CHADWICK GEOTECHNICS

REPORT

Level 1 Geotechnical Testing and Inspection Authority Services

Meridian Central Estate Stage 43
Lots 4301 to 4340

Prepared for:

Greenridge Properties Pty Ltd

30 May 2023

Our Ref: 3807351.043.v1

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

Table of contents

Document Control

Title:	Level One Inspection and testing Services.				
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by**
30 May 2023	V1	Meridian Estate Stage 43 Level One Report	STPA and RHB	RWMC	TJJC

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 43 of the Meridian Central Estate in Clyde North between project dates 19 December 2022 and 16 March 2023.

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

The Stage 43 site is located to the North of Hardys Road and South West of Pound Road. Stages 42 and 45 are located within the same development area.

The included works are shown on the Site Plan in **Appendices 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	Beveridge Williams Pty Ltd
Earthworks Contractor	Brown Property Group Pty Ltd

Note:

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
December 2022	19, 20, 21
January 2023	7, 11, 12, 13, 14, 16, 19, 20, 21, 24, 25, 30, 31,
February 2023	1, 2, 7, 8, 9, 10, 11, 13, 14, 22, 24, 27,
March 2023	1, 2, 3, 8, 10, 14, 16

2.4 Included Areas

This report is applicable to material placed by the contractor on the residential lots within Meridian Central estate Stage 43, as shown on the Site Plan in **Appendix D,** 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:

- Lot 4301 to Lot 4340

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.

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

Project specifications were prepared by Beveridge Williams Pty Ltd for the project. The works were to be conducted in general accordance with the 'Guidelines on earthworks for commercial and residential developments' of AS 3798-2007.

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 AS 3798-2007 "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).
- Moisture content of the fill material is to be within ±3% of the soils Standard Optimum Moisture Content (SOMC).
- 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.

Sample taken from the site stockpiles comprising 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** below. The laboratory test certificates are attached in **Appendix C.**

Table 4.1: Compliance test Result Summary

Sample #	Particle Size Distribution (PSD)						Liquid Limit %	Plastic Limit %	Plasticity Index %
	37.5 mm	13.2 mm	4.75 mm	1.18 mm	425 µm	0.75 µm			
S23DS-00472	100	99	96	92	82	41	26	12	14
S23DS-01767	100	99	95	90	82	47	41	15	26
S23DS-02257	100	98	94	89	80	47	40	14	26

The laboratory test results indicated material is clay of medium 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.

Below photographs of typical materials used during construction.

Photograph 4.1: Photographs of the material used on site

Photo 1: Material used (Sandy CLAY)	Photo 2: Sandy Clay with trace gravel
	

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 and the wet soils that were present on site.

The subgrade inspections were performed in accordance with the Level 1 guidelines presented in AS 3798–2007 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.

Below photographs of the subgrade assessment phase at the project.

Photograph 4.2: Subgrade assessment photographs

Photo 3: Proof roll / No deviations	Photo 4: Proof roll with loaded Dump truck
	

4.4 Engineered Fill Construction

All fill material was brought by dump trucks from the local stockpiles, 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	**Caterpillar Bulldozer & Caterpillar Grader.**
Compactor	**Caterpillar vibrating compactor.**
Water cart	**Off-Road Water Cart with spray bars.**
Dump Trucks	**Caterpillar A25G Articulated Dump Truck & Road Trucks.**

Below photographs of typical machinery on site and materials used during construction.

Photograph 4.3: General Earthwork machinery and fill construction photographs

Photo 5: Pad Foot Roller used on site	Photo 6: Dozer used on site
	
Photo 7: Dump truck	**Photo 8: Excavator to move materials**
	

4.5 Density 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 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**.

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 AS 3798-2007;

One hundred and ten (110) tests were performed during the filling process. Fourteen (14) of the tests did not achieve the required density and 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**.

Below, photographs of field density testing conducted on site.

Photograph 4.4: Density Testing photographs

Photo 9: Density Tests	Photo 10: Nuclear Density 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 our last day on site the Contractor is responsible to maintain the engineered fill in satisfactory condition. Should the fill be not maintained or protected with a sacrificial layer of topsoil or other fill, the uppermost layers of the engineered fill may deteriorate from the weather causing shrink/swell cracking and may need to be remediated prior to further construction on the site. Chadwick Geotechnics have not provided supervision since this date and are not responsible for any deterioration that may have occurred.

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 19 December 2022 to 16 March 2023. 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:

.....

Robert Barden

Project Manager

Authorised for Chadwick Geotechnics Pty Ltd by:

.....

Timothy Chadwick

Project Director

Report reviewed by:

.....

Robert McKenzie

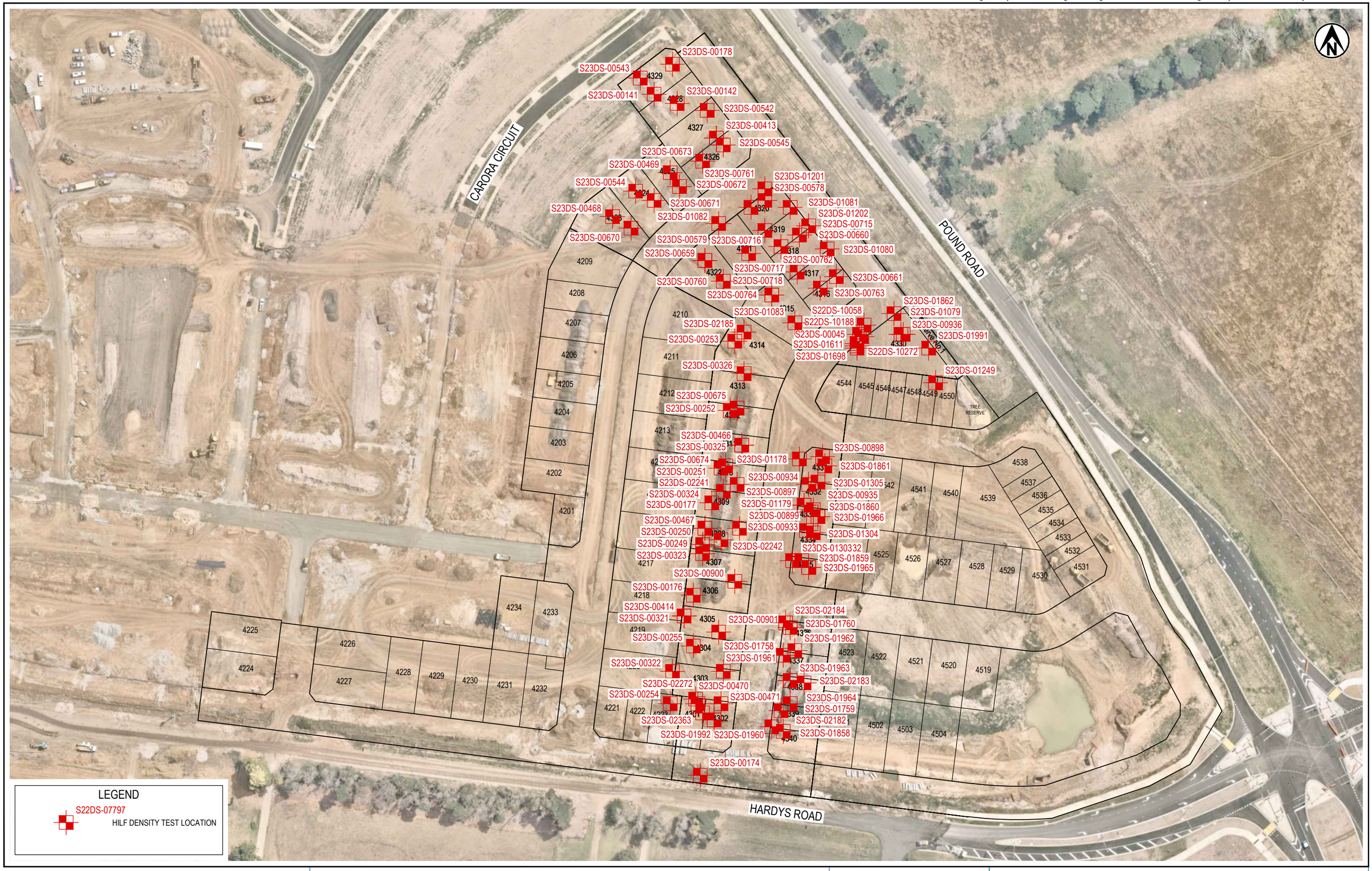
Senior Associate Geotechnical Engineer

PE0005222

p:\3807351\43 stage 43\workingmaterial\level one\meridian estate stage 43 level 1 report.docx

Appendix A Test Location Plan

T:\Dandenong\Geo Projects\3807351\43 Stage 43\WorkingMaterial\CAD\FIG\3807351-F01.dwg 2023-May-30 1:34:39 PM Plotted By: KATHRYN JACKSON



CHADWICK GEOTECHNICS

www.chadwickgeotechnics.com.au

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 15/02/2023.

