CHADWICK GEOTECHNICS

REPORT

Level 1 Geotechnical Inspection and Testing Authority Services

Riverfield Square Estate Stage 30
Lot's 3001 to 3030

Prepared for:

Greenridge Properties Pty Ltd

10 June 2025

Our Ref: 1091938.030.R1.v2

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**
23 May 2025	V1	Final	RHB	RWMc	MCDM
10 June 2025	V2	Final V2	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 30 of the Riverfield Square Estate in Clyde North between 19 February 2025 and 27 May 2025.

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 30 is located to the West of Timberwolf Drive and South of Viridian Boulevard.

The included works area is shown on the Site Plan in Appendix A and within Figure 2.1 below is an extract from Nearmap.

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
February 2025	19. 20, 21, 24, 25, 26, 27, 28,
March 2025	3, 4, 5, 20, 25, 26, 27,
April 2025	1, 2,
May 2025	27,

2.4 Included Areas

This report is applicable to material placed by the contractor on the residential lots within Riverfield Square Estate Stage 30, as shown on **Figure 2.1** and on the Site Plan in **Appendix A,** 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's 3001 to 3030

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

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.

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.
- Placement and compaction of engineered fill.

4.2 Fill material

Material used for the construction of the fill comprised of local gravelly and sandy 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 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			
S25DS-01118	100	100	96	92	87	67	45	21	24
S25DS-01257	100	98	93	90	85	59	42	16	26
S25DS-02053	100	100	99	95	88	80	55	21	34

The laboratory test results indicated material is clay of medium to high plasticity and satisfied the requirements of the Specification.

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

The 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: 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 natural grasses and topsoil that was present on site.

The subgrade inspection was 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.

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

Photograph 4.2: Subgrade assessment photographs

Photograph 3: Subgrade assessed with dump truck

Photograph 4: Subgrade assessment using loaded water cart

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, Vibrating Pad Foot Roller
Water cart	Volvo 25 T and road going truck
Dump Trucks	Volvo A256
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: Pad foot used during fill construction

Photograph 7: Water cart during fill construction

Photograph 8: Moxy trucks used during fill construction

4.5 Density and Moisture testing

Field density and moisture content testing was undertaken progressively during 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;

Forty (40) tests were performed during the filling process. Four (4) 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, 2 April 2025. 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 19 February 2025 and 27 May 2025. No responsibility or liability will be accepted, and Chadwick Geotechnics is indemnified to the full extent permitted by law in respect of the use of this report where there has been a change in the nature of the project or the conditions on site that may alter or affect the conclusions of this report.

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

Chadwick Geotechnics Pty Ltd

Report prepared by:

.....

Robert Barden

Project Manager

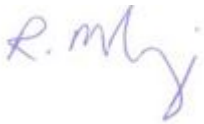
Authorised for Chadwick Geotechnics Pty Ltd by:

.....

Michael DiMeglio

Project Director

Report reviewed by:



.....

Robert McKenzie

Principal Geotechnical Engineer

PE0005222

p:\1091938\workingmaterial\1091938.030 riverfield square stage 30\level 1 report\one additional test on lot 3008\1091938.030.r1.v2 riverfield square stage 30.docx

Appendix A Test Location Plan

T:\Dandenong\Geo Projects\1091938\WorkingMaterial\1091938.030 Riverfield Square Stage 30\CAD\FIG\1091938.030-F1.dwg 2025-May-29 12:12:46 PM Plotted By: KATHRYN JACKSON

CHADWICK GEOTECHNICS
www.chadwickgeotechnics.com.au

NOTES:
1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD IMAGERY DATE: 04/03/2025.

