 357218.475, N: 5781342.205, EL: 36.031, Lot: 5064, Layer: 5
Field Sample ID	1
Date Sampled	22/01/2025
Time Sampled	13:10
Source	Onsite
Material	Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S25DS-00227

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	19.5	
Date Tested		23/01/2025	
Sample History	AS 1289.1.1	Oven-Dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	13.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		No	
Cracking		Yes	
Liquid Limit (%)	AS 1289.3.1.2	62	
Plastic Limit (%)	AS 1289.3.2.1	22	
Plasticity Index (%)	AS 1289.3.3.1	40	
Date Tested		28/01/2025	

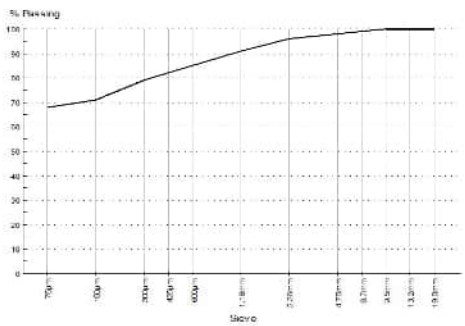
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 28/01/2025

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	100	
6.7mm	99	
4.75mm	98	
2.36mm	96	
1.18mm	91	
600µm	85	
425µm	82	
300µm	79	
150µm	71	
75µm	68	

Chart



Comments

N/A

Appendix D Fill Certificate

CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : Meridian Green Estate
Stage 50A
Lots 5011 to 5029

REF: 1091936.050A.R1.v1

CLIENT : Greenridge Properties Pty Ltd
P.O Box 4136
Dandenong South Victoria, 3164

DATE: 15 April 2025

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 can 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 August 2023 and was completed 30 January 2025). 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
Project Manager

Michael DiMeglio
Project Director

CHADWICK
GEOTECHNICS