



# **REPORT**

## **Level 1 Geotechnical Testing and Inspection Authority Services**

**Riverfield Estate Stage 10**

**Lots 1001 and 1031**

**Prepared for:**

**Brown Property Group Pty Ltd**

**14 April 2023**

Our Ref: 1016363.010.v1

## Table of contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>Project details</b>	<b>3</b>
	2.2 Roles	4
	2.3 Specifications	4
	2.4 Dates on Site	5
	2.5 Included Areas	5
	2.6 Excluded areas	5
<b>3</b>	<b>Inspection and Testing</b>	<b>6</b>
	3.1 Earthworks	6
	3.2 Fill Material	6
	3.3 Subgrade Assessment / Proof Roll	7
	3.4 Engineered Fill Construction	8
	3.5 Density testing	9
<b>4</b>	<b>Conclusion</b>	<b>10</b>
<b>5</b>	<b>Applicability</b>	<b>11</b>

<b>Appendix A</b>	<b>: Location Plan</b>
<b>Appendix B</b>	<b>: Hilf Density Test Summary</b>
<b>Appendix C</b>	<b>: NATA Endorsed Laboratory Reports</b>
<b>Appendix D</b>	<b>: Controlled Fill Certificate</b>

## Document Control

<b>Title: Level One Inspection and testing Services.</b>					
<b>Date</b>	<b>Version</b>	<b>Description</b>	<b>Prepared by:</b>	<b>Reviewed by:</b>	<b>Authorised by</b>
14 April 2023	V1	1016363.010, Level One Report Riverfield Estate Stage 10	SP and RHB	RWMC	TJJC

## 1 Introduction

Chadwick Geotechnics Pty Ltd (Chadwick Geotechnics), was engaged by Brown Property Group Pty Ltd, to provide Level 1 Geotechnical Inspection and Testing Authority (GITA) services for the earthworks conducted within Stage 10 of the Riverfield Estate in Clyde between 2 June 2021 and 15 February 2023.

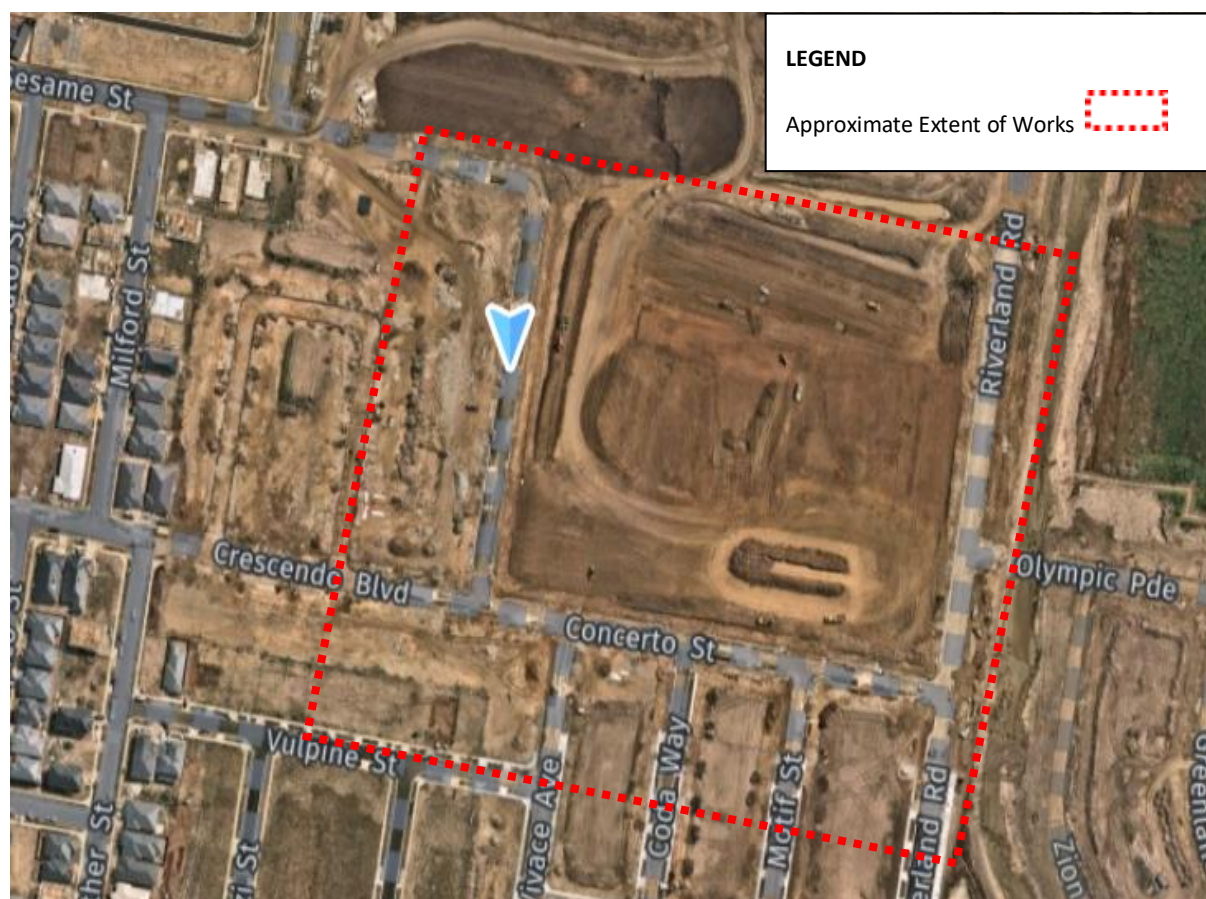
Level 1 GITA services as defined in AS3798-2007 “Guidelines on Earthworks for Commercial and Residential Development,” requires full time inspection and field and laboratory testing of earthworks in accordance with AS1289 “Methods of Testing Soils for Engineering Purposes.”