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

ORIGINAL IN COLOUR

PROJECT No.	1091938.030	
DESIGNED	STPA	May.25
DRAWN	KMJA	May.25
CHECKED	RHB	May.25
	R. BARDEN	20.05.2025
	APPROVED	DATE

CLIENT **GREENRIDGE PROPERTIES PTY LTD**
PROJECT **RIVERFIELD ESTATE - STAGE 30**
TITLE LEVEL ONE HILF DENSITY TESTING
HILF DENSITY TEST LOCATION PLAN
SCALE (A3) 1:750 FIG No. 1091938.030-F01 REV 1

Appendix B Hilf Density Test Summary

CHADWICK GEOTECHNICS

Riverfield Square Estate, 1091938.030 Stage 30

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:W25DS00274	S25DS-00830	19/02/2025	1	3029 / 1	355230	5778088	20.355	102.5	3 dry	Pass	
HDR:W25DS00295	S25DS-00980	20/02/2025	1	3025 / 1	355186	5778094	19.848	103.5	3.5 dry	Fail	See Retest S25DS-01091
HDR:W25DS00295	S25DS-00981	20/02/2025	2	3026 / 2	355166	5778097	20.052	102	4 dry	Fail	See Retest S25DS-01090
HDR:W25DS00308	S25DS-01021	21/02/2025	1	3024 / 1	355146	5778089	19.579	94	0.5 dry	Fail	See Retest S25DS-01207
HDR:W25DS00308	S25DS-01022	21/02/2025	2	3027 / 2	355188	5778080	19.923	102.5	3 dry	Pass	
HDR:W25DS00322	S25DS-01090	24/02/2025	1	3025 / 2	355161	5778094	20.023	99.5	2.5 dry	Pass	Retest of S25DS-00981
HDR:W25DS00322	S25DS-01091	24/02/2025	2	3026 / 1	355186	5778094	19.848	100.5	0.5 dry	Pass	Retest of S25DS-00980
HDR:W25DS00322	S25DS-01092	24/02/2025	3	3023 / 3	355134	5778087	20.115	100.5	2.5 dry	Pass	
HDR:W25DS00322	S25DS-01093	24/02/2025	4	3027 / 4	355195	5778077	20.58	96.5	2.5 dry	Pass	
HDR:W25DS00327	S25DS-01117	25/02/2025	1	3022 / -	355123	5778058	18.644	105.5	2.5 dry	Pass	
HDR:W25DS00345	S25DS-01205	26/02/2025	1	3030 / 5	355239	5778080	20.574	97.5	2.5 dry	Pass	
HDR:W25DS00345	S25DS-01206	26/02/2025	2	3022 / -	355127	5778059	19.185	93.5	0 wet	Fail	See Retest S25DS-01253
HDR:W25DS00345	S25DS-01207	26/02/2025	3	2024 / -	355150	5778100	20.023	100.5	2.5 dry	Pass	Retest of S25DS-01021
HDR:W25DS00345	S25DS-01208	26/02/2025	4	3026 / 6	355209	5778090	20.704	101	1.5 dry	Pass	
HDR:W25DS00345	S25DS-01209	26/02/2025	5	3024 / 6	355151	5778096	20.531	101.5	2 dry	Pass	
HDR:W25DS00364	S25DS-01253	27/02/2025	1	3022 / -	355125	5778059	19.201	97	2.5 dry	Pass	Retest of S25DS-01206
HDR:W25DS00364	S25DS-01254	27/02/2025	2	3009 / 1	355131	5778020	18.815	98.5	2 dry	Pass	
HDR:W25DS00364	S25DS-01255	27/02/2025	3	3029 / -	355224	5778081	20.793	100	2 dry	Pass	
HDR:W25DS00364	S25DS-01256	27/02/2025	4	3021 / 1	355142	5778066	19.324	100.5	2 dry	Pass	
HDR:W25DS00375	S25DS-01290	28/02/2025	1	3011 / 2	355157	5778022	18.024	95.5	0 wet	Pass	
HDR:W25DS00375	S25DS-01291	28/02/2025	2	3014 / 1	355192	5778009	18.821	102	2.5 dry	Pass	

