CHADWICK GEOTECHNICS

REPORT

Level 1 Geotechnical Inspection and Testing Authority Services

Riverfield Square Estate Stage 23
Lots 2301 to 2330

Prepared for:

Greenridge Properties Pty Ltd

03 March 2025

Our Ref: 1091938.023.v1

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

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Document Control

Title:	Level One Inspection and testing Services.				
Date	**Version**	**Description**	**Prepared by:**	**Reviewed by:**	**Authorised by**
03 March 2025	V1	Final	STPA and RHB	RWMc	MCDM

1 Introduction

Chadwick Geotechnics Pty Ltd (Chadwick Geotechnics), was engaged by Greenridge Properties Pty Ltd, to provide Level 1 Geotechnical Inspection and Testing Authority (GITA) services for the earthworks conducted within Stage 23 of the Riverfield Square Estate in Clyde North between 03 June 2024 and 9th October 2024.The project is referred to as 'Stage 23' herein.

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

2 Project details

2.1 Location

Stage 23 is located to the East of Tuckers Road and North of Ballarto Rd. Stages 21 and 22 are 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

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
June 2024	3, 26
July 2024	8,26,
August 2024	9, 10, 13, 14, 15, 16, 19, 20, 22, 26,
Sep 2024	2, 4, 6, 9, 17, 19, 20, 24,
Oct 2024	1, 2, 3, 4, 9,

2.4 Included Areas

This report is applicable to material placed by the contractor on the residential lots within Riverfield Square Estate Stage 23, as shown on **Figure 2.1** and on the Site Plan in **Appendix A,** and with reference to Section 2.5 (Excluded Areas) of this report.

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

- Lots 2301 to 2330.

2.5 Excluded Areas

This report does not include fill outside the general boundary of the filled areas as shown in **Figure 2.1**. No fill was placed on the lots not mentioned in Section 2.4 of this report.

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

3 Specifications

Project specifications were prepared by Beveridge Williams Pty Ltd for the project and presented on the drawing titled Stage 23 DWG 001, Rev P4, under reference 2101578, February 2023.

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.
- Scarifying, moisture conditioning and compacting the Subgrade.
- Assessment, remediation, and proof rolling of subgrade.
- Geotechnical compliance testing of the soils used for fill.
- 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.

Samples taken from the site stockpiles comprising local material used for fill were taken for geotechnical compliance testing during the works. The material compliance test results are summarised in **Table 4.1** 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			
S24DS-05759/1	100	100	99	95	84	43	38	16	22
S24DS-06831/1	100	100	99	98	91	52	46	14	32
S24DS-07117/1	100	100	97	93	86	50	45	15	30

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 material imported and placed at the site by Brown Property Group was assessed by the Superintendent as being derived from natural soils and meeting the classification of 'Fill Material' as defined in EPA publication 1828.2-2021 "Waste disposal categories – characteristics and thresholds". Environmental testing of the material was not within Chadwick Geotechnics' scope.

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

Photographs of typical materials used during construction are shown below.

Photograph 4.1: Photographs of the material used on site

Photograph 1: Typical clay material used on site

Photograph 2: Silty Sandy Clay used

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.

As per the specification requirements, the subgrade was scarified in the uppermost 150mm, moisture conditioned and compacted. Density and moisture testing of the subgrade was conducted, and the results met the specified requirements (further discussed in Section 4.5).

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

Photograph 4.2: Subgrade assessment photographs

Photograph 3: Subgrade assessed with pad foot roller

Photograph 4: Subgrade assessment using 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	CAT D6
Pad foot roller	BPG 15 T Pad Foot Roller
Water cart	Volvo 25 T
Dump Trucks	Volvo
Excavator	CAT 25 T

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

Photograph 4.3: General Earthwork machinery and fill construction photographs

Photograph 5: Dozer used during fill construction

Photograph 6: Excavator used during fill construction

Photograph 7: Compactor used during fill construction

Photograph 8: Water cart used during fill construction

4.5 Density and Moisture testing

Field density and moisture content testing was undertaken progressively during the subgrade assessment and the 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;

Fifty (50) tests were performed during the subgrade assessment and the filling process. Two (2) 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**. Two photographs of field density testing conducted on site are shown below.

Photograph 4.4: Field Density/Moisture Testing photographs

Photo 9: Field density/moisture test

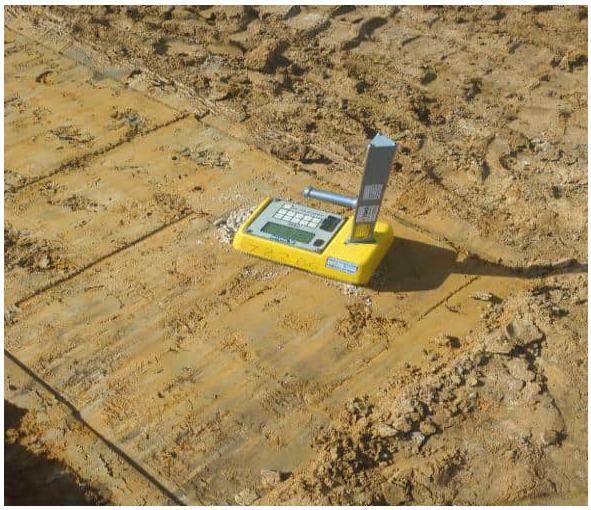

Photo 10: Field density/moisture test

5 Conclusion

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

- The materials, used by the earth-works contractor met the geotechnical property requirements of the specification.
- The sourced fill was, considered to be natural, clean, and suitable for use at the site.
- The fill material placed was tested at a suitable frequency in accordance with AS 3798-2007- Table 8.1 and the results indicate the compacted clay achieved the density requirement of the specification.
- Given the consistent construction practices followed by the earthworks contractor and as witnessed by the Chadwick Geotechnics, combined with the satisfactory verification of test results achieved, it is inferred that areas of the site between test locations were performed to the same standard as those areas that have been tested.
- Based on observations made by Chadwick Geotechnics Level 1 personal and the results of field and laboratory tests, we consider that the engineered fill within the site (noted in Section 2.5), as far as we have been able to reasonably determine, have been placed in general accordance with the intent of the specification.
- It is our opinion that the earthworks undertaken have been performed in accordance with the requirements of Section 8.2 – Level 1 Inspection and Testing - AS3798-2007 Guidelines on Earthworks for Commercial and Residential Developments.
- Chadwick Geotechnics completed its Inspection and testing services on, 9 October 2024. After this date, the maintenance of the fill is the sole responsibility of the Contractor. If the fill is not well maintained or protected with a sacrificial layer of topsoil or other fill, the uppermost layers and the exposed faces of the engineered fill may deteriorate as a result of exposure to varying weather conditions which can cause cracking or heaving of the fill.
- Any deterioration will need to be remediated prior to further construction on the site. Chadwick Geotechnics has not provided supervision since the above date and is not responsible for any subsequent deterioration that may have occurred or may occur since that date.