A3 SCALE 1:1500

0 20 40 60 80 100 (m)

ORIGINAL IN COLOUR

PROJECT No.	3807351		
DESIGNED	STPA	Apr.23	
DRAWN	KMJA	Apr.23	
CHECKED			
APPROVED	DATE		

CLIENT **GROSVENOR LODGE PTY LTD**

PROJECT **MERIDIAN ESTATE - STAGE 43**

TITLE LEVEL ONE HILF DENSITY TESTING
HILF DENSITY TEST LOCATION PLAN

UNDER REVISION 1

SCALE (A3) 1:1500 FIG No. 3807351-F01 REV 1

Appendix B Hilf Density Test Summary

Meridian Estate Stage 43, 3807351.043

HILF Density Testing - Field Summary

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
Tel : (03) 8796 7900
Fax: (03) 9706 9431

www.chadwickgeotechnics.com.au

Report No	Sample No	Date	Lot No	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W22DS02516	S22DS-10058	19/12/2022	4330 / 1	356553	5781200	40.47	96.5	0.5 dry	Pass	
HDR:W22DS02540	S22DS-10188	20/12/2022	4330 / 2	356551	5781196	40.7	96.5	0 dry	Pass	
HDR:W22DS02557	S22DS-10272	21/12/2022	4330/3	356552	5781195	40.86	97.5	2.0 dry	Pass	
HDR:W23DS00016	S23DS-00045	7/01/2023	4330 / -	356550	5781192	40.9	95.5	2.0 dry	Pass	
HDR:W23DS00045	S23DS-00141	11/01/2023	4328 / 1	356462	5781300	44.1	98	0	Pass	
HDR:W23DS00045	S23DS-00142	11/01/2023	4324 / 1	356472	5781296	43.87	99	0.5 dry	Pass	
HDR:W23DS00056	S23DS-00174	12/01/2023	4303 / 1	356482	5781005	39.01	96.5	0 dry	Pass	
HDR:W23DS00056	S23DS-00175	12/01/2023	4305 / 1	356976	5781093	39.96	104.5	4.0 dry	Fail	See Retest S23DS-00257
HDR:W23DS00056	S23DS-00176	12/01/2023	4306 / 2	356479	5781083	40.06	100.5	2.0 dry	Pass	
HDR:W23DS00056	S23DS-00177	12/01/2023	4309 / 2	356487	5781123	40.72	99	0.5 wet	Pass	
HDR:W23DS00056	S23DS-00178	12/01/2023	4329 / 2	356470	5781313	44.28	100.5	1.5 dry	Pass	
HDR:W23DS00080	S23DS-00249	14/01/2023	4307 / 1	356483	5781105	40.54	99.5	0 dry	Pass	
HDR:W23DS00080	S23DS-00250	14/01/2023	4308 / 1	356484	5781112	40.7	93.5	0.5 dry	Fail	See Retest S23DS-00467
HDR:W23DS00080	S23DS-00251	14/01/2023	4310 / 1	356491	5781138	41.01	99	2.0 dry	Pass	
HDR:W23DS00080	S23DS-00252	14/01/2023	4312 / 1	356495	5781163	41.5	97	0 wet	Pass	
HDR:W23DS00080	S23DS-00253	14/01/2023	4314 / 1	356497	5781193	41.71	102.5	2.0 dry	Pass	
HDR:W23DS00081	S23DS-00254	13/01/2023	4301 / -	356469	5781036	38.8	100	2.0dry	Pass	
HDR:W23DS00081	S23DS-00255	13/01/2023	4304 / -	356479	5781061	39.701	98	1.0 dry	Pass	

Meridian Estate Stage 43, 3807351.043

HILF Density Testing - Field Summary

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
Tel : (03) 8796 7900
Fax: (03) 9706 9431

www.chadwickgeotechnics.com.au

Report No	Sample No	Date	Lot No	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W23DS00081	S23DS-00256	13/01/2023	4314 / -	356650	5781706	41.58	98	0 dry	Pass	
HDR:W23DS00081	S23DS-00257	13/01/2023	4305 / 1	356980	5781085	39.93	98	0.5 dry	Pass	Retest of S22DS-0175
HDR:W23DS00096	S23DS-00320	16/01/2023	4326 / 1	356489	5781281	43.56	98.5	4.5 dry	Fail	See Retest S23DS-00413
HDR:W23DS00096	S23DS-00321	16/01/2023	4305 * 2	356475	5781074	40.26	103.5	4 dry	Fail	See Retest S23DS-00414
HDR:W23DS00096	S23DS-00322	16/01/2023	4303 / 2	356470	5781050	39.49	103	1.5 dry	Pass	
HDR:W23DS00096	S23DS-00323	16/01/2023	4307 / 2	356483	5781101	40.55	100.5	2.5 dry	Pass	
HDR:W23DS00096	S23DS-00324	16/01/2023	4309 / 2	356492	5781128	40.93	103.5	2.5 dry	Pass	
HDR:W23DS00096	S23DS-00325	16/01/2023	4311 / 2	356500	5781148	41.06	107	4.5 dry	Fail	See Retest S23DS-00466
HDR:W23DS00096	S23DS-00326	16/01/2023	4313 / 2	356501	5781179	41.58	98.5	2.5 dry	Pass	
HDR:W23DS00127	S23DS-00413	19/01/2023	4326	356489	5781281	43.56	98	2.5 dry	Pass	Retest of S23DS-00320
HDR:W23DS00127	S23DS-00414	19/01/2023	4305	356475	5781074	40.26	99	2.5 dry	Pass	Retest of S23DS-00321
HDR:W23DS00147	S23DS-00466	20/01/2023	4311 / 2	356500	5781148	41.06	101	0.1 dry	Pass	Retest of S23DS-00325
HDR:W23DS00147	S23DS-00467	20/01/2023	4308 / 1	356484	5781112	40.7	101.5	1.5 dry	Pass	Retest of S23DS-00250
HDR:W23DS00147	S23DS-00468	20/01/2023	4323 / 1	356444	5781247	43.859	97.5	0.5 dry	Pass	
HDR:W23DS00147	S23DS-00469	20/01/2023	4325 / 1	356469	5781266	43.511	96	0.1 wet	Pass	
HDR:W23DS00148	S23DS-00470	21/01/2023	4301 / 1	356480	5781038	38.704	100	0.5 wet	Pass	
HDR:W23DS00148	S23DS-00471	21/01/2023	4302 / 1	356491	5781036	38.414	96	1.0 dry	Pass	
HDR:W23DS00169	S23DS-00542	24/01/2023	4327 / 3	356485	5781293	43.869	96.5	0.5 dry	Pass	
HDR:W23DS00169	S23DS-00543	24/01/2023	4329 / 3	356456	5781307	44.477	98.5	0.5 dry	Pass	

Meridian Estate Stage 43, 3807351.043

HILF Density Testing - Field Summary

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
Tel : (03) 8796 7900
Fax: (03) 9706 9431

www.chadwickgeotechnics.com.au

Report No	Sample No	Date	Lot No	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W23DS00169	S23DS-00544	24/01/2023	4324 / 2	356454	5781258	43.896	98	2.0 dry	Pass	
HDR:W23DS00169	S23DS-00545	24/01/2023	4326 / 2	356492	5781278	43.523	95.5	0.5 dry	Pass	
HDR:W23DS00184	S23DS-00578	25/01/2023	4320 / 2	356510	5781254	42.656	100	2.5 dry	Pass	
HDR:W23DS00184	S23DS-00579	25/01/2023	4322 / 2	356484	5781228	42.559	93	0 dry	Fail	See Retest S23DS-00659
HDR:W23DS00213	S23DS-00659	30/01/2023	4322 / 2	356484	5781228	42.559	99.5	0.5 dry	Pass	Retest of S23DS-00579
HDR:W23DS00213	S23DS-00660	30/01/2023	4318 / 2	356525	5781239	42.043	101.5	0.5 dry	Pass	
HDR:W23DS00213	S23DS-00661	30/01/2023	4316 / 2	356541	5781221	41.444	98.5	0.5 dry	Pass	
HDR:W23DS00216	S23DS-00670	31/01/2023	4323 / 3 Eastside	356452	5781242	44.017	102.5	1.0 dry	Pass	
HDR:W23DS00216	S23DS-00671	31/01/2023	4324 / 3 Eastside	356462	5781254	43.949	99	2.5 dry	Pass	
HDR:W23DS00216	S23DS-00672	31/01/2023	4325 / 3Eastside	356473	5781260	43.749	102	2.0 dry	Pass	
HDR:W23DS00216	S23DS-00673	31/01/2023	4326 / 1Eastside	356483	5781271	43.673	97.5	2.5 dry	Pass	
HDR:W23DS00216	S23DS-00674	31/01/2023	4310 / 3	356493	5781139	41.077	97	0.5 dry	Pass	
HDR:W23DS00216	S23DS-00675	31/01/2023	4312 / 3	356498	5781164	41.483	95.5	0.5 dry	Pass	
HDR:W23DS00228	S23DS-00715	1/02/2023	4319 / 3	356510	5781241	42.597	98.5	0 dry	Pass	
HDR:W23DS00228	S23DS-00716	1/02/2023	4321 / 3	356503	5781231	42.438	97	0.5 dry	Pass	
HDR:W23DS00228	S23DS-00717	1/02/2023	4317 / 3	356524	5781223	41.936	98	0 dry	Pass	
HDR:W23DS00228	S23DS-00718	1/02/2023	4315 / 3	356513	5781213	41.988	92	2.0 dry	Fail	See Retest S23DS-00764
HDR:W23DS00241	S23DS-00760	2/02/2023	4322 / 4	356492	5781219	42.691	98	0.5 wet	Pass	