CHADWICK GEOTECHNICS

Riverfield Square Estate, 1091938.030 Stage 30

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:W25DS00387	S25DS-01345	3/03/2025	1	3020 / 2	355160	5778060	19.456	96.5	2.5 dry	Pass	
HDR:W25DS00387	S25DS-01346	3/03/2025	2	3004 / 1	355084.926	5778071.511	19.406	100	3 dry	Pass	
HDR:W25DS00387	S25DS-01347	3/03/2025	3	3010 / 3	355143.776	5778022.664	19.249	96	2 dry	Pass	
HDR:W25DS00401	S25DS-01409	4/03/2025	4	3007 / 1	355101	5778022	19.23	96.5	2.5 dry	Pass	
HDR:W25DS00401	S25DS-01410	4/03/2025	5	3006 / 2	355089	5778038	19.562	98.5	2.5 dry	Pass	
HDR:W25DS00418	S25DS-01474	5/03/2025	1	3005 / -	355089	5778056	19.856	101.5	2.5 dry	Pass	
HDR:W25DS00526	S25DS-01944	20/03/2025	1	3012 / 3	355168	5778020	19.591	98	2.5 dry	Pass	
HDR:W25DS00550	S25DS-02050	25/03/2025	1	3013 / 4	355179	5778015	19.805	96.5	0 wet	Pass	
HDR:W25DS00550	S25DS-02051	25/03/2025	2	3015 / 4	355205	5778018	19.634	99	0 dry	Pass	
HDR:W25DS00561	S25DS-02073	26/03/2025	1	3002 / 4	355094	5778098	20.203	98	0.5 wet	Pass	
HDR:W25DS00579	S25DS-02128	27/03/2025	1	3001 / 5	355097	5778110	20.517	97	0 dry	Pass	
HDR:W25DS00579	S25DS-02129	27/03/2025	2	3003 / 5	355095	5778082	20.417	98.5	0 wet	Pass	
HDR:W25DS00579	S25DS-02130	27/03/2025	3	3017 / 3	355194	5778063	19.768	99	2 wet	Pass	
HDR:W25DS00579	S25DS-02131	27/03/2025	4	3026 / -	355173	5778098	20.862	101.5	0.5 dry	Pass	
HDR:W25DS00579	S25DS-02132	27/03/2025	5	3019 / -	355169	5778064	19.763	97.5	2.5 wet	Pass	
HDR:W25DS00622	S25DS-02335	1/04/2025	1	3016 / Final	355211	5778059	19.966	98	3 wet	Pass	
HDR:W25DS00622	S25DS-02336	1/04/2025	2	3018 / Final	355182	5778064	20.001	103	0.5 wet	Pass	
HDR:W25DS00637	S25DS-02414	2/04/2025	1	3029 / -	355224	5778094	21.003	99.5	0 wet	Pass	
HDR:W25DS01100	S25DS-04211	27/05/2025	1	3008 / final	355118	5778028	20.13	104.5	2.5 Dry	Pass	
											no further testing

Appendix C NATA endorsed 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:W25DS00274
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 13/03/2025

Sample Details

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

Sample Data

Sample ID	S25DS-00830		
Field Sample ID	1		
Date Tested	19/02/2025		
Time Tested	15:00		
E:	355230		
N:	5778088		
EL:	20.355		
Lot / Layer:	3029 / 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 (%)	24.7		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.90		
Field Dry Density (t/m³)	1.52		
Peak Converted Wet Density (t/m³)	1.85		
Optimum Moisture Content (%)	28.0		
Compactive Effort	Standard		
Moisture Ratio (%)	89.0		
Moisture Variation (%)	3.0 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:W25DS00295
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 13/03/2025