6 Applicability

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

This report is based on the nature of the project and the prevailing conditions between 3rd June 2024 and 9th October 2024. 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:

Michael DiMeglio

Project Director

Report reviewed by:

Robert McKenzie

Principal Geotechnical Engineer

PE0005222

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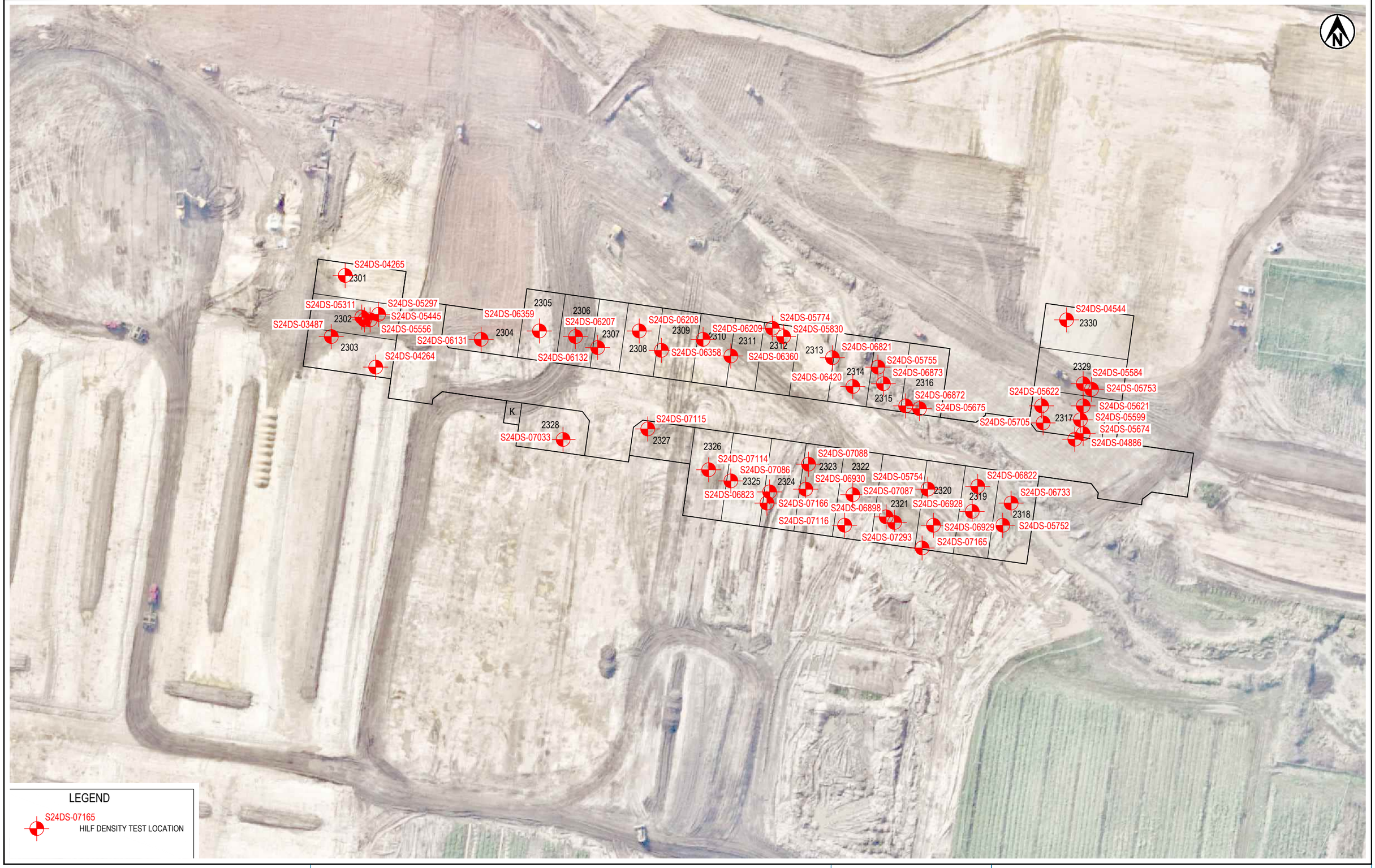
Appendix A Test Location Plan

T:\Dandenong\Geo Projects\1091938\WorkingMaterial\1091938.023 Riverfield Square Stage 23\CAD\FIG\1091938.023-F01.dwg 2025-Feb-24 2:46:57 PM Plotted By: KATHRYN JACKSON



LEGEND

S24DS-07165 HILF DENSITY TEST LOCATION

CHADWICK GEOTECHNICS
www.chadwickgeotechnics.com.au

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 04/08/2024.

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

ORIGINAL IN COLOUR

PROJECT No.	1091938.023	
DESIGNED	STPA	Oct.24
DRAWN	KMJA	Oct.24
CHECKED		
APPROVED		DATE

CLIENT GREENRIDGE PROPERTIES PTY LTD
PROJECT RIVERFIELD SQUARE ESTATE - STAGE 23
TITLE LEVEL ONE HILF DENSITY TESTING
HILF DENSITY TEST LOCATION PLAN