Meridian Estate Stage 43, 3807351.043

HILF Density Testing - Field Summary

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
Tel : (03) 8796 7900
Fax: (03) 9706 9431

www.chadwickgeotechnics.com.au

Report No	Sample No	Date	Lot No	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W23DS00241	S23DS-00761	2/02/2023	4320 / 4	356504	5781251	43.073	97.5	0.5 dry	Pass	
HDR:W23DS00241	S23DS-00762	2/02/2023	4318 / 4	356517	5781234	42.448	97.5	0 dry	Pass	
HDR:W23DS00241	S23DS-00763	2/02/2023	4316 / 4	356534	5781216	41.808	96.5	0.5 dry	Pass	
HDR:W23DS00241	S23DS-00764	2/02/2023	4315 / 3	356513	5781213	41.988	100.5	2.0 dry	Pass	Retest of S23DS-00718
HDR:W23DS00288	S23DS-00897	7/02/2023	4333 / 1	356527	5781122	39.638	94.5	0 dry	Fail	See Retest S23DS-00935
HDR:W23DS00288	S23DS-00898	7/02/2023	4331 / 1	356535	5781143	40.043	98.5	0 dry	Pass	
HDR:W23DS00288	S23DS-00899	7/02/2023	4308 / 3	356499	5781112	40.387	98.5	0 dry	Pass	
HDR:W23DS00288	S23DS-00900	7/02/2023	4306 / 3	356497	5781089	39.87	99	0 dry	Pass	
HDR:W23DS00288	S23DS-00901	7/02/2023	4304 / 3	356490	5781067	39.453	100.5	1.0 dry	Pass	
HDR:W23DS00298	S23DS-00932	8/02/2023	4335 / 1	356526	5781098	39.396	100.5	2.5 dry	Pass	
HDR:W23DS00298	S23DS-00933	8/02/2023	4334 / 2	356528	5781111	39.713	102	2.5 dry	Pass	
HDR:W23DS00298	S23DS-00934	8/02/2023	4332 / 2	356529	5781131	40.02	102.5	2.0 dry	Pass	
HDR:W23DS00298	S23DS-00935	8/02/2023	4333 / 1	356527	5781122	-	100	2.5 dry	Pass	Retest of S23DS-00897
HDR:W23DS00298	S23DS-00936	8/02/2023	4330 / 1	356569	5781196	40.063	91.5	0.5 dry	Fail	See Retest S23DS-01079
HDR:W23DS00322	S23DS-01079	9/02/2023	4330 / 1	356570	5781196	42.026	96	0 dry	Pass	Retest of S23DS-00936
HDR:W23DS00322	S23DS-01080	9/02/2023	4317 / 5	356537	5781233	42.026	100	0.5 dry	Pass	
HDR:W23DS00322	S23DS-01081	9/02/2023	4319 / 5	356521	5781251	42.899	103	0.5 dry	Pass	
HDR:W23DS00322	S23DS-01082	9/02/2023	4321 / 5	356490	5781244	43.292	98.5	0 dry	Pass	

Meridian Estate Stage 43, 3807351.043

HILF Density Testing - Field Summary

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
Tel : (03) 8796 7900
Fax: (03) 9706 9431

www.chadwickgeotechnics.com.au

Report No	Sample No	Date	Lot No	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W23DS00322	S23DS-01083	9/02/2023	4315 / 5	356523	5781201	41.904	103.0	2 dry	Pass	
HDR:W23DS00345	S23DS-01178	10/02/2023	4331 / 3	356525	5781142	40.462	101	2 dry	Pass	
HDR:W23DS00345	S23DS-01179	10/02/2023	4333 / 3	356531	5781120	39.976	100.5	2 dry	Pass	
HDR:W23DS00350	S23DS-01201	11/02/2023	4320 / 6	356510	5781259	43.333	102	3 dry	Pass	
HDR:W23DS00350	S23DS-01202	11/02/2023	4318 / 6	356529	5781243	42.813	102	1.0 dry	Pass	
HDR:W23DS00364	S23DS-01249	13/02/2023	4321 / 6	356584	5781175	43.218	105	3 dry	Pass	
HDR:W23DS00379	S23DS-01303	14/02/2023	4335 / 3	356522	5781098	39.799	99.5	2.5 dry	Pass	
HDR:W23DS00379	S23DS-01304	14/02/2023	4334 / 4	356531	5781110	39.825	105.0	2.5 dry	Pass	
HDR:W23DS00379	S23DS-01305	14/02/2023	4332 / 4	356533	5781132	40.312	105.0	2.5 dry	Pass	
HDR:W23DS00484	S23DS-01611	22/02/2023		356550	5781191	40.776	104.5	4.5 dry	Fail	See Retest S23DS-01698
HDR:W23DS00515	S23DS-01698	24/02/2023	4330	356550	5781190		102.5	0.5 dry	Pass	Retest of S23DS-01611
HDR:W23DS00538	S23DS-01758	27/02/2023	4337 / 1	356518	5781057	38.589	104.5	2.5 dry	Pass	
HDR:W23DS00538	S23DS-01759	27/02/2023	4339 / 1	356517	5781033	38.004	98.5	2.0 dry	Pass	
HDR:W23DS00538	S23DS-01760	27/02/2023	4336 / 2	356521	5781069	38.98	103.0	2.5 dry	Pass	
HDR:W23DS00578	S23DS-01857	1/03/2023	4338 / 2	356521	5781046	38.386	94.0	0 wet	Fail	See Retest S23DS-1963
HDR:W23DS00578	S23DS-01858	1/03/2023	4340 / 2	356518	5781024	37.906	96.5	1.0 dry	Pass	
HDR:W23DS00578	S23DS-01859	1/03/2023	4335 / 5	356529	5781095	39.7947	94.0	0 wet	Fail	See Retest S23DS-01965
HDR:W23DS00578	S23DS-01860	1/03/2023	4333 / 5	356533	5781117	40.239	94.5	0 dry	Fail	See Retest S23DS-01966
HDR:W23DS00578	S23DS-01861	1/03/2023	4331 / 5	356536	5781139	40.679	95.0	0 wet	Pass	

Meridian Estate Stage 43, 3807351.043

HILF Density Testing - Field Summary

Chadwick Geotechnics
25 Metcalf Street
Dandenong South VIC 3175
Tel : (03) 8796 7900
Fax: (03) 9706 9431

www.chadwickgeotechnics.com.au

Report No	Sample No	Date	Lot No	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W23DS00578	S23DS-01862	1/03/2023	4330 / 3	356566	5781205	40.807	101.0	2.5 dry	Pass	
HDR:W23DS00605	S23DS-01960	2/03/2023	4302 / 2	356488	5781029	38.479	93.0	2.0 dry	Fail	See Retest S23DS-01992
HDR:W23DS00605	S23DS-01961	2/03/2023	4303 / 4	356492	5781050	38.934	97.0	0 dry	Pass	
HDR:W23DS00605	S23DS-01962	2/03/2023	4337 / 3	356523	5781059	38.974	99.0	0 wet	Pass	
HDR:W23DS00605	S23DS-01963	2/03/2023	4338 / 2	356521	5781046	-	96.5	0 wet	Pass	Retest of S23DS-01857
HDR:W23DS00605	S23DS-01964	2/03/2023	4339 / 3	356521	5781036	38.473	97.0	0.0	Pass	
HDR:W23DS00605	S23DS-01965	2/03/2023	4335 / 5	356529	5781095	-	97.0	0.5 wet	Pass	Retest of S23DS-01859
HDR:W23DS00605	S23DS-01966	2/03/2023	4333 / 5	356533	5781117	-	97.5	0 dry	Pass	Retest of S23DS-01860
HDR:W23DS00620	S23DS-01991	3/03/2023	4330 / 4	356581	5781190	40.234	98.0	0 dry	Pass	
HDR:W23DS00620	S23DS-01992	3/03/2023	4302 / 2	356488	5781029	-	99.5	0 dry	Pass	Retest of S23DS-01960
HDR:W23DS00678	S23DS-02182	8/03/2023	4340 / 4	356513	5781026	38.522	101.0	1.5 dry	Pass	
HDR:W23DS00678	S23DS-02183	8/03/2023	4338 / 4	356527	5781045	38.821	99.0	0 dry	Pass	
HDR:W23DS00678	S23DS-02184	8/03/2023	4336 / 4	356519	5781071	39.305	103.0	0.5 dry	Pass	
HDR:W23DS00678	S23DS-02185	8/03/2023	4330 / 5	356501	5781197	41.182	98.5	0.5 dry	Pass	
HDR:W23DS00696	S23DS-02241	10/03/2023	4209 / 4	356498	5781131	40.92	98.5	0.5 dry	Pass	
HDR:W23DS00696	S23DS-02242	10/03/2023	4207 / 4	356491	5781107	40.665	99.5	0.5 dry	Pass	
HDR:W23DS00711	S23DS-02272	14/03/2023	4301 / 3	356481	5781036	38.994	101.5	0.5 dry	Pass	
HDR:W23DS00743	S23DS-02363	16/03/2023	4302 / 4	356483	5781032	39.008	98.5	0.5 dry	Pass	
										no further testing

Appendix C NATA endorsed laboratory reports

CHADWICK GEOTECHNICS

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:W22DS02516
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 22/12/2022

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

Sample Data

Sample ID	S22DS-10058					
Field Sample ID	1					
Client Sample ID	1					
Date Tested	19/12/2022					
Time Tested	07:50					
E:	2730.17 (356553)					
N:	356.80 (5781200)					
EL:	40.47					
Lot / Layer:	4330 / 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 Moisture Content (%)	18.4					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.02					
Field Dry Density (t/m³)	1.71					
Peak Converted Wet Density (t/m³)	2.10					
Optimum Moisture Content (%)	18.5					
Compactive Effort	Standard					
Moisture Ratio (%)	98.5					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**96.5**					

Comments

CHADWICK GEOTECHNICS

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:W22DS02540
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 22/12/2022