Sample Details

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

Sample Data

Sample ID	S25DS-00980	S25DS-00981	
Field Sample ID	1	2	
Date Tested	20/02/2025	20/02/2025	
Time Tested	10:45	15:00	
E:	355186	355166	
N:	5778094	5778097	
EL:	19.848	20.052	
Lot / Layer:	3025 / 1	3026 / 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 (%)	23.6	12.6	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.89	2.06	
Field Dry Density (t/m³)	1.53	1.83	
Peak Converted Wet Density (t/m³)	1.82	2.01	
Optimum Moisture Content (%)	27.0	16.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	87.5	75.5	
Moisture Variation (%)	3.5 dry	4.0 dry	
Hilf Density Ratio (%)	**103.5**	**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:W25DS00308
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 12/03/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01021	S25DS-01022	
Field Sample ID	1	2	
Date Tested	21/02/2025	21/02/2025	
Time Tested	10:10	15:15	
E:	355146	355188	
N:	5778089	5778080	
EL:	19.579	19.923	
Lot / Layer:	3024 / 1	3027 / 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 (%)	11.5	49.7	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	2.08	1.87	
Field Dry Density (t/m³)	1.86	1.25	
Peak Converted Wet Density (t/m³)	2.20	1.82	
Optimum Moisture Content (%)	12.0	53.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	96.5	93.0	
Moisture Variation (%)	0.5 dry	3.0 dry	
Hilf Density Ratio (%)	**94.0**	**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:W25DS00322
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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
(Base Laboratory Manager -
Date of Issue: 21/05/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01090	S25DS-01091	S25DS-01092	S25DS-01093
Field Sample ID	1	2	3	4
Date Tested	24/02/2025	24/02/2025	24/02/2025	24/02/2025
Time Tested	08:15	08:25	08:35	12:30
E:	355161	355186	355134	355195
N:	5778094	5778094	5778087	5778077
EL:	20.023	19.848	20.115	20.580
Lot / Layer:	3025 / 2	3026 / 1	3023 / 3	3027 / 4
	Retest of S25DS-00981	Retest of S25DS-00980		
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 (%)	12.6	14.8	10.4	10.3
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	2.05	2.05	1.97
Field Dry Density (t/m³)	1.81	1.78	1.85	1.79
Peak Converted Wet Density (t/m³)	2.05	2.04	2.03	2.04
Optimum Moisture Content (%)	15.0	15.5	13.0	13.0
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	83.5	96.0	80.5	79.5
Moisture Variation (%)	2.5 dry	0.5 dry	2.5 dry	2.5 dry
Hilf Density Ratio (%)	**99.5**	**100.5**	**100.5**	**96.5**

Comments

Results relate only to the items tested/sampled.

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:W25DS00327
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 12/03/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01117		
Field Sample ID	1		
Date Tested	25/02/2025		
Time Tested	13:10		
E:	355123		
N:	5778058		
EL:	18.644		
Lot / Layer:	3022 / -		

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 (%)	26.6		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.95		
Field Dry Density (t/m³)	1.54		
Peak Converted Wet Density (t/m³)	1.84		
Optimum Moisture Content (%)	29.5		
Compactive Effort	Standard		
Moisture Ratio (%)	90.5		
Moisture Variation (%)	2.5 dry		
Hilf Density Ratio (%)	**105.5**		

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:W25DS00345
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 12/03/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01205	S25DS-01206	S25DS-01207	S25DS-01208	S25DS-01209
Field Sample ID	1	2	3	4	5
Date Tested	26/02/2025	26/02/2025	26/02/2025	26/02/2025	26/02/2025
Time Tested	08:20	08:40	08:20	13:15	13:30
E:	355239	355127	355150	355209	355151
N:	5778080	5778059	57781090	5778090	5778096
EL:	20.574	19.185	20.023	20.704	20.531
Lot / Layer:	3030 / 5	3022 / -	2024 / -	3026 / 6	3024 / 6
			Retest of S25DS-01021		
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 (%)	10.5	19.0	13.2	13.7	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)	1.99	1.96	2.04	2.07	2.04
Field Dry Density (t/m³)	1.80	1.65	1.80	1.82	1.80
Peak Converted Wet Density (t/m³)	2.04	2.04	2.03	2.05	2.01
Optimum Moisture Content (%)	13.0	19.0	15.5	15.0	15.5
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	81.0	101.0	84.5	90.0	86.0
Moisture Variation (%)	2.5 dry	0.0	2.5 dry	1.5 dry	2.0 dry
Hilf Density Ratio (%)	**97.5**	**96.5**	**100.5**	**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:W25DS00364
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 20/03/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01253	S25DS-01254	S25DS-01255	S25DS-01256
Field Sample ID	1	2	3	4
Date Tested	27/02/2025	27/02/2025	27/02/2025	27/02/2025
Time Tested	11:15	12:10	15:25	15:45
E:	355125	355131	355224	355142
N:	5778059	5778020	5778081	5778066
EL:	19.201	18.815	20.793	19.324
Lot / Layer:	3022 / -	3009 / 1	3029 / -	3021 / 1
	Retest of S25DS-01206			