UNDER REVISION 1

SCALE (A3) 1:1250 FIG No. 1091938.023-F01 REV 1

Appendix B Hilf Density Test Summary

CHADWICK GEOTECHNICS

Riverfield Square Estate, 1091938.023 Stage 23

HILF Density Testing - Field Summary

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

Think Act Be Safe

Report No	Sample No	Date	Test Number	Lot No	Easting	Northing	Layer/RL	Density Ratio (≥95 %)	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W24DS00858	S24DS-03487	3/06/2024	1	2303 / 2	355040	5778492	21.484	96	3 wet	Pass	
HDR:W24DS01014	S24DS-04264	26/06/2024	1	2303 / 5	355056	5778481	22.18	99	0.5 dry	Pass	
HDR:W24DS01014	S24DS-04265	26/06/2024	2	2301 / 3	355045	5778514	21.208	103	0.5 dry	Pass	
HDR:W24DS01088	S24DS-04544	8/07/2024	1	2330 / 3	355305	5778498	19.167	97	1 wet	Pass	
HDR:W24DS01179	S24DS-04886	26/07/2024	1	2317 / 1	355308	5778455	18.05	101	2 wet	Pass	
HDR:W24DS01284	S24DS-05311	9/08/2024	1	2302 / 4	355051	5778499	21.296	100.5	2 wet	Pass	
HDR:W24DS01279	S24DS-05297	10/08/2024	1	2301 / -	355057	5778500	21.599	96	3 wet	Pass	
HDR:W24DS01308	S24DS-05445	13/08/2024	1	- / Final	355054	5778498	22.036	95.5	5 wet	Fail	See Retest S24DS-05556
HDR:W24DS01328	S24DS-05556	14/08/2024	1	2302 / -	355052	5778498	21.945	99	2 wet	Pass	Retest of S24DS-05445
DDR:W24DS01398	S24DS-05774	14/08/2024	1	2312	355199	5778495	19.198	92	4.5 Wet	Fail	See Retest S24DS-05830
HDR:W24DS01339	S24DS-05584	15/08/2024	1	2329 / -	355311	5778475	18.641	98	2 wet	Pass	
DDR:W24DS01344	S24DS-05599	15/08/2024	1	2317/3	355310	5778462	19.22	96.5	3.0 Wet	Pass	See Retest S24DS-05574
	S24DS-05574	16/08/2024								No test	This Hilf test S24DS-05574 was converted to a Maximum Dry Density Test due to Laboratory conditions. Refer to test number S24DS-05621. Test S24DS-05574 has not been reported it has been deleted due to NATA rules. Refer to test number S24DS-05621
HDR:W24DS01353	S24DS-05621	16/08/2024	1	2317 / 3	355311	5778467	19.198	97.5	2.5 wet	Pass	Retest of S24DS-05599
HDR:W24DS01353	S24DS-05622	16/08/2024	2	2317 / 4	355296	5778467	23.474	100	0.5 wet	Pass	
HDR:W24DS01363	S24DS-05674	19/08/2024	1	2317 / 0.5m to finish	355311	5778457	-	99	1.5 wet	Pass	
HDR:W24DS01363	S24DS-05675	19/08/2024	2	2316 / -	355252	5778466	17.792	97.5	2.5 wet	Pass	
HDR:W24DS01372	S24DS-05705	20/08/2024	1	2317 / 2	355228	5778459	18.481	102.5	1.5 dry	Pass	
HDR:W24DS01388	S24DS-05752	22/08/2024	2	2318 / 1	355282	5778424	17.401	99.5	0.5 wet	Pass	
HDR:W24DS01388	S24DS-05753	22/08/2024	3	2329 / -	355314	5778473	19.418	97.5	1.5 wet	Pass	
HDR:W24DS01388	S24DS-05754	22/08/2024	4	2320 / 2	355255	5778437	17.813	97.5	2 wet	Pass	
HDR:W24DS01388	S24DS-05755	22/08/2024	5	2315 / -	355237	5778481	18.436	98.5	0.5 wet	Pass	
HDR:W24DS01412	S24DS-05830	26/08/2024	1	2312 / 4	355203	5778492	19.134	99	2.5 wet	Pass	Retest of S24DS-05774
HDR:W24DS01471	S24DS-06131	2/09/2024	1	2304 / 1	355094	5778491	20.644	101.5	1 wet	Pass	
HDR:W24DS01471	S24DS-06132	2/09/2024	2	2307 / -	355136	5778488	19.91	102	0 wet	Pass	

CHADWICK GEOTECHNICS

Riverfield Square Estate, 1091938.023 Stage 23

HILF Density Testing - Field Summary

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

Think Act Be Safe

Report No	Sample No	Date	Test Number	Lot No	Easting	Northing	Layer/RL	Density Ratio (≥95 %)	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W24DS01491	S24DS-06207	4/09/2024	1	2306 / 2	355128	5778492	20.357	98	3 wet	Pass	
HDR:W24DS01491	S24DS-06208	4/09/2024	2	2308 / 2	355151	5778494	20.063	99	2.5 wet	Pass	
HDR:W24DS01491	S24DS-06209	4/09/2024	3	2310 / 2	355174	5778491	19.735	99	2.5 wet	Pass	
HDR:W24DS01519	S24DS-06358	6/09/2024	1	2309 / -	355159	5778487	20.076	98	3 wet	Pass	
HDR:W24DS01519	S24DS-06359	6/09/2024	2	2305 / -	355115	5778494	20.632	101.5	2 wet	Pass	
HDR:W24DS01519	S24DS-06360	6/09/2024	3	2311 / -	355184	5778485	19.849	97.5	0 dry	Pass	
HDR:W24DS01535	S24DS-06420	9/09/2024	1	2314 / 3	355228	5778474	17.841	98.5	2.5 wet	Pass	
HDR:W24DS01606	S24DS-06733	17/09/2024	1	2318 / -	355285	5778432	17.675	96.5	0.5 wet	Pass	
HDR:W24DS01633	S24DS-06821	19/09/2024	1	2314 / -	355227	5778484	18.547	96	0 dry	Pass	
HDR:W24DS01633	S24DS-06822	19/09/2024	2	2319 / -	355273	5778438	-	97.5	2 wet	Pass	
HDR:W24DS01633	S24DS-06823	19/09/2024	3	2324 / -	355198	5778436	18.943	100.5	0 wet	Pass	
HDR:W24DS01648	S24DS-06872	20/09/2024	1	2316 / -	355247	5778467	18.705	102	0.5 wet	Pass	
HDR:W24DS01648	S24DS-06873	20/09/2024	2	2315 / -	355239	5778475	18.989	100	2 wet	Pass	
HDR:W24DS01657	S24DS-06898	23/09/2024	1	2321 / 1	355240	5778427	17.994	99	2.5 wet	Pass	
HDR:W24DS01670	S24DS-06928	24/09/2024	1	2319 / 5	355271	5778429	19.359	101	0.5 wet	Pass	
HDR:W24DS01670	S24DS-06929	24/09/2024	2	2320 / 2	355257	5778424	18.5	101	0.5 wet	Pass	
HDR:W24DS01670	S24DS-06930	24/09/2024	3	2323 / 3	355211	5778437	18.769	101.5	0 dry	Pass	
HDR:W24DS01696	S24DS-07033	1/10/2024	1	2328 / 4	355179	5778430	21.872	96.5	2.5 wet	Pass	
HDR:W24DS01705	S24DS-07086	2/10/2024	1	2325 / 3	355184	5778440	20.842	98.5	2 wet	Pass	
HDR:W24DS01705	S24DS-07087	2/10/2024	2	2322 / 3	355228	5778435	18.859	98.5	2.5 wet	Pass	
HDR:W24DS01705	S24DS-07088	2/10/2024	3	2323 / 4	355212	5778446	19.15	97.5	1 wet	Pass	
HDR:W24DS01717	S24DS-07114	3/10/2024	1	2326 / 5	355176	5778444	19.568	98.5	0.5 wet	Pass	
HDR:W24DS01717	S24DS-07115	3/10/2024	2	2327 / 6	355159	5778485	19.928	99	2 wet	Pass	
HDR:W24DS01717	S24DS-07116	3/10/2024	3	2322 / 5	355225	5778424	19.432	101.5	0.5 dry	Pass	
HDR:W24DS01730	S24DS-07165	4/10/2024	1	2320 / FSL	355248	5778410	-	98.5	2 dry	Pass	
HDR:W24DS01730	S24DS-07166	4/10/2024	2	2324 / -	355197	5778432	-	98.5	0 dry	Pass	
HDR:W24DS01763	S24DS-07293	9/10/2024	1		355243	5778425	19.48	98	0 dry	Pass	