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

Sample Data

Sample ID	S22DS-10188					
Field Sample ID	1					
Client Sample ID	2					
Date Tested	20/12/2022					
E:	2728.82 (356551)					
N:	353.61 (5781196)					
EL:	40.70					
Lot / Layer:	4330 / 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 Moisture Content (%)	15.5					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.07					
Field Dry Density (t/m³)	1.79					
Peak Converted Wet Density (t/m³)	2.14					
Optimum Moisture Content (%)	15.5					
Compactive Effort	Standard					
Moisture Ratio (%)	99.0					
Moisture Variation (%)	0.0					
Hilf Density Ratio (%)	**96.5**					

Comments

CHADWICK GEOTECHNICS

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:W22DS02557
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 23/12/2022

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

Sample Data

Sample ID	S22DS-10272					
Field Sample ID	1					
Client Sample ID	3					
Date Tested	21/12/2022					
Time Tested	07:50					
E:	2728.92 (356552)					
N:	352.19 (5781195)					
EL:	40.86					
Lot / Layer:	4330 / 3					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	16.0					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.95					
Field Dry Density (t/m³)	1.68					
Peak Converted Wet Density (t/m³)	2.00					
Optimum Moisture Content (%)	18.5					
Compactive Effort	Standard					
Moisture Ratio (%)	87.5					
Moisture Variation (%)	2.0 dry					
Hilf Density Ratio (%)	**97.5**					

Comments

CHADWICK GEOTECHNICS

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:W23DS00016
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 10/01/2023

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

Sample Data

Sample ID	S23DS-00045					
Field Sample ID	1					
Date Tested	7/01/2023					
Time Tested	12:00					
E:	356550					
N:	5781192					
RL:	40.90					
Lot / Layer:	4330 / -					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	12.4					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.93					
Field Dry Density (t/m³)	1.71					
Peak Converted Wet Density (t/m³)	2.02					
Optimum Moisture Content (%)	14.5					
Compactive Effort	Standard					
Moisture Ratio (%)	85.5					
Moisture Variation (%)	2.0 dry					
Hilf Density Ratio (%)	**95.5**					

Comments

CHADWICK GEOTECHNICS

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:W23DS00045
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/01/2023

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 98% (+- 3% of OMC)
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-00141	S23DS-00142				
Field Sample ID	1	2				
Date Tested	11/01/2023	11/01/2023				
Time Tested	14:40	14:55				
E:	356462	356472				
N:	5781300	5781296				
RL:	44.10	43.87				
Lot / Layer:	4328 / 1	4324 / 1				

Field and Laboratory Data

Depth of Layer (mm)	250	250				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Moisture Content (%)	15.3	15.2				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	2.07	2.08				
Field Dry Density (t/m³)	1.80	1.81				
Peak Converted Wet Density (t/m³)	2.12	2.10				
Optimum Moisture Content (%)	15.5	15.5				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	100.0	98.0				
Moisture Variation (%)	0.0	0.5 dry				
Hilf Density Ratio (%)	**98.0**	**99.0**				

Comments

CHADWICK GEOTECHNICS

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:W23DS00056
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/01/2023

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 1289.2.1.1, 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-00174	S23DS-00175	S23DS-00176	S23DS-00177	S23DS-00178	
Field Sample ID	1	2	3	4	5	
Date Tested	12/01/2023	12/01/2023	12/01/2023	12/01/2023	12/01/2023	
Time Tested	09:00	09:15	13:45	14:00	14:20	
E:	356482	356976	356479	356487	356470	
N:	5781005	5781093	5781083	5781123	5781313	
RL:	39.01	39.96	40.06	40.72	44.28	
Lot / Layer:	4303 / 1	4305 / 1	4306 / 2	4309 / 2	4329 / 2	
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	
Depth of Layer (mm)	200	200	200	200	200	
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	
Oversize Wet (%)	0	0	0	0	0	
Field Moisture Content (%)	13.7	13.0	14.4	16.6	13.5	
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)	2.08	2.08	2.09	2.10	2.10	
Field Dry Density (t/m³)	1.83	1.84	1.82	1.80	1.85	
Peak Converted Wet Density (t/m³)	2.15	1.99	2.08	2.12	2.09	
Optimum Moisture Content (%)	14.0	17.0	16.0	16.0	15.0	
Compactive Effort	Standard	Standard	Standard	Standard	Standard	
Moisture Ratio (%)	98.5	76.5	88.5	102.5	88.5	
Moisture Variation (%)	0.0	4.0 dry	2.0 dry	0.5 wet	1.5 dry	
Hilf Density Ratio (%)	**96.5**	**104.5**	**100.5**	**99.0**	**100.5**	

Comments

CHADWICK GEOTECHNICS

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:W23DS00080
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/01/2023

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

Sample Data

Sample ID	S23DS-00249	S23DS-00250	S23DS-00251	S23DS-00252	S23DS-00253	
Field Sample ID	1	2	3	4	5	
Date Tested	14/01/2023	14/01/2023	14/01/2023	14/01/2023	14/01/2023	
Time Tested	09:10	09:20	09:30	11:30	12:15	
E:	356483	356484	356491	356495	356497	
N:	5781105	5781112	5781138	5781163	5781193	
EL:	40.54	40.70	41.01	41.50	41.71	
Lot / Layer:	4307 / 5	4308 / 5	4310 / 5	4312 / 5	4314 / 6	
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	
Depth of Layer (mm)	200	200	200	200	200	
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	
Oversize Wet (%)	0	0	0	0	0	
Field Moisture Content (%)	13.4	12.6	10.3	16.2	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	
Field Wet Density (t/m³)	2.13	2.00	2.12	2.05	2.05	
Field Dry Density (t/m³)	1.88	1.78	1.92	1.77	1.74	
Peak Converted Wet Density (t/m³)	2.14	2.14	2.13	2.11	2.00	
Optimum Moisture Content (%)	13.5	13.0	12.5	16.0	20.0	
Compactive Effort	Standard	Standard	Standard	Standard	Standard	
Moisture Ratio (%)	98.0	95.5	82.0	101.5	89.0	
Moisture Variation (%)	0.0	0.5 dry	2.0 dry	0.0	2.0 dry	
Hilf Density Ratio (%)	**99.5**	**93.5**	**99.0**	**97.0**	**102.5**	

Comments

CHADWICK GEOTECHNICS

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:W23DS00081
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/01/2023

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 1289.2.1.1, 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-00254	S23DS-00255	S23DS-00256	S23DS-00257		
Field Sample ID	1	2	3	4		
Date Tested	13/01/2023	13/01/2023	13/01/2023	13/01/2023		
Time Tested	09:30	09:45	14:00	10:00		
E:	356469	356479	35650	356980		
N:	5781036	5781061	5781706	5781085		
EL:	38.80	39.701	41.58	39.93		
Lot / Layer:	4301 / -	4304 / -	4314 / -	4305 / 1		
				Retest of S22DS-01751		
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175		
Depth of Layer (mm)	200	200	200	200		
AS Sieve Size (mm)	19.0	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0	0		
Field Moisture Content (%)	13.7	12.9	15.5	14.4		
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.09	2.08	2.08	2.08		
Field Dry Density (t/m³)	1.83	1.84	1.80	1.82		
Peak Converted Wet Density (t/m³)	2.09	2.13	2.12	2.12		
Optimum Moisture Content (%)	16.0	13.5	15.5	15.0		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Ratio (%)	86.5	94.5	99.0	97.5		
Moisture Variation (%)	2.0 dry	1.0 dry	0.0	0.5 dry		
Hilf Density Ratio (%)	**100.0**	**98.0**	**98.0**	**98.0**		

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:W23DS00096
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/01/2023

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

Sample Data

Sample ID	S23DS-00320	S23DS-00321	S23DS-00322	S23DS-00323	S23DS-00324	S23DS-00325
Field Sample ID	1	2	3	4	5	6
Client Sample ID	30	31	32	33	34	35
Date Tested	16/01/2023	16/01/2023	16/01/2023	16/01/2023	16/01/2023	16/01/2023
Time Tested	12:24	11:15	11:37	11:46	11:59	12:09
E:	2664.63 (356489)	2649.53 (356475)	2646.74 (356470)	2659.09 (356483)	2666.90 (356492)	2675.66 (356500)
N:	438.95 (5781281)	232.54 (5781074)	208.41 (5781050)	259.28 (5781101)	205.06 (5781128)	308.97 (5781148)
EL:	43.56	40.26	39.49	40.55	40.93	41.06
Lot / Layer:	4326 / 1	4305 * 2	4303 / 2	4307 / 2	4309 / 2	4311 / 2
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200	200
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 (%)	10.5	10.6	13.7	11.6	14.3	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	AS 1289.2.1.1
Field Wet Density (t/m³)	1.98	2.09	2.15	2.12	2.13	2.12
Field Dry Density (t/m³)	1.79	1.89	1.89	1.89	1.86	1.90
Peak Converted Wet Density (t/m³)	2.01	2.02	2.08	2.11	2.06	1.98
Optimum Moisture Content (%)	15.0	15.0	15.5	14.0	16.5	16.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	70.5	71.5	89.0	83.5	86.0	72.0
Moisture Variation (%)	4.5 dry	4.0 dry	1.5 dry	2.5 dry	2.5 dry	4.5 dry
Hilf Density Ratio (%)	**98.5**	**103.5**	**103.0**	**100.5**	**103.5**	**107.0**

Comments

CHADWICK GEOTECHNICS

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:W23DS00096
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/01/2023