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 (%)	11.2	15.1	11.8	16.5
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.00	2.02	2.06	2.03
Field Dry Density (t/m³)	1.80	1.76	1.84	1.74
Peak Converted Wet Density (t/m³)	2.06	2.05	2.06	2.01
Optimum Moisture Content (%)	13.5	17.0	14.0	19.0
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	82.5	88.5	84.5	88.0
Moisture Variation (%)	2.5 dry	2.0 dry	2.0 dry	2.0 dry
Hilf Density Ratio (%)	**97.0**	**98.5**	**100.0**	**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:W25DS00375
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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
(Base Laboratory Manager -
Date of Issue: 21/05/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01290	S25DS-01291	
Field Sample ID	1	2	
Date Tested	28/02/2025	28/02/2025	
Time Tested	11:20	14:30	
E:	355157	355192	
N:	5778022	5778009	
EL:	18.024	18.821	
Lot / Layer:	3011 / 2	3014 / 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 (%)	17.6	16.6	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.98	1.98	
Field Dry Density (t/m³)	1.68	1.70	
Peak Converted Wet Density (t/m³)	2.07	1.94	
Optimum Moisture Content (%)	17.5	19.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	100.5	86.5	
Moisture Variation (%)	0.0	2.5 dry	
Hilf Density Ratio (%)	**95.5**	**102.0**	

Comments

Results relate only to the items tested/sampled.

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:W25DS00387
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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
(Base Laboratory Manager -
Date of Issue: 21/05/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01345	S25DS-01346	S25DS-01347
Field Sample ID	1	2	3
Date Tested	3/03/2025	3/03/2025	3/03/2025
Time Tested	10:10	13:00	15:15
E:	355160	355085	355144
N:	5778060	5778072	5778023
EL:	19.456	19.406	19.249
Lot / Layer:	3020 / 2	3004 / 1	3010 / 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 (%)	11.5	16.2	15.5
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	2.03	1.91	1.95
Field Dry Density (t/m³)	1.82	1.65	1.69
Peak Converted Wet Density (t/m³)	2.10	1.91	2.03
Optimum Moisture Content (%)	14.0	19.5	17.5
Compactive Effort	Standard	Standard	Standard
Moisture Ratio (%)	81.5	83.5	87.5
Moisture Variation (%)	2.5 dry	3.0 dry	2.0 dry
Hilf Density Ratio (%)	**96.5**	**100.0**	**96.0**

Comments

Results relate only to the items tested/sampled.

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:W25DS00401
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 20/03/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01409	S25DS-01410	
Field Sample ID	1	2	
Date Tested	4/03/2025	4/03/2025	
Time Tested	08:30	14:00	
E:	355101	355089	
N:	5778022	5778038	
EL:	19.232	19.562	
Lot / Layer:	3007 / 1	3006 / 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 (%)	13.5	9.2	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.97	2.04	
Field Dry Density (t/m³)	1.73	1.87	
Peak Converted Wet Density (t/m³)	2.04	2.08	
Optimum Moisture Content (%)	16.0	11.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	85.5	80.5	
Moisture Variation (%)	2.5 dry	2.5 dry	
Hilf Density Ratio (%)	**96.5**	**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:W25DS00418
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 20/03/2025

Sample Details

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

Sample Data

Sample ID	S25DS-01474		
Field Sample ID	1		
Date Tested	5/03/2025		
E:	355089		
N:	5778056		
EL:	19.856		
Lot / Layer:	3005 / -		