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:W24DS00858
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
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 (Discipline Manager - CMT)
Date of Issue: 7/06/2024

Sample Details

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

Sample Data

Sample ID	S24DS-03487					
Field Sample ID	1					
Date Tested	3/06/2024					
Time Tested	15:15					
E:	355040					
N:	5778492					
EL:	21.484					
Lot / Layer:	2303 / 2					

Field and Laboratory Data

Depth of Test (mm)	125					
Depth of Layer (mm)	150					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Field Moisture Content (%)	23.6					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	1.97					
Field Dry Density (t/m³)	1.59					
Peak Converted Wet Density (t/m³)	2.06					
Optimum Moisture Content (%)	20.5					
Compactive Effort	Standard					
Moisture Ratio (%)	114.0					
Moisture Variation (%)	3.0 wet					
Hilf Density Ratio (%)	**96.0**					

Comments

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:W24DS01014
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 12/07/2024

Sample Details

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

Sample Data

Sample ID	S24DS-04264	S24DS-04265				
Field Sample ID	1	2				
Date Tested	26/06/2024	26/06/2024				
Time Tested	11:00	11:45				
E:	355056	355045				
N:	5778481	5778514				
EL:	22.180	21.208				
Lot / Lift:	2303 / 5	2301 / 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 (%)	15.4	22.9				
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Density (t/m³)	2.07	2.01				
Field Dry Density (t/m³)	1.80	1.63				
Peak Converted Wet Density (t/m³)	2.09	1.95				
Optimum Moisture Content (%)	16.0	23.5				
Compactive Effort	Standard	Standard				
Moisture Ratio (%)	97.5	98.0				
Moisture Variation (%)	0.5 dry	0.5 dry				
Hilf Density Ratio (%)	**99.0**	**103.0**				

Comments

CHADWICK GEOTECHNICS

Dandenong South
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25 Metcalf Street
DANDENONG SOUTH, VIC 3175

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

Report No: HDR:W24DS01088
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: B. Taseski (Ravenhall Laboratory Manager)
Date of Issue: 12/07/2024

Sample Details

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

Sample Data

Sample ID	S24DS-04544					
Field Sample ID	1					
Date Tested	8/07/2024					
Time Tested	16:15					
E:	355305					
N:	5778498					
EL:	19.167					
Lot / Layer:	2330 / 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 (%)	16.3					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.05					
Field Dry Density (t/m³)	1.76					
Peak Converted Wet Density (t/m³)	2.11					
Optimum Moisture Content (%)	15.5					
Compactive Effort	Standard					
Moisture Ratio (%)	106.0					
Moisture Variation (%)	1.0 wet					
Hilf Density Ratio (%)	**97.0**					

Comments

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

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

Report No: HDR:W24DS01179
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 1/08/2024

Sample Details

Location:	Riverfield Square Estate, Stage 23
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	S24DS-04886		
Field Sample ID	1		
Date Tested	26/07/2024		
Time Tested	12:00		
E:	355308		
N:	5778455		
RL:	18.05		
Layer:	1		
Lot	2317		
Soil Description	Sandy CLAY		

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 (%)	16.4		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.12		
Field Dry Density (t/m³)	1.82		
Peak Converted Wet Density (t/m³)	2.09		
Optimum Moisture Content (%)	14.5		
Compactive Effort	Standard		
Moisture Ratio (%)	113.5		
Moisture Variation (%)	2.0 wet		
Hilf Density Ratio (%)	**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:W24DS01284
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 13/08/2024

Sample Details

Location:	Riverfield Square Estate, Stage 23, Clyde North
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95%
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	Clay

Sample Data

Sample ID	S24DS-05311		
Field Sample ID	1		
Date Tested	9/08/2024		
Time Tested	14:30		
E:	355051		
N:	5778499		
EL:	21.296		
Lot / Layer:	2302 / 4		
Soil Description	Clay		

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 (%)	18.6		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.10		
Field Dry Density (t/m³)	1.77		
Peak Converted Wet Density (t/m³)	2.09		
Optimum Moisture Content (%)	16.5		
Compactive Effort	Standard		
Moisture Ratio (%)	113.0		
Moisture Variation (%)	2.0 wet		
Hilf Density Ratio (%)	**100.5**		

Comments

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

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

Report No: HDR:W24DS01279
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 13/08/2024

Sample Details

Location:	Riverfield Square Estate, Stage 23, Clyde North
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95%
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	Sandy Clay

Sample Data

Sample ID	S24DS-05297		
Field Sample ID	1		
Date Tested	10/08/2024		
Time Tested	12:35		
E:	355057		
N:	5778500		
EL:	21.599		
Lot / Layer:	2301 / -		
Soil Description	Sandy Clay		

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 (%)	23.5		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.00		
Field Dry Density (t/m³)	1.62		
Peak Converted Wet Density (t/m³)	2.08		
Optimum Moisture Content (%)	20.5		
Compactive Effort	Standard		
Moisture Ratio (%)	115.5		
Moisture Variation (%)	3.0 wet		
Hilf Density Ratio (%)	**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:W24DS01308
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 4/03/2025

Sample Details

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

Sample Data

Sample ID	S24DS-05445		
Field Sample ID	1		
Date Tested	13/08/2024		
Time Tested	09:40		
E:	355054		
N:	5778498		
EL:	22.036		
Lot / Layer:	- / FSL		
Soil Description	Clay		

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 (%)	20.8		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.02		
Field Dry Density (t/m³)	1.67		
Peak Converted Wet Density (t/m³)	2.12		
Optimum Moisture Content (%)	16.0		
Compactive Effort	Standard		
Moisture Ratio (%)	131.0		
Moisture Variation (%)	5.0 wet		
Hilf Density Ratio (%)	**95.5**		

Comments

Moisture Variation of the test is outside the acceptable range of -4 to +6.