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

Sample Data

Sample ID	S23DS-00326					
Field Sample ID	7					
Client Sample ID	36					
Date Tested	16/01/2023					
Time Tested	13:44					
E:	2678.81 (356501)					
N:	336.34 (5781179)					
EL:	41.58					
Lot / Layer:	4313 / 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 Moisture Content (%)	13.8					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.03					
Field Dry Density (t/m³)	1.78					
Peak Converted Wet Density (t/m³)	2.06					
Optimum Moisture Content (%)	16.0					
Compactive Effort	Standard					
Moisture Ratio (%)	85.5					
Moisture Variation (%)	2.5 dry					
Hilf Density Ratio (%)	**98.5**					

Comments

CHADWICK GEOTECHNICS

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:W23DS00127
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/02/2023

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

Sample Data

Sample ID	S23DS-00413	S23DS-00414				
Field Sample ID	1	2				
Client Sample ID	37	38				
Date Tested	19/01/2023	19/01/2023				
Time Tested	07:55	15:57				
Lot:	4326	4305				
Layer:	1	2				
	Retest of S23DS-00320	Retest of S23DS-00321				
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 (%)	13.9	12.7				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	2.02	2.06				
Field Dry Density (t/m³)	1.77	1.83				
Peak Converted Wet Density (t/m³)	2.06	2.09				
Optimum Moisture Content (%)	16.5	15.0				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	85.0	84.0				
Moisture Variation (%)	2.5 dry	2.5 dry				
Hilf Density Ratio (%)	**98.0**	**99.0**				

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:W23DS00147
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/02/2023

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

Sample Data

Sample ID	S23DS-00466	S23DS-00467	S23DS-00468	S23DS-00469		
Field Sample ID	1	2	3	4		
Client Sample ID	39	40	41	42		
Date Tested	20/01/2023	20/01/2023	20/01/2023	20/01/2023		
Time Tested	07:40	07:50	09:43	09:56		
E:	-	-	2619.343 (356444)	2643.539 (356469)		
N:	-	-	405.212 (5781247)	424.874 (5781266)		
EL:	-	-	43.859	43.511		
Lot / Layer:	4311 / 2	4308 / 1	4323 / 1	4325 / 1		
	Retest of S23Ds-00325	Retest of S23DS-00250				
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175		
Depth of Layer (mm)	200	200	200	200		
AS Sieve Size (mm)	19.0	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0	0		
Field Moisture Content (%)	15.1	14.1	10.9	12.6		
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)	2.14	2.13	2.13	2.11		
Field Dry Density (t/m³)	1.86	1.87	1.92	1.87		
Peak Converted Wet Density (t/m³)	2.11	2.10	2.19	2.19		
Optimum Moisture Content (%)	15.0	15.5	11.5	12.5		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Ratio (%)	99.0	90.5	96.0	101.0		
Moisture Variation (%)	0.0	1.5 dry	0.5 dry	0.0		
Hilf Density Ratio (%)	**101.0**	**101.5**	**97.5**	**96.0**		

Comments

CHADWICK GEOTECHNICS

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:W23DS00148
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/02/2023

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

Sample Data

Sample ID	S23DS-00470	S23DS-00471				
Field Sample ID	1	2				
Client Sample ID	43	44				
Date Tested	21/01/2023	21/01/2023				
Time Tested	11:50	11:55				
E:	2652.564 (356480)	2665.034 (356491)				
N:	193.711 (5781038)	192.699 (5781036)				
EL:	38.704	38.414				
Lot / Layer:	4301 / 1	4302 / 1				

Field and Laboratory Data

Depth of Test (mm)	250	250				
Depth of Layer (mm)	275	275				
AS Sieve Size (mm)	19.0	19.0				
Oversize Wet (%)	0	0				
Field Moisture Content (%)	16.4	14.2				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	2.13	2.01				
Field Dry Density (t/m³)	1.83	1.76				
Peak Converted Wet Density (t/m³)	2.13	2.10				
Optimum Moisture Content (%)	15.5	15.0				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	104.5	94.5				
Moisture Variation (%)	0.5 wet	1.0 dry				
Hilf Density Ratio (%)	**100.0**	**96.0**				

Comments

CHADWICK GEOTECHNICS

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:W23DS00169
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/02/2023

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 1289.2.1.1, 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-00542	S23DS-00543	S23DS-00544	S23DS-00545		
Field Sample ID	1	2	3	4		
Client Sample ID	49	50	51	52		
Date Tested	24/01/2023	24/01/2023	24/01/2023	24/01/2023		
Time Tested	08:15	08:25	15:02	15:12		
E:	2662.357 (356485)	2632.756 (356456)	2630.637 (356454)	2665.815 (356492)		
N:	451.526 (5781293)	464.697 (5781307)	415.492 (5781258)	434.309 (5781278)		
EL:	43.869	44.477	43.896	43.523		
Lot / Layer:	4327 / 3	4329 / 3	4324 / 2	4326 / 2		
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175		
Depth of Layer (mm)	200	200	200	200		
AS Sieve Size (mm)	19.0	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0	0		
Field Moisture Content (%)	12.8	13.6	11.0	12.3		
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)	2.11	2.12	2.08	2.05		
Field Dry Density (t/m³)	1.87	1.87	1.87	1.83		
Peak Converted Wet Density (t/m³)	2.18	2.16	2.12	2.15		
Optimum Moisture Content (%)	13.0	14.0	13.0	12.5		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Ratio (%)	98.0	96.5	83.5	97.5		
Moisture Variation (%)	0.5 dry	0.5 dry	2.0 dry	0.5 dry		
Hilf Density Ratio (%)	**96.5**	**98.5**	**98.0**	**95.5**		

Comments

CHADWICK GEOTECHNICS

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:W23DS00184
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/02/2023

Sample Details

Location:
Client Request ID:
Specification Requirements:
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-00578	S23DS-00579				
Field Sample ID	1	2				
Client Sample ID	53	54				
Date Tested	25/01/2023	25/01/2023				
Time Tested	14:50	15:02				
E:	2688.040 (356510)	2659.009 (356484)				
N:	412.997 (5781254)	385.615 (5781228)				
EL:	42.656	42.559				
Lot / Layer:	4320 / 2	4322 / 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 Moisture Content (%)	13.9	14.1				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	2.04	2.03				
Field Dry Density (t/m³)	1.79	1.78				
Peak Converted Wet Density (t/m³)	2.04	2.18				
Optimum Moisture Content (%)	16.0	14.0				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	86.0	99.5				
Moisture Variation (%)	2.5 dry	0.0				
Hilf Density Ratio (%)	**100.0**	**93.0**				

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:W23DS00213
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/02/2023

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 1289.2.1.1, 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-00659	S23DS-00660	S23DS-00661			
Field Sample ID	1	2	3			
Client Sample ID	55	56	57			
Date Tested	30/01/2023	30/01/2023	30/01/2023			
Time Tested	11:35	15:37	15:48			
E:	-	2702.674 (356525)	2713.855 (356541)			
N:	-	395.386 (5781239)	377.803 (5781221)			
EL:	-	42.043	41.444			
Lot / Layer:	4322 / 2	4318 / 2	4316 / 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 Moisture Content (%)	13.4	12.9	12.1			
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Density (t/m³)	2.11	2.14	2.14			
Field Dry Density (t/m³)	1.86	1.90	1.91			
Peak Converted Wet Density (t/m³)	2.12	2.11	2.18			
Optimum Moisture Content (%)	14.0	13.5	12.5			
Compactive Effort	Standard	Standard	Standard			
Moisture Ratio (%)	96.5	94.5	97.0			
Moisture Variation (%)	0.5 dry	0.5 dry	0.5 dry			
Hilf Density Ratio (%)	**99.5**	**101.5**	**98.5**			

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:W23DS00216
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/02/2023

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

Sample Data

Sample ID	S23DS-00670	S23DS-00671	S23DS-00672	S23DS-00673	S23DS-00674	S23DS-00675
Field Sample ID	1	2	3	4	5	6
Client Sample ID	58	59	60	61	62	63
Date Tested	31/01/2023	31/01/2023	31/01/2023	31/01/2023	31/01/2023	31/01/2023
Time Tested	10:03	10:08	10:18	10:26	15:16	15:24
E:	2627.326 (356452)	2637.705 (356462)	2649.322 (356473)	2659.256 (356483)	2671.430 (356493)	2674.422 (356498)
N:	400.231 (5781242)	410.911 (5781254)	420.946 (5781260)	428.874 (5781271)	297.145 (5781139)	321.869 (5781164)
EL:	44.017	43.949	43.749	43.673	41.077	41.483
Lot / Layer:	4323 / 3 Eastside	1324 / 3 Eastside	4325 / 3Eastside	4326 / 1Eastside	4310 / 3	4312 / 3
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200	200
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 (%)	11.7	9.0	11.0	10.0	11.8	11.9
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
Field Wet Density (t/m³)	2.17	2.11	2.15	2.09	2.11	2.08
Field Dry Density (t/m³)	1.94	1.93	1.94	1.90	1.88	1.86
Peak Converted Wet Density (t/m³)	2.11	2.13	2.11	2.14	2.17	2.19
Optimum Moisture Content (%)	12.5	11.5	13.0	12.5	12.5	12.5
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	93.0	77.5	84.0	81.5	96.5	96.5
Moisture Variation (%)	1.0 dry	2.5 dry	2.0 dry	2.5 dry	0.5 dry	0.5 dry
Hilf Density Ratio (%)	**102.5**	**99.0**	**102.0**	**97.5**	**97.0**	**95.5**