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 (%)	18.3		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	2.00		
Field Dry Density (t/m³)	1.69		
Peak Converted Wet Density (t/m³)	1.98		
Optimum Moisture Content (%)	21.0		
Compactive Effort	Standard		
Moisture Ratio (%)	88.0		
Moisture Variation (%)	2.5 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:W25DS00526
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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
(Base Laboratory Manager -
Date of Issue: 21/05/2025

Sample Details

Location:	Clyde
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 1289.5.7.1
Sampling Method:	AS1289.1.2.1 Clause 6.4 (b)
Source:	Onsite
Material:	Clay

Sample Data

Sample ID	S25DS-01944		
Field Sample ID	1		
Date Tested	20/03/2025		
Time Tested	09:00		
E:	355168		
N:	5778020		
EL:	19.591		
Lot / Layer:	3012 / 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 (%)	16.9		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.95		
Field Dry Density (t/m³)	1.66		
Peak Converted Wet Density (t/m³)	1.99		
Optimum Moisture Content (%)	19.5		
Compactive Effort	Standard		
Moisture Ratio (%)	86.5		
Moisture Variation (%)	2.5 dry		
Hilf Density Ratio (%)	**98.0**		

Comments

Results relate only to the items tested/sampled.

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:W25DS00550
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 2/04/2025

Sample Details

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

Sample Data

Sample ID	S25DS-02050	S25DS-02051	
Field Sample ID	1	2	
Date Tested	25/03/2025	25/03/2025	
Time Tested	14:20	14:46	
E:	355179	355205	
N:	5778015	5778018	
EL:	19.805	19.634	
Lot / Layer:	3013 / 4	3015 / 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 (%)	23.6	23.2	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.97	1.99	
Field Dry Density (t/m³)	1.59	1.61	
Peak Converted Wet Density (t/m³)	2.03	2.01	
Optimum Moisture Content (%)	23.5	23.5	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	100.5	99.5	
Moisture Variation (%)	0.0	0.0	
Hilf Density Ratio (%)	**96.5**	**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:W25DS00561
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 2/04/2025

Sample Details

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

Sample Data

Sample ID	S25DS-02073		
Field Sample ID	1		
Date Tested	26/03/2025		
Time Tested	13:00		
E:	355094		
N:	5778098		
EL:	20.203		
Lot / Layer:	3002 / 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 (%)	24.4		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.95		
Field Dry Density (t/m³)	1.57		
Peak Converted Wet Density (t/m³)	1.99		
Optimum Moisture Content (%)	23.5		
Compactive Effort	Standard		
Moisture Ratio (%)	103.0		
Moisture Variation (%)	0.5 wet		
Hilf Density Ratio (%)	**98.0**		

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:W25DS00579
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 2/04/2025

Sample Details

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

Sample Data

Sample ID	S25DS-02128	S25DS-02129	S25DS-02130	S25DS-02131	S25DS-02132
Field Sample ID	1	2	3	4	5
Date Tested	27/03/2025	27/03/2025	27/03/2025	27/03/2025	27/03/2025
Time Tested	10:10	10:20	13:40	14:00	15:00
E:	355097	355095	355194	355173	355169
N:	5778110	5778082	5778063	5778098	5778064
EL:	20.517	20.417	19.768	20.862	19.763
Lot / Layer:	3001 / 5	3003 / 5	3017 / 3	3026 / -	3019 / -

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	3	0
Field Moisture Content (%)	24.4	22.8	24.9	15.8	24.8
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m³)	1.94	1.97	1.97	2.14	1.93
Field Dry Density (t/m³)	1.56	1.61	1.58	1.84	1.55
Peak Converted Wet Density (t/m³)	1.99	2.00	1.99	2.10	1.98
Optimum Moisture Content (%)	24.5	22.5	23.0	16.5	22.5
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	100.0	100.0	108.0	97.0	111.0
Moisture Variation (%)	0.0	0.0	2.0 wet	0.5 dry	2.5 wet
Hilf Density Ratio (%)	**97.0**	**98.5**	**99.0**	**101.5**	**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:W25DS00622
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 27/04/2025