CHADWICK GEOTECHNICS

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

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

Report No: HDR:W24DS01328
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 16/08/2024

Sample Details

Location:	Riverfield Square Estate, Stage 23, Clyde North
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95%
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	Clay

Sample Data

Sample ID	S24DS-05556		
Field Sample ID	1		
Date Tested	14/08/2024		
Time Tested	15:00		
E:	3550252		
N:	5778498		
EL:	21.945		
Lot / Layer:	2302 / -		
	Retest of S24DS-05445		
Soil Description	Clay		

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 (%)	21.1		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.06		
Field Dry Density (t/m³)	1.70		
Peak Converted Wet Density (t/m³)	2.08		
Optimum Moisture Content (%)	19.0		
Compactive Effort	Standard		
Moisture Ratio (%)	110.5		
Moisture Variation (%)	2.0 wet		
Hilf Density Ratio (%)	**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: DDR:W24DS01398
Issue No: 1

Dry Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
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 (Discipline Manager - CMT)
Date of Issue: 9/09/2024

Sample Details

Location:
Client Request ID:
Specification Requirements: Minimum Hilf Density Ratio of 95%
Field Test Procedures: AS 1289.5.8.1
Laboratory Test Procedures: AS 1289.2.1.1, AS 1289.5.4.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Reserve Area
Material: Clay

Sample Data

Sample ID	S24DS-05774					
Field Sample ID	1					
Date Tested	24/08/2024					
Time Tested	11:20					
E:	355199					
N:	57784995					
EL:	19.198					
Lot / Layer:	2312 / 4					

Field and Laboratory Data

Sample ID	S24DS-05774					
Depth of Test (mm)	175					
Depth of Layer (mm)	200					
AS Sieve Size (mm)	19.0					
Oversize Wet (%)	0					
Oversize Dry (%)	0					
Field Moisture Content (%)	19.3					
Field Wet Density (t/m³)	1.98					
Field Dry Density (t/m³)	1.66					
Lab Result from Test No.	S24DS-05774					
Maximum Dry Density (t/m³)	1.80					
Optimum Moisture Content (%)	14.5					
Compactive Effort	Standard					
Moisture Ratio (%)	130.5					
Moisture Variation	4.5 wet					
Density Ratio (%)	**92.0**					
Compactive Effort	Standard					

Comments

CHADWICK GEOTECHNICS

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

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

Report No: HDR:W24DS01339
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 21/08/2024

Sample Details

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

Sample Data

Sample ID	S24DS-05584		
Field Sample ID	1		
Date Tested	15/08/2024		
Time Tested	14:20		
E:	355311		
N:	5778475		
EL:	18.641		
Lot / Layer:	2329 / -		
Soil Description	Clay		

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 (%)	20.6		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.99		
Field Dry Density (t/m³)	1.65		
Peak Converted Wet Density (t/m³)	2.03		
Optimum Moisture Content (%)	18.5		
Compactive Effort	Standard		
Moisture Ratio (%)	112.5		
Moisture Variation (%)	2.0 wet		
Hilf Density Ratio (%)	**98.0**		

Comments

CHADWICK GEOTECHNICS

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

Ph: + 61 3 8796 7900
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Report No: DDR:W24DS01344
Issue No: 1

Dry Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 21/08/2024

Sample Details

Location:	Clyde North
Client Request ID:	
Specification Requirements:	Minimum Dry Density Ratio of 95% Standard Compaction
Field Test Procedures:	AS 1289.5.8.1
Laboratory Test Procedures:	AS 1289.2.1.1, AS 1289.5.4.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	Clay

Sample Data

Sample ID	S24DS-05599		
Field Sample ID	1		
Date Tested	15/08/2024		
Time Tested	11:10		
E:	355310		
N:	5778462		
EL:	19.220		
Lot / Layer:	2317 / 3		
Soil Description	Clay		

Field and Laboratory Data

Sample ID	S24DS-05599		
Depth of Test (mm)	175		
Depth of Layer (mm)	200		
AS Sieve Size (mm)	19.0		
Oversize Wet (%)	0		
Oversize Dry (%)	0		
Field Moisture Content (%)	21.3		
Field Wet Density (t/m³)	2.01		
Field Dry Density (t/m³)	1.66		
Lab Result from Test No.	S24DS-05599		
Maximum Dry Density (t/m³)	1.72		
Optimum Moisture Content (%)	18.5		
Compactive Effort	Standard		
Moisture Ratio (%)	116.0		
Moisture Variation	3.0 wet		
Density Ratio (%)	**96.5**		
Compactive Effort	Standard		

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:W24DS01353
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 21/08/2024

Sample Details

Location:	Clyde North
Client Request ID:	
Specification Requirements:	Minimum Hilf Density Ratio of 95%
Field Test procedures:	AS 1289.5.8.1
Laboratory Test procedures:	AS 1289.2.1.1, AS 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.5.4
Source:	Onsite
Material:	Clay

Sample Data

Sample ID	S24DS-05621	S24DS-05622	
Field Sample ID	1	2	
Date Tested	16/08/2024	16/08/2024	
Time Tested	12:20	11:30	
E:	355311	355296	
N:	5778467	5778467	
EL:	-	23.474	
Lot / Layer:	2317 / 3	2317 / 4	
	Retest of S24DS-05574		
Soil Description	Clay	Clay	

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 (%)	20.4	19.6	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.06	2.05	
Field Dry Density (t/m³)	1.71	1.72	
Peak Converted Wet Density (t/m³)	2.11	2.05	
Optimum Moisture Content (%)	18.0	19.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	114.0	102.0	
Moisture Variation (%)	2.5 wet	0.5 wet	
Hilf Density Ratio (%)	**97.5**	**100.0**	

Comments

CHADWICK GEOTECHNICS

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

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

Report No: HDR:W24DS01363
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 21/08/2024