Comments

CHADWICK GEOTECHNICS

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:W23DS00228
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/02/2023

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 1289.2.1.1, 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-00715	S23DS-00716	S23DS-00717	S23DS-00718		
Field Sample ID	1	2	3	4		
Date Tested	1/02/2023	1/02/2023	1/02/2023	1/02/2023		
Time Tested	11:02	11:08	11:16	12:00		
E:	2687.571 (356510)	2681.147 (356503)	2703.012 (356524)	2689.327 (356513)		
N:	400.319 (5781241)	387.317 (5781231)	380.929 (5781223)	371.158 (5781213)		
EL:	42.597	42.438	41.936	41.988		
Lot / Layer:	4319 / 3	4321 / 3	4317 / 3	4315 / 3		

Field and Laboratory Data

Depth of Test (mm)	175	175	175	175		
Depth of Layer (mm)	200	200	200	200		
AS Sieve Size (mm)	19.0	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0	0		
Field Moisture Content (%)	12.7	24.9	15.7	15.1		
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.16	2.14	2.11	2.02		
Field Dry Density (t/m³)	1.92	1.72	1.82	1.75		
Peak Converted Wet Density (t/m³)	2.19	2.21	2.15	2.20		
Optimum Moisture Content (%)	13.0	25.5	16.0	17.5		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Ratio (%)	99.5	97.0	98.5	87.0		
Moisture Variation (%)	0.0	0.5 dry	0.0	2.0 dry		
Hilf Density Ratio (%)	**98.5**	**97.0**	**98.0**	**92.0**		

Comments

CHADWICK GEOTECHNICS

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:W23DS00241
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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 1289.2.1.1, 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-00760	S23DS-00761	S23DS-00762	S23DS-00763	S23DS-00764	
Field Sample ID	1	2	3	4	5	
Client Sample ID	68	9	70	71	72	
Date Tested	2/02/2023	2/02/2023	2/02/2023	2/02/2023	2/02/2023	
Time Tested	14:37	14:44	14:54	15:02	15:09	
E:	2668.768 (356492)	2679.484 (356504)	2696.335 (356517)	2710.042 (356534)	-	
N:	378.797 (5781219)	408.823 (5781251)	391.637 (5781234)	373.532 (5781216)	-	
EL:	42.691	43.073	42.448	41.808	-	
Lot / Layer:	4322 / 4	4320 / 4	4318 / 4	4316 / 4	4315 / 3	
					Retest of S23DS-00718	
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	
Depth of Layer (mm)	200	200	200	200	200	
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	
Oversize Wet (%)	0	0	0	0	0	
Field Moisture Content (%)	15.2	13.2	13.9	14.4	12.4	
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	
Field Wet Density (t/m³)	2.10	2.08	2.08	2.07	2.10	
Field Dry Density (t/m³)	1.82	1.84	1.83	1.81	1.87	
Peak Converted Wet Density (t/m³)	2.14	2.14	2.13	2.14	2.09	
Optimum Moisture Content (%)	15.0	13.5	14.0	14.5	14.5	
Compactive Effort	Standard	Standard	Standard	Standard	Standard	
Moisture Ratio (%)	102.0	96.5	98.5	98.0	85.5	
Moisture Variation (%)	0.5 wet	0.5 dry	0.0	0.5 dry	2.0 dry	
Hilf Density Ratio (%)	**98.0**	**97.5**	**97.5**	**96.5**	**100.5**	

Comments

CHADWICK GEOTECHNICS

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:W23DS00288
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-00897	S23DS-00898	S23DS-00899	S23DS-00900	S23DS-00901	
Field Sample ID	1	2	3	4	5	
Client Sample ID	72	73	74	75	76	
Date Tested	7/02/2023	7/02/2023	7/02/2023	7/02/2023	7/02/2023	
Time Tested	08:29	08:41	08:48	08:55	09:02	
E:	2703.218 (356527)	2707.436 (356535)	2675.735 (356499)	2672.010 (356497)	2668.495 (356490)	
N:	279.023 (5781122)	300.532 (5781143)	269.559 (5781112)	245.231 (5781089)	223.469 (5781067)	
EL:	39.638	40.043	40.387	39.870	39.453	
Lot / Layer:	4333 / 1	4331 / 1	4308 / 3	4306 / 3	4304 / 3	
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	
Depth of Layer (mm)	200	200	200	200	200	
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	
Oversize Wet (%)	0	0	0	0	0	
Field Moisture Content (%)	14.3	13.2	14.0	13.5	13.4	
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	
Field Wet Density (t/m³)	2.05	2.14	2.10	2.14	2.08	
Field Dry Density (t/m³)	1.79	1.89	1.84	1.89	1.83	
Peak Converted Wet Density (t/m³)	2.17	2.18	2.13	2.17	2.07	
Optimum Moisture Content (%)	14.5	13.5	14.0	13.5	14.5	
Compactive Effort	Standard	Standard	Standard	Standard	Standard	
Moisture Ratio (%)	99.0	99.5	98.5	99.0	94.0	
Moisture Variation (%)	0.0	0.0	0.0	0.0	1.0 dry	
Hilf Density Ratio (%)	**94.5**	**98.5**	**98.5**	**99.0**	**100.5**	

Comments

CHADWICK GEOTECHNICS

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:W23DS00298
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-00932	S23DS-00933	S23DS-00934	S23DS-00935	S23DS-00936	
Field Sample ID	1	2	3	4	5	
Client Sample ID	77	78	79	80	81	
Date Tested	8/02/2023	8/02/2023	8/02/2023	8/02/2023	8/02/2023	
Time Tested	11:03	11:12	11:20	12:30	15:32	
E:	2701.589 (356526)	2703.221 (356528)	2706.212 (356529)	-	2744.523 (356569)	
N:	257.007 (5781098)	269.281 (5781111)	289.738 (5781131)	-	354.256 (5781196)	
EL:	39.396	39.713	40.020	-	40.063	
Lot / Layer:	4335 / 1	4334 / 2	4332 / 2	4333 / 1	4330 / 1	
				Retest of S23DS-00897		
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	
Depth of Layer (mm)	200	200	200	200	200	
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	
Oversize Wet (%)	0	0	0	0	0	
Field Moisture Content (%)	15.4	20.0	19.2	17.3	16.4	
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	
Field Wet Density (t/m³)	2.05	1.99	2.01	2.01	1.94	
Field Dry Density (t/m³)	1.78	1.66	1.69	1.71	1.66	
Peak Converted Wet Density (t/m³)	2.04	1.96	1.97	2.01	2.12	
Optimum Moisture Content (%)	18.0	22.5	21.5	20.0	16.5	
Compactive Effort	Standard	Standard	Standard	Standard	Standard	
Moisture Ratio (%)	87.0	88.5	89.0	87.0	98.0	
Moisture Variation (%)	2.5 dry	2.5 dry	2.0 dry	2.5 dry	0.5 dry	
Hilf Density Ratio (%)	**100.5**	**102.0**	**102.5**	**100.0**	**91.5**	

Comments

CHADWICK GEOTECHNICS

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:W23DS00322
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-01079	S23DS-01080	S23DS-01081	S23DS-01082	S23DS-01083	
Field Sample ID	1	2	3	4	5	
Client Sample ID	82	83	84	85	86	
Date Tested	9/02/2023	9/02/2023	9/02/2023	9/02/2023	9/02/2023	
Time Tested	10:50	14:21	14:05	14:12	14:32	
E:	-	2713.062 (356537)	2697.880 (356521)	2670.940 (356490)	2700.925 (356523)	
N:	-	387.101 (5781233)	407.134 (5781251)	401.538 (5781244)	359.583 (5781201)	
EL:	-	42.026	42.899	43.292	41.904	
Lot / Layer:	4330 / 1	4317 / 5	4319 / 5	4321 / 5	4315 / 5	
	Retest of S23DS-00936					
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	
Depth of Layer (mm)	200	200	200	200	200	
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	
Oversize Wet (%)	0	0	0	0	0	
Field Moisture Content (%)	15.6	15.4	19.7	13.4	18.3	
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)	2.03	2.12	2.09	2.13	2.09	
Field Dry Density (t/m³)	1.76	1.84	1.75	1.88	1.76	
Peak Converted Wet Density (t/m³)	2.11	2.12	2.03	2.16	2.02	
Optimum Moisture Content (%)	15.5	15.5	20.0	13.5	20.5	
Compactive Effort	Standard	Standard	Standard	Standard	Standard	
Moisture Ratio (%)	99.0	98.0	97.5	99.5	89.0	
Moisture Variation (%)	0.0	0.5 dry	0.5 dry	0.0	2.0 dry	
Hilf Density Ratio (%)	**96.0**	**100.0**	**103.0**	**98.5**	**103.0**	

Comments

CHADWICK GEOTECHNICS

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:W23DS00345
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-01178	S23DS-01179				
Field Sample ID	1	2				
Client Sample ID	87	88				
Date Tested	10/02/2023	10/02/2023				
Time Tested	09:10	09:19				
E:	2702.572 (356525)	2707.840 (356531)				
N:	299.447 (5781142)	277.451 (5781120)				
EL:	40.462	39.976				
Lot / Layer:	4331 / 3	4333 / 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 Moisture Content (%)	13.3	15.3				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	2.09	2.07				
Field Dry Density (t/m³)	1.84	1.79				
Peak Converted Wet Density (t/m³)	2.07	2.06				
Optimum Moisture Content (%)	15.5	17.5				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	86.5	87.5				
Moisture Variation (%)	2.0 dry	2.0 dry				
Hilf Density Ratio (%)	**101.0**	**100.5**				