Sample Details

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

Sample Data

Sample ID	S25DS-02335	S25DS-02336	
Field Sample ID	2	3	
Date Tested	1/04/2025	1/04/2025	
Time Tested	14:00	14:15	
E:	355211	355182	
N:	5778059	5778064	
EL:	19.966	20.001	
Lot / Layer:	3016 / FSL	3018 / FSL	

Field and Laboratory Data

Depth of Test (mm)	175	175	
Depth of Layer (mm)	200	200	
AS Sieve Size (mm)	19.0	19.0	
Oversize Wet (%)	0	0	
Field Moisture Content (%)	28.6	23.5	
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Density (t/m³)	1.93	2.02	
Field Dry Density (t/m³)	1.50	1.64	
Peak Converted Wet Density (t/m³)	1.97	1.97	
Optimum Moisture Content (%)	25.5	23.0	
Compactive Effort	Standard	Standard	
Moisture Ratio (%)	112.0	102.5	
Moisture Variation (%)	3.0 wet	0.5 wet	
Hilf Density Ratio (%)	**98.0**	**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:W25DS00637
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 27/04/2025

Sample Details

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

Sample Data

Sample ID	S25DS-02414		
Field Sample ID	1		
Date Tested	2/04/2025		
Time Tested	09:30		
E:	355224		
N:	5778094		
EL:	21.003		
Lift / Layer:	3029 / -		

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 (%)	26.0		
Field Moisture Content Method	AS 1289.2.1.1		
Field Wet Density (t/m³)	1.96		
Field Dry Density (t/m³)	1.55		
Peak Converted Wet Density (t/m³)	1.96		
Optimum Moisture Content (%)	26.0		
Compactive Effort	Standard		
Moisture Ratio (%)	101.0		
Moisture Variation (%)	0.0		
Hilf Density Ratio (%)	**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:W25DS01100
Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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
(Base Laboratory Manager -
Date of Issue: 30/05/2025

Sample Details

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

Sample Data

Sample ID	S25DS-04211					
Field Sample ID	1					
Date Tested	27/05/2025					
E:	355118 (5117.021)					
N:	5778028 (78023.735)					
EL:	20.130					
Lot / Layer:	3008 / Final					

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 (%)	19.2					
Field Moisture Content Method	AS 1289.2.1.1					
Field Wet Density (t/m³)	2.05					
Field Dry Density (t/m³)	1.72					
Peak Converted Wet Density (t/m³)	1.96					
Optimum Moisture Content (%)	21.5					
Compactive Effort	Standard					
Moisture Ratio (%)	88.5					
Moisture Variation (%)	2.5 dry					
Hilf Density Ratio (%)	**104.5**					

Comments

Results relate only to the items tested/sampled.

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:S25DS-01118/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 24/03/2025

Sample Details

Location	Clyde
Sample Location	E: 355123, N: 5778058, EL: 18.644, Lot: 3022
Field Sample ID	1
Date Sampled	25/02/2025
Time Sampled	13:10
Source	Onsite
Material	Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S25DS-01118

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	19.7	
Date Tested		26/02/2025	
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		Yes	
Liquid Limit (%)	AS 1289.3.1.2	45	
Plastic Limit (%)	AS 1289.3.2.1	21	
Plasticity Index (%)	AS 1289.3.3.1	24	
Date Tested		6/03/2025	

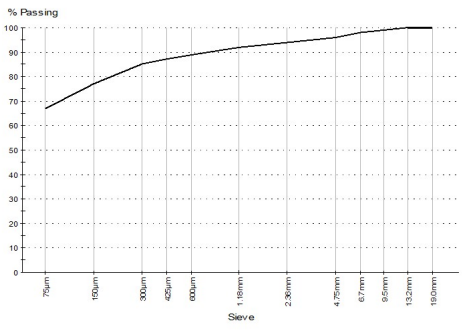
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 27/02/2025