Sample Details

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

Sample Data

Sample ID	S24DS-05674	S24DS-05675	
Field Sample ID	1	2	
Date Tested	19/08/2024	19/08/2024	
Time Tested	13:25	15:14	
E:	355311	355252	
N:	5778457	5778466	
EL:	-	17.792	
Lot / Layer:	2317 / 0.5m to finish	2316 / -	

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 (%)	19.2	19.8	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.06	2.01	
Field Dry Density (t/m³)	1.73	1.68	
Peak Converted Wet Density (t/m³)	2.08	2.06	
Optimum Moisture Content (%)	17.5	17.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	108.5	114.5	
Moisture Variation (%)	1.5 wet	2.5 wet	
Hilf Density Ratio (%)	**99.0**	**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:W24DS01372
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 22/08/2024

Sample Details

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

Sample Data

Sample ID	S24DS-05705		
Field Sample ID	1		
Date Tested	20/08/2024		
Time Tested	11:20		
E:	355228		
N:	5778459		
EL:	18.481		
Lot / Layer:	2317 / 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 (%)	17.7		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.06		
Field Dry Density (t/m³)	1.75		
Peak Converted Wet Density (t/m³)	2.01		
Optimum Moisture Content (%)	19.0		
Compactive Effort	Standard		
Moisture Ratio (%)	92.0		
Moisture Variation (%)	1.5 dry		
Hilf Density Ratio (%)	**102.5**		

Comments

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Report No: HDR:W24DS01388
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

ilac-MRA NATA

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 2/09/2024

Sample Details

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

Sample Data

Sample ID	S24DS-05752	S24DS-05753	S24DS-05754	S24DS-05755
Field Sample ID	1	2	3	4
Date Tested	22/08/2024	22/08/2024	22/08/2024	22/08/2024
Time Tested	08:30	10:30	12:10	12:30
E:	355282	355314	355255	355237
N:	5778424	5778473	5778437	5778481
EL:	17.401	19.418	17.813	18.436
Lot / Layer:	2318 / 1	2329 / -	2320 / 2	2315 / -

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 (%)	19.1	18.6	18.9	18.6
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)	2.06	2.03	2.05	2.00
Field Dry Density (t/m³)	1.73	1.71	1.72	1.69
Peak Converted Wet Density (t/m³)	2.08	2.08	2.10	2.03
Optimum Moisture Content (%)	18.5	17.0	16.5	18.0
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	104.0	108.5	113.5	102.0
Moisture Variation (%)	0.5 wet	1.5 wet	2.0 wet	0.5 wet
Hilf Density Ratio (%)	**99.5**	**97.5**	**97.5**	**98.5**

Comments

CHADWICK GEOTECHNICS

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

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

Report No: HDR:W24DS01412
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 28/08/2024

Sample Details

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

Sample Data

Sample ID	S24DS-05830		
Field Sample ID	1		
Date Tested	26/08/2024		
Time Tested	15:20		
E:	355203		
N:	5778492		
EL:	19.134		
Lot / Layer:	2312 / 4		
	Retest of S24DS-05774		
Soil Description	Clay		

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)	2.02		
Field Dry Density (t/m³)	1.65		
Peak Converted Wet Density (t/m³)	2.05		
Optimum Moisture Content (%)	20.0		
Compactive Effort	Standard		
Moisture Ratio (%)	113.5		
Moisture Variation (%)	2.5 wet		
Hilf Density Ratio (%)	**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:W24DS01471
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 10/09/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06131	S24DS-06132	
Field Sample ID	1	2	
Date Tested	2/09/2024	2/09/2024	
Time Tested	14:45	15:40	
E:	355094	355136	
N:	5778491	5778488	
EL:	20.644	19.910	
Lot / Layer:	2304 / 1	2307 / 1	

Field and Laboratory Data

Depth of Test (mm)	175	175	
Depth of Layer (mm)	200	200	
AS Sieve Size (mm)	19.0	19.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	21.5	17.6	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.03	2.03	
Field Dry Density (t/m³)	1.67	1.72	
Peak Converted Wet Density (t/m³)	2.01	1.99	
Optimum Moisture Content (%)	20.5	17.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	104.0	100.0	
Moisture Variation (%)	1.0 wet	0.0	
Hilf Density Ratio (%)	**101.5**	**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:W24DS01491
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 11/09/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06207	S24DS-06208	S24DS-06209
Field Sample ID	1	2	3
Date Tested	4/09/2024	4/09/2024	4/09/2024
Time Tested	10:00	12:00	15:00
E:	355128	355151	355174
N:	5778492	5778494	5778491
EL:	20.357	20.063	19.735
Lot / Layer:	2306 / 2	2308 / 2	2310 / 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 (%)	17.5	17.6	23.1
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.05	2.10	2.01
Field Dry Density (t/m³)	1.74	1.78	1.63
Peak Converted Wet Density (t/m³)	2.09	2.12	2.03
Optimum Moisture Content (%)	14.5	15.0	20.5
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	119.5	116.0	113.0
Moisture Variation (%)	3.0 wet	2.5 wet	2.5 wet
Hilf Density Ratio (%)	**98.0**	**99.0**	**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:W24DS01519
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 11/09/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06358	S24DS-06359	S24DS-06360
Field Sample ID	1	2	3
Date Tested	6/09/2024	6/09/2024	6/09/2024
Time Tested	12:00	12:15	13:30
E:	355159	355115	355184
N:	5778487	5778494	5778485
EL:	20.076	20.632	19.849
Lot / Layer:	2309 / -	2305 / -	2311 / -

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 (%)	23.6	16.5	19.4
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.99	2.13	1.99
Field Dry Density (t/m³)	1.61	1.82	1.66
Peak Converted Wet Density (t/m³)	2.02	2.09	2.03
Optimum Moisture Content (%)	20.5	14.5	19.5
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	114.0	114.5	99.5
Moisture Variation (%)	3.0 wet	2.0 wet	0.0
Hilf Density Ratio (%)	**98.0**	**101.5**	**97.5**

Comments

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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:W24DS01535
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 17/09/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06420		
Field Sample ID	1		
Date Tested	9/09/2024		
Time Tested	15:00		
E:	355228		
N:	5778474		
EL:	17.841		
Lot / Layer:	2314 / 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 (%)	17.7		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.06		
Field Dry Density (t/m³)	1.75		
Peak Converted Wet Density (t/m³)	2.10		
Optimum Moisture Content (%)	15.0		
Compactive Effort	Standard		
Moisture Ratio (%)	117.5		
Moisture Variation (%)	2.5 wet		
Hilf Density Ratio (%)	**98.5**		