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:W23DS00350
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-01201	S23DS-01202				
Field Sample ID	1	2				
Client Sample ID	89	90				
Date Tested	11/02/2023	11/02/2023				
Time Tested	12:15	12:25				
E:	2688.366 (356510)	2702.321 (356529)				
N:	416.718 (5781259)	399.447 (5781243)				
EL:	43.333	42.813				
Lot / Layer:	4320 / 6	4318 / 6				

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 (%)	17.9	20.1				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	1.96	2.04				
Field Dry Density (t/m³)	1.66	1.70				
Peak Converted Wet Density (t/m³)	1.92	2.01				
Optimum Moisture Content (%)	21.0	21.0				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	84.5	95.5				
Moisture Variation (%)	3.0 dry	1.0 dry				
Hilf Density Ratio (%)	**102.0**	**102.0**				

Comments

CHADWICK GEOTECHNICS

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:W23DS00364
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-01249					
Field Sample ID	1					
Client Sample ID	91					
Date Tested	13/02/2023					
Time Tested	14:34					
E:	2681.204 (356584)					
N:	381.050 (5781175)					
EL:	43.218					
Lot / Layer:	4321 / 6					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	22.5					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.03					
Field Dry Density (t/m³)	1.65					
Peak Converted Wet Density (t/m³)	1.93					
Optimum Moisture Content (%)	26.0					
Compactive Effort	Standard					
Moisture Ratio (%)	87.5					
Moisture Variation (%)	3.0 dry					
Hilf Density Ratio (%)	**105.0**					

Comments

CHADWICK GEOTECHNICS

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:W23DS00379
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-01303	S23DS-01304	S23DS-01305			
Field Sample ID	1	2	3			
Client Sample ID	92	93	94			
Date Tested	14/02/2023	14/02/2023	14/02/2023			
Time Tested	14:15	14:25	14:34			
E:	2698.145 (356522)	2708.630 (356531)	2710.327 (356533)			
N:	253.517 (5781098)	266.056 (5781110)	288.715 (5781132)			
EL:	39.799	39.825	40.312			
Lot / Layer:	4335 / 3	4334 / 4	4332 / 4			
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 Moisture Content (%)	18.8	19.7	25.4			
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Density (t/m³)	1.98	2.09	1.97			
Field Dry Density (t/m³)	1.67	1.74	1.57			
Peak Converted Wet Density (t/m³)	1.99	1.99	1.87			
Optimum Moisture Content (%)	21.5	22.5	28.5			
Compactive Effort	Standard	Standard	Standard			
Moisture Ratio (%)	88.0	88.5	90.0			
Moisture Variation (%)	2.5 dry	2.5 dry	2.5 dry			
Hilf Density Ratio (%)	**99.5**	**105.0**	**105.0**			

Comments

CHADWICK GEOTECHNICS

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:W23DS00484
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-01611					
Field Sample ID	1					
Client Sample ID	95					
Date Tested	22/02/2023					
Time Tested	10:13					
E:	2724.337 (356550)					
N:	348.900 (5781191)					
EL:	40.776					
Lot / Layer:	4330 / 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)	2.10					
Peak Converted Wet Density (t/m³)	2.00					
Compactive Effort	Standard					
Moisture Variation (%)	4.5 dry					
Hilf Density Ratio (%)	**104.5**					

Comments

CHADWICK GEOTECHNICS

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:W23DS00515
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-01698					
Field Sample ID	1					
Client Sample ID	96					
Date Tested	24/02/2023					
Time Tested	07:56					
Lot / Layer:	4330 / 2					
	Retest of S23DS-01611					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	19.0					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.10					
Field Dry Density (t/m³)	1.76					
Peak Converted Wet Density (t/m³)	2.05					
Optimum Moisture Content (%)	19.5					
Compactive Effort	Standard					
Moisture Ratio (%)	98.0					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**102.5**					

Comments

CHADWICK GEOTECHNICS

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:W23DS00538
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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

Sample Data

Sample ID	S23DS-01758	S23DS-01759	S23DS-01760			
Field Sample ID	1	2	3			
Client Sample ID	97	98	99			
Date Tested	27/02/2023	27/02/2023	27/02/2023			
Time Tested	09:33	09:36	12:36			
E:	2697.053 (356518)	2695.679 (356517)	2700.523 (356521)			
N:	216.439 (5781057)	193.178 (5781033)	229.051 (5781069)			
EL:	38.589	38.004	38.980			
Lot / Layer:	4337 / 1	4339 / 1	4336 / 2			
Field and Laboratory Data						
AS Sieve Size (mm)	19.0	19.0	19.0			
Oversize Wet (%)	0	0	0			
Field Moisture Content (%)	16.9	14.1	14.1			
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Density (t/m³)	2.09	2.06	2.12			
Field Dry Density (t/m³)	1.78	1.81	1.86			
Peak Converted Wet Density (t/m³)	1.99	2.09	2.06			
Optimum Moisture Content (%)	19.5	16.0	16.5			
Compactive Effort	Standard	Standard	Standard			
Moisture Ratio (%)	87.0	87.0	85.0			
Moisture Variation (%)	2.5 dry	2.0 dry	2.5 dry			
Hilf Density Ratio (%)	**104.5**	**98.5**	**103.0**			

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:W23DS00578
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 3/03/2023

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 1289.2.1.1, 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-01857	S23DS-01858	S23DS-01859	S23DS-01860	S23DS-01861	S23DS-01862
Field Sample ID	1	2	3	4	5	6
Client Sample ID	100	101	102	103	104	105
Date Tested	1/03/2023	1/03/2023	1/03/2023	1/03/2023	1/03/2023	1/03/2023
Time Tested	12:01	12:07	12:14	12:20	12:27	14:02
E:	2697.780 (356521)	2694.851 (356518)	2707.036 (356529)	2708.893 (356533)	2712.203 (356536)	2742.762 (356566)
N:	203.234 (5781046)	183.424 (5781024)	254.667 (5781095)	274.950 (5781117)	297.649 (5781139)	363.737 (5781205)
EL:	38.386	37.906	39.7947	40.239	40.679	40.807
Lot / Layer:	4338 / 2	4340 / 2	4335 / 5	4333 / 5	4331 / 5	4330 / 3
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200	200
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 (%)	14.2	15.0	13.7	13.8	13.9	18.1
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)	2.05	2.01	2.04	2.10	2.05	1.99
Field Dry Density (t/m³)	1.80	1.75	1.80	1.85	1.80	1.69
Peak Converted Wet Density (t/m³)	2.19	2.09	2.17	2.23	2.16	1.97
Optimum Moisture Content (%)	14.0	15.5	13.5	14.0	14.0	20.5
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	101.0	95.0	101.0	99.5	101.0	88.0
Moisture Variation (%)	0.0	1.0 dry	0.0	0.0	0.0	2.5 dry
Hilf Density Ratio (%)	**94.0**	**96.5**	**94.0**	**94.5**	**95.0**	**101.0**

Comments

CHADWICK GEOTECHNICS

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:W23DS00605
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/03/2023

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 1289.2.1.1, 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-01960	S23DS-01961	S23DS-01962	S23DS-01963	S23DS-01964	S23DS-01965
Field Sample ID	1	2	3	4	5	6
Date Tested	2/03/2023	2/03/2023	2/03/2023	2/03/2023	2/03/2023	2/03/2023
Time Tested	14:25	14:41	15:05	14:56	14:49	15:15
E:	2662.582 (356488)	2667.047 (356492)	2699.391 (356523)	-	2696.052 (356521)	-
N:	186.742 (5781029)	206.373 (5781050)	216.446 (5781059)	-	193.958 (5781036)	-
EL:	38.479	38.934	38.974	-	38.473	-
Lot / Layer:	4302 / 2	4303 / 4	4337 / 3	4338 / 2	4339 / 3	4335 / 5
				Retest of S23DS-01857		Retest of S23DS-01859
Field and Laboratory Data						
Depth of Test (mm)	175	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200	200
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 (%)	13.9	13.2	13.8	13.5	10.5	13.8
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)	1.93	2.13	2.13	2.09	2.06	2.09
Field Dry Density (t/m³)	1.69	1.88	1.87	1.84	1.87	1.84
Peak Converted Wet Density (t/m³)	2.07	2.19	2.16	2.17	2.13	2.16
Optimum Moisture Content (%)	16.0	13.5	14.0	13.5	10.5	13.5
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	87.5	99.0	100.5	101.5	100.0	103.0
Moisture Variation (%)	2.0 dry	0.0	0.0	0.0	0.0	0.5 wet
Hilf Density Ratio (%)	**93.0**	**97.0**	**99.0**	**96.5**	**97.0**	**97.0**

Comments

CHADWICK GEOTECHNICS

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:W23DS00605
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/03/2023

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 1289.2.1.1, 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-01966					
Field Sample ID	7					
Date Tested	2/03/2023					
Time Tested	15:25					
E:	-					
N:	-					
EL:	-					
Lot / Layer:	4333 / 5					
	Retest of S23DS-01860					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	13.4					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.12					
Field Dry Density (t/m³)	1.87					
Peak Converted Wet Density (t/m³)	2.17					
Optimum Moisture Content (%)	13.5					
Compactive Effort	Standard					
Moisture Ratio (%)	98.5					
Moisture Variation (%)	0.0					
Hilf Density Ratio (%)	**97.5**					

Comments

CHADWICK GEOTECHNICS

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:W23DS00620
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/03/2023