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	99	
6.7mm	98	
4.75mm	96	
2.36mm	94	
1.18mm	92	
600µm	89	
425µm	87	
300µm	85	
150µm	77	
75µm	67	

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:S25DS-01257/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 24/03/2025

Sample Details

Location	Clyde
Sample Location	E: 355131, N: 5778020, EL: 18.815, Lot: 3009, Layer: 1
Field Sample ID	1
Date Sampled	27/02/2025
Time Sampled	12:10
Source	Onsite
Material	Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S25DS-01257

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	16.0	
Date Tested		28/02/2025	
Sample History	AS 1289.1.1	Oven-Dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	9.0	
Mould Length (mm)		250	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	42	
Plastic Limit (%)	AS 1289.3.2.1	16	
Plasticity Index (%)	AS 1289.3.3.1	26	
Date Tested		6/03/2025	

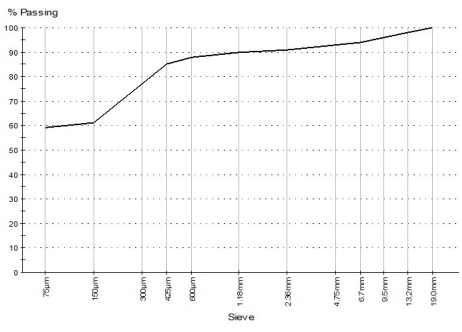
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 4/03/2025

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	98	
9.5mm	96	
6.7mm	94	
4.75mm	93	
2.36mm	91	
1.18mm	90	
600µm	88	
425µm	85	
300µm	77	
150µm	61	
75µm	59	

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:S25DS-02053/1
Issue No: 1

Material Test Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
AUBURN VIC 3123
Project: Riverfield Square Estate, Stage 30
Project No.: 1091938.030
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: 27/04/2025

Sample Details

Location	Clyde
Sample Location	E: 355205, N: 5778018, EL: 19.634, Lot: 3015, Layer: 4
Field Sample ID	1
Date Sampled	25/03/2025
Time Sampled	14:46
Source	Imported - Nar Nar Goon
Material	Clay
Specification	AS Grading
Sampling Method	AS1289.1.2.1 Clause 6.4 (b)
Sample ID	S25DS-02053

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	19.0	
Date Tested		26/03/2025	
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	55	
Plastic Limit (%)	AS 1289.3.2.1	21	
Plasticity Index (%)	AS 1289.3.3.1	34	
Date Tested		31/03/2025	

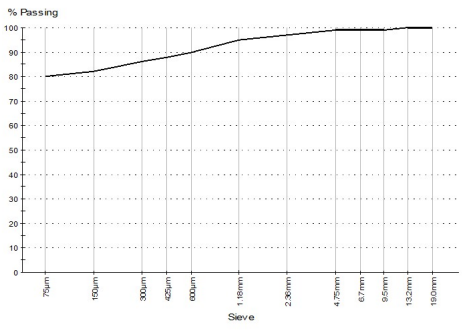
Particle Size Distribution

Method: AS 1289.3.6.1
Drying By: Oven
Date Tested: 27/03/2025

Note: Sample Washed

Sieve Size	% Passing	Limits
19.0mm	100	
13.2mm	100	
9.5mm	99	
6.7mm	99	
4.75mm	99	
2.36mm	97	
1.18mm	95	
600µm	90	
425µm	88	
300µm	86	
150µm	82	
75µm	80	

Chart



Comments

N/A

Appendix D Controlled Fill Certificate

CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : Riverfield Square Estate Stage 30
Lots 3001 to 3030

Chadwick Geotechnics REF:
1091938.030.R1.v2

DATE: 10 June 2025

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

SUMMARY

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

So far as 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 February 2025 and was completed on 27 May 2025. No responsibility or liability will be accepted and Chadwick Geotechnics Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions since the site testing.

CHADWICK GEOTECHNICS PTY LTD

Robert Barden
Project Manager

Michael DiMeglio
Project Director

CHADWICK
GEOTECHNICS