Comments

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

Ph: + 61 3 8796 7900
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Report No: HDR:W24DS01606
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 27/09/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06733		
Field Sample ID	1		
Date Tested	17/09/2024		
Time Tested	13:30		
E:	355285		
N:	5778432		
EL:	17.675		
Lot / Layer:	2318 / -		

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 (%)	17.6		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.03		
Field Dry Density (t/m³)	1.72		
Peak Converted Wet Density (t/m³)	2.10		
Optimum Moisture Content (%)	17.0		
Compactive Effort	Standard		
Moisture Ratio (%)	104.0		
Moisture Variation (%)	0.5 wet		
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
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Report No: HDR:W24DS01633
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 27/09/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06821	S24DS-06822	S24DS-06823
Field Sample ID	1	2	3
Date Tested	19/09/2024	19/09/2024	19/09/2024
Time Tested	09:20	13:20	13:40
E:	355227	355273	355198
N:	5778484	5778438	5778436
EL:	18.547	-	18.943
Lot / Layer:	2314 / -	2319 / -	2324 / -
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 (%)	14.6	18.0	20.3
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.01	2.04	2.05
Field Dry Density (t/m³)	1.75	1.73	1.71
Peak Converted Wet Density (t/m³)	2.09	2.10	2.05
Optimum Moisture Content (%)	14.5	16.0	20.0
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	100.0	114.5	101.0
Moisture Variation (%)	0.0	2.0 wet	0.0
Hilf Density Ratio (%)	**96.0**	**97.5**	**100.5**

Comments

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

Ph: + 61 3 8796 7900
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Report No: HDR:W24DS01648
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 1/10/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06872	S24DS-06873	
Field Sample ID	1	2	
Date Tested	20/09/2024	20/09/2024	
Time Tested	08:10	10:20	
E:	355247	355239	
N:	5778467	5778475	
EL:	18.705	18.989	
Lot / Layer:	2316 / -	2315 / -	

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 (%)	17.5	19.9	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.07	2.07	
Field Dry Density (t/m³)	1.76	1.73	
Peak Converted Wet Density (t/m³)	2.03	2.07	
Optimum Moisture Content (%)	17.0	18.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	103.5	111.5	
Moisture Variation (%)	0.5 wet	2.0 wet	
Hilf Density Ratio (%)	**102.0**	**100.0**	

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:W24DS01657
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 1/10/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06898		
Field Sample ID	1		
Date Tested	23/09/2024		
Time Tested	13:18		
E:	0355240		
N:	5778427		
EL:	17.994		
Lot / Layer:	2321 / 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 (%)	17.4		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.08		
Field Dry Density (t/m³)	1.77		
Peak Converted Wet Density (t/m³)	2.10		
Optimum Moisture Content (%)	15.0		
Compactive Effort	Standard		
Moisture Ratio (%)	116.0		
Moisture Variation (%)	2.5 wet		
Hilf Density Ratio (%)	**99.0**		

Comments

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ACN 143 009 330
25 Metcalf Street
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Ph: + 61 3 8796 7900
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Report No: HDR:W24DS01670
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 1/10/2024

Sample Details

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

Sample Data

Sample ID	S24DS-06928	S24DS-06929	S24DS-06930
Field Sample ID	1	2	3
Date Tested	24/09/2024	24/09/2024	24/09/2024
Time Tested	12:15	12:43	15:20
E:	0355271	0355257	0355211
N:	5778429	5778424	5778437
EL:	19.359	18.50	18.769
Lot / Layer:	2319 / 5	2320 / 2	2323 / 3

Field and Laboratory Data

Depth of Test (mm)	175	175	175
Depth of Layer (mm)	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0
Oversize Wet (%)	0	0	0
Field Moisture Content (%)	19.4	20.8	15.9
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.07	2.07	2.12
Field Dry Density (t/m³)	1.74	1.72	1.83
Peak Converted Wet Density (t/m³)	2.06	2.05	2.08
Optimum Moisture Content (%)	19.0	20.0	16.0
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	102.5	103.5	98.5
Moisture Variation (%)	0.5 wet	0.5 wet	0.0
Hilf Density Ratio (%)	**101.0**	**101.0**	**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:W24DS01696
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 3/10/2024

Sample Details

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

Sample Data

Sample ID	S24DS-07033		
Field Sample ID	1		
Date Tested	1/10/2024		
Time Tested	14:30		
E:	355079		
N:	5778430		
EL:	21.872		
Lot / Layer:	2403 / 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 Moisture Content (%)	17.2		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.06		
Field Dry Density (t/m³)	1.75		
Peak Converted Wet Density (t/m³)	2.13		
Optimum Moisture Content (%)	15.0		
Compactive Effort	Standard		
Moisture Ratio (%)	115.5		
Moisture Variation (%)	2.5 wet		
Hilf Density Ratio (%)	**96.5**		

Comments

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:W24DS01705
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 8/10/2024

Sample Details

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

Sample Data

Sample ID	S24DS-07086	S24DS-07087	S24DS-07088
Field Sample ID	1	2	3
Date Tested	2/10/2024	2/10/2024	2/10/2024
Time Tested	09:15	11:30	15:20
E:	355184	355228	355212
N:	5778440	5778435	5778446
EL:	20.842	18.859	19.150
Lot / Layer:	2325 / 3	2322 / 3	2323 / 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	21.1	19.6
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.06	2.03	2.02
Field Dry Density (t/m³)	1.73	1.67	1.69
Peak Converted Wet Density (t/m³)	2.09	2.05	2.07
Optimum Moisture Content (%)	16.5	18.5	18.5
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	112.5	113.0	105.0
Moisture Variation (%)	2.0 wet	2.5 wet	1.0 wet
Hilf Density Ratio (%)	**98.5**	**98.5**	**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:W24DS01717
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 8/10/2024

Sample Details

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

Sample Data

Sample ID	S24DS-07114	S24DS-07115	S24DS-07116
Field Sample ID	1	2	3
Date Tested	3/10/2024	3/10/2024	3/10/2024
Time Tested	10:50	14:30	15:30
E:	355176	355159	355225
N:	5778444	5778485	5778424
EL:	19.568	19.928	19.432
Lot / Layer:	2326 / 5	2327 / 6	2322 / 5