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 1289.2.1.1, 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-01991	S23DS-01992				
Field Sample ID	1	2				
Client Sample ID	113	114				
Date Tested	3/03/2023	3/03/2023				
Time Tested	11:10	12:17				
E:	2756.721 (356581)	-				
N:	346.381 (5781190)	-				
EL:	40.234	-				
Lot / Layer:	4330 / 4	4302 / 2				
		Retest of S23DS-01960				
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 (%)	14.6	11.3				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	2.11	2.14				
Field Dry Density (t/m³)	1.84	1.92				
Peak Converted Wet Density (t/m³)	2.15	2.15				
Optimum Moisture Content (%)	14.5	11.5				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	99.5	99.0				
Moisture Variation (%)	0.0	0.0				
Hilf Density Ratio (%)	**98.0**	**99.5**				

Comments

CHADWICK GEOTECHNICS

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:W23DS00678
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/03/2023

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

Sample Data

Sample ID	S23DS-02182	S23DS-02183	S23DS-02184	S23DS-02185		
Field Sample ID	1	2	3	4		
Date Tested	8/03/2023	8/03/2023	8/03/2023	8/03/2023		
Time Tested	14:48	14:55	15:02			
E:	2689.632 (356513)	2704.040 (356527)	2695.659 (356519)	2736.856 (356501)		
N:	183.196 (5781026)	201.948 (5781045)	228.826 (5781071)	356.005 (5781197)		
EL:	38.522	38.821	39.305	41.182		
Lot / Layer:	4340 / 4	4338 / 4	4336 / 4	4330 / 5		

Field and Laboratory Data

Depth of Test (mm)	175	175	175	175		
Depth of Layer (mm)	200	200	200	200		
AS Sieve Size (mm)	19.0	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0	0		
Field Moisture Content (%)	17.8	16.7	15.3	14.3		
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)	2.04	2.02	2.17	2.10		
Field Dry Density (t/m³)	1.73	1.73	1.88	1.84		
Peak Converted Wet Density (t/m³)	2.01	2.05	2.11	2.14		
Optimum Moisture Content (%)	19.5	17.0	15.5	15.0		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Ratio (%)	92.0	98.5	98.0	97.0		
Moisture Variation (%)	1.5 dry	0.0	0.5 dry	0.5 dry		
Hilf Density Ratio (%)	**101.0**	**99.0**	**103.0**	**98.5**		

Comments

CHADWICK GEOTECHNICS

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:W23DS00696
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/03/2023

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

Sample Data

Sample ID	S23DS-02241	S23DS-02242				
Field Sample ID	1	2				
Client Sample ID	119	120				
Date Tested	10/03/2023	10/03/2023				
Time Tested	13:09	12:57				
E:	2671.814 (356498)	2663.875 (356491)				
N:	285.395 (5781131)	261.600 (5781107)				
EL:	40.920	40.665				
Lot / Layer:	4209 / 4	4207 / 4				

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 (%)	14.8	14.8				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	2.06	2.10				
Field Dry Density (t/m³)	1.80	1.83				
Peak Converted Wet Density (t/m³)	2.10	2.11				
Optimum Moisture Content (%)	15.5	15.0				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	96.5	97.5				
Moisture Variation (%)	0.5 dry	0.5 dry				
Hilf Density Ratio (%)	**98.5**	**99.5**				

Comments

CHADWICK GEOTECHNICS

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:W23DS00711
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/03/2023

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 1289.2.1.1, 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-02272					
Field Sample ID	1					
Client Sample ID	121					
Date Tested	14/03/2023					
Time Tested	15:39					
E:	2652.445 (356481)					
N:	189.432 (5781036)					
EL:	38.994					
Lot / Layer:	4301 / 3					

Field and Laboratory Data

Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	12.2					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.14					
Field Dry Density (t/m³)	1.91					
Peak Converted Wet Density (t/m³)	2.11					
Optimum Moisture Content (%)	13.0					
Compactive Effort	Standard					
Moisture Ratio (%)	94.5					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**101.5**					

Comments

CHADWICK GEOTECHNICS

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:W23DS00743
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
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: 20/03/2023

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

Sample Data

Sample ID	S23DS-02363					
Field Sample ID	1					
Client Sample ID	122					
Date Tested	16/03/2023					
Time Tested	15:45					
E:	2661.154 (356483)					
N:	193.451 (5781032)					
EL:	39.008					
Lot / Layer:	4302 / 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)	2.09					
Peak Converted Wet Density (t/m³)	2.12					
Compactive Effort	Standard					
Moisture Variation (%)	0.5 dry					
Hilf Density Ratio (%)	**98.5**					

Comments

CHADWICK GEOTECHNICS

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: MAT:S23DS-00472/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: J. Lamont (Dandenong Laboratory Manager)
Date of Issue: 11/02/2023

Sample Details

Sample Location	E: 2643.539 (356469), N: 424.874 (5781266), R.L 43.511, Lot 4325 / Layer 1
Field Sample ID	1
Date Sampled	20/01/2023
Time Sampled	09:56
Source	Onsite
Material	CL; Sandy CLAY trace gravel, brown, low plasticity.
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S23DS-00472

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	12.7	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	0.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	26	
Plastic Limit (%)	AS 1289.3.2.1	12	
Plasticity Index (%)	AS 1289.3.3.1	14	
Date Tested		2/02/2023	

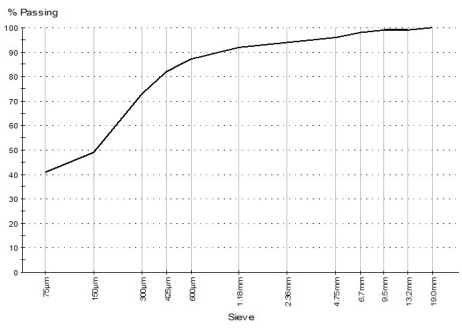
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 25/01/2023

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	99	
9.5mm	99	
6.7mm	98	
4.75mm	96	
2.36mm	94	
1.18mm	92	
600µm	87	
425µm	82	
300µm	73	
150µm	49	
75µm	41	

Chart



Comments

N/A

CHADWICK GEOTECHNICS

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: MAT:S23DS-01767/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: J. Lamont (Dandenong Laboratory Manager)
Date of Issue: 19/04/2023

Sample Details

Sample Location	E 2700.523 (356521), N 229.051 (5781069), R.L 38.980, Lot 4336 / Layer 2
Field Sample ID	1
Date Sampled	27/02/2023
Time Sampled	12:36
Source	Onsite
Material	CI: Sandy CLAY trace gravel,grey mottled orange, medium plasticity.
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S23DS-01767

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	15.6	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	10.5	
Mould Length (mm)		250	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	41	
Plastic Limit (%)	AS 1289.3.2.1	15	
Plasticity Index (%)	AS 1289.3.3.1	26	
Date Tested		20/03/2023	

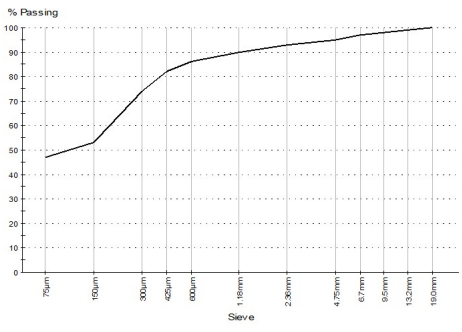
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 17/03/2023

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	99	
9.5mm	98	
6.7mm	97	
4.75mm	95	
2.36mm	93	
1.18mm	90	
600µm	86	
425µm	82	
300µm	74	
150µm	53	
75µm	47	

Chart



Comments

N/A

CHADWICK GEOTECHNICS

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: MAT:S23DS-02257/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Meridian Estate, Stage 43
Project No.: 3807351.043
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: J. Lamont (Dandenong Laboratory Manager)
Date of Issue: 19/04/2023

Sample Details

Sample Location	E 2663.875 (356491), N 261.600 (5781107), R.L 40.665, Lot 4207 / Layer 4
Field Sample ID	1
Date Sampled	10/03/2023
Time Sampled	12:57
Source	Onsite
Material	CI: Sandy CLAY trace gravel, dark brown, medium plasticity.
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S23DS-02257

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	12.9	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	10.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	40	
Plastic Limit (%)	AS 1289.3.2.1	14	
Plasticity Index (%)	AS 1289.3.3.1	26	
Date Tested		4/04/2023	

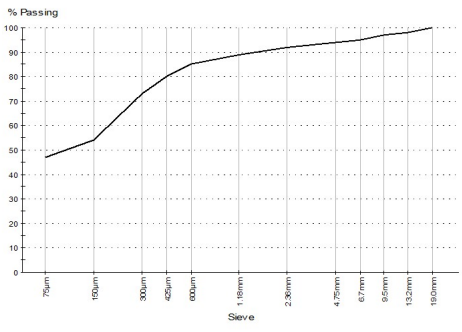
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 31/03/2023

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	98	
9.5mm	97	
6.7mm	95	
4.75mm	94	
2.36mm	92	
1.18mm	89	
600µm	85	
425µm	80	
300µm	73	
150µm	54	
75µm	47	

Chart



Comments

N/A

Appendix D Controlled Fill Certificate

CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : Meridian Central Estate Stage 43
Lots 4301 to 4340

Chadwick Geotechnics REF: 3807351.043v1

CLIENT : Greenridge Properties Pty Ltd
PO Box 4136
Dandenong South VIC 3164

DATE: 30 May 2023

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 (19 December 2022 and was completed on 16 March 2023). 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

Timothy Chadwick
Project Director

CHADWICK
GEOTECHNICS