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 (%)	15.5	22.5	15.8
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	2.01	2.10
Field Dry Density (t/m³)	1.81	1.64	1.82
Peak Converted Wet Density (t/m³)	2.12	2.03	2.07
Optimum Moisture Content (%)	15.0	20.5	16.0
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	102.0	109.5	98.0
Moisture Variation (%)	0.5 wet	2.0 wet	0.5 dry
Hilf Density Ratio (%)	**98.5**	**99.0**	**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:W24DS01730
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 11/10/2024

Sample Details

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

Sample Data

Sample ID	S24DS-07165	S24DS-07166	
Field Sample ID	1	2	
Date Tested	4/10/2024	4/10/2024	
Time Tested	11:30	13:10	
E:	355148	355197	
N:	5778410	5778432	
EL:	FSL	FSL	
Lot	2320	2324	

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 (%)	15.3	15.5	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.01	2.05	
Field Dry Density (t/m³)	1.75	1.77	
Peak Converted Wet Density (t/m³)	2.04	2.08	
Optimum Moisture Content (%)	17.0	15.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	89.0	99.0	
Moisture Variation (%)	2.0 dry	0.0	
Hilf Density Ratio (%)	**98.5**	**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:W24DS01763
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 11/10/2024

Sample Details

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

Sample Data

Sample ID	S24DS-07293		
Field Sample ID	1		
Date Tested	9/10/2024		
Time Tested	08:15		
E:	355243		
N:	5778425		
EL:	19.480		
Lot / Layer:	2321 / FSL		

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 (%)	14.2		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.04		
Field Dry Density (t/m³)	1.79		
Peak Converted Wet Density (t/m³)	2.08		
Optimum Moisture Content (%)	14.5		
Compactive Effort	Standard		
Moisture Ratio (%)	99.0		
Moisture Variation (%)	0.0		
Hilf Density Ratio (%)	**98.0**		

Comments

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:S24DS-05759/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 17/09/2024

Sample Details

Sample Location	E: 355255, N: 5778437, E:" 17.813, Lot: 2320, Layer: 2
Field Sample ID	1
Date Sampled	22/08/2024
Time Sampled	12:30
Source	Onsite
Material	Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S24DS-05759

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	15.9	
Date Tested		26/08/2024	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	11.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		Yes	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	38	
Plastic Limit (%)	AS 1289.3.2.1	16	
Plasticity Index (%)	AS 1289.3.3.1	22	
Date Tested		30/08/2024	

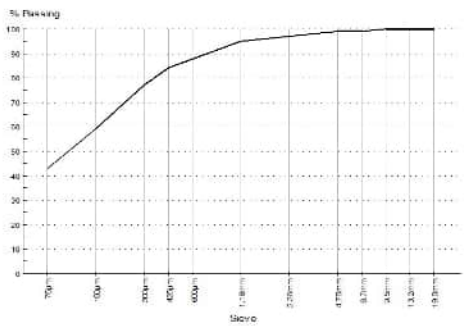
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 27/08/2024

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	100	
6.7mm	99	
4.75mm	99	
2.36mm	97	
1.18mm	95	
600µm	88	
425µm	84	
300µm	77	
150µm	59	
75µm	43	

Chart



Comments

N/A

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:S24DS-06831/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 11/10/2024

Sample Details

Sample Location	E: 355198, N: 5778436, EL: 18.943, Lot: 2324
Field Sample ID	1
Date Sampled	19/09/2024
Time Sampled	13:40
Source	Onsite
Material	sandy CLAY
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S24DS-06831

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	18.1	
Date Tested		1/01/1900	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	14.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		Yes	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	46	
Plastic Limit (%)	AS 1289.3.2.1	14	
Plasticity Index (%)	AS 1289.3.3.1	32	
Date Tested		30/09/2024	

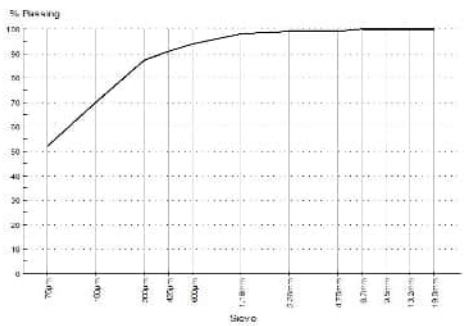
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 30/09/2024

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	100	
6.7mm	100	
4.75mm	99	
2.36mm	99	
1.18mm	98	
600µm	94	
425µm	91	
300µm	87	
150µm	70	
75µm	52	

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:S24DS-07117/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 23
Project No.: 1091938.023
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025 – Testing

Accreditation Number: 12719
Site Number: 12712
Approved Signatory: Krushik Patel (Senior Geotechnician)
Date of Issue: 15/10/2024

Sample Details

Sample Location	E: 355159, N: 5778485, EL: 19.928, Lot: 23278, Lift: 6
Field Sample ID	1
Date Sampled	3/10/2024
Time Sampled	14:30
Source	Onsite
Material	Sandy CLAY
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S24DS-07117

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	17.1	
Date Tested		8/10/2024	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	14.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		Yes	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	45	
Plastic Limit (%)	AS 1289.3.2.1	15	
Plasticity Index (%)	AS 1289.3.3.1	30	
Date Tested		11/10/2024	

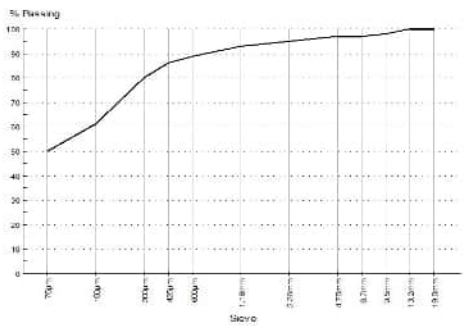
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 11/10/2024

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	98	
6.7mm	97	
4.75mm	97	
2.36mm	95	
1.18mm	93	
600µm	89	
425µm	86	
300µm	80	
150µm	61	
75µm	50	

Chart



Comments

N/A

Appendix D Controlled Fill Certificate

CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : Riverfield Square Estate Stage 23
Lots 2301 to 2330

Chadwick Geotechnics REF: 1091938.023v1

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

DATE: 3 March 2025

SUMMARY

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

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

LIMITATIONS

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

This report is based on the conditions present and factors affecting the soil at the time of inspection (3 June 2024 and was completed on 9 October 2024). No responsibility or liability will be accepted and Chadwick Geotechnics Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions since the site testing.

CHADWICK GEOTECHNICS PTY LTD

Robert Barden
Project Manager

Michael DiMeglio
Project Director

CHADWICK
GEOTECHNICS