## 2 Project details

The Riverfield Estate Stage 10 is located to the North of Concerto Rd and West of Riverland Road. Stages 11, 12 and the Government School are located within the same development area.

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

*Figure 2: extract from Nearmap*



## 2.2 Roles

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

**Table 2: Roles on the Project**

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

Note:

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

## 2.3 Specifications

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

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

- All Filling, in excess, of 200mm depth within the residential lots shall be undertaken to specifications satisfying the requirements of AS 3798-2007 "Guidelines on Earthworks for Commercial and Residential Development".
- The fill soils to comply with the 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007, and the following:
  - Maximum particle size of 150mm.
  - Particles over 37.5mm diameter not to exceed 20% of the material.
  - Organic soils, topsoil, silts, or soils containing organic matter, wood, plastics, metal, or other deleterious materials are not acceptable.
- Subgrade to be proof rolled prior to placement of an engineered fill.
- Fill to be compacted in near horizontal layers not exceeding 250mm loose thickness.
- Compaction to achieve a ratio of at least 95% Standard Maximum Dry Density (SMDD).
- Frequency of testing to be in accordance with Table 8.1 of AS3798-2007.

## 2.4 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 2021	2, 3
November 2021	24, 26, 27, 29, 30
December 2021	1, 2, 4, 6, 7, 14, 18, 22
January 2022	6, 7, 10, 11, 12, 18, 22, 24
February 2022	2, 3, 9, 11, 14, 16, 21, 22
March 2022	11, 21
September 2022	29, 30
October 2022	4
November 2022	8, 9
February 2023	15.

## 2.5 Included Areas

This report is applicable to material placed by the contractor on the residential lots within Riverfield Estate Stage 10, as shown on the Site Plan in **Appendix A**, and with reference to Section 2.6 (Excluded Areas) of this report.

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

- Lot 1001 to Lot 1031

## 2.6 Excluded areas

This report does not include fill outside the general boundary of the filled areas as shown in **Appendix A** of this report. No fill was placed on the lots not mentioned in Section 2.5 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 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 3.5 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'.

#### 3.1 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.
- Placement and compaction of engineered fill.

#### 3.2 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 surrounding sites.

Sample taken from the site stockpiles comprising local material used for fill was taken for geotechnical compliance testing during the works. The material compliance test results are in Table 3.1 below. The laboratory test certificate is attached in **Appendix C**.

**Table 3.1: 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			
S22DS-09499/1	100	98	94	88	81	47	45	16	29

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

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

Below are two photographs of typical materials used during construction.

*Figure 3.1: Photographs of the material used on site*



### 3.3 Subgrade Assessment / Proof Roll

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

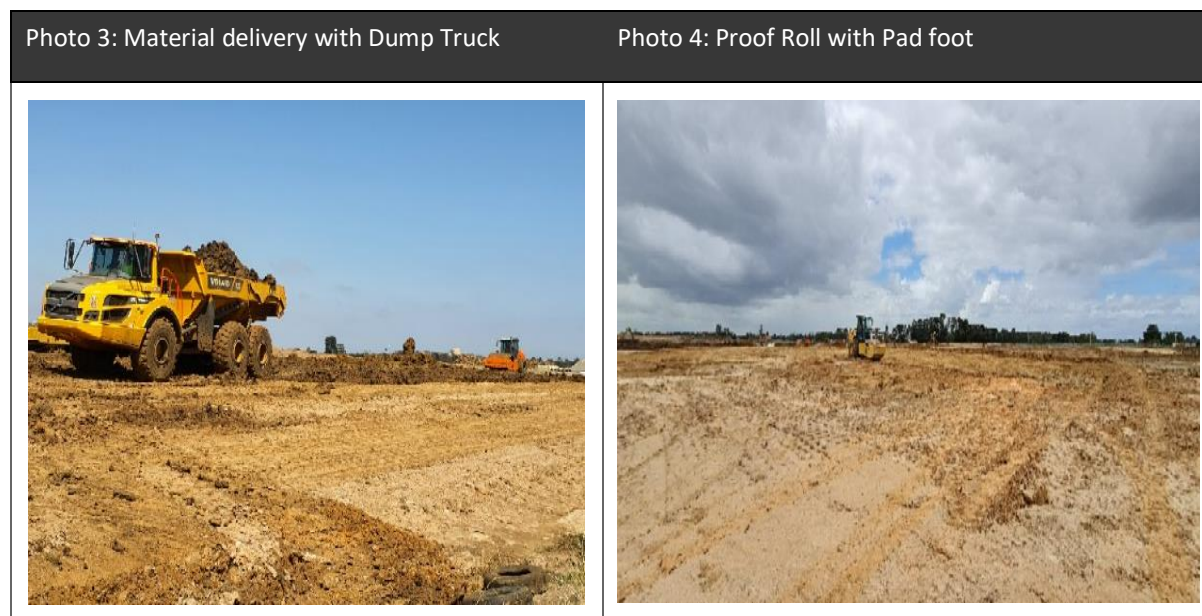
Subgrade assessments were conducted following the removal of the topsoil and unsuitable materials.

The subgrade inspections were performed in accordance with the Level 1 guidelines presented in AS 3798–2007 Section 5.5. No soft spots or deflections were encountered during the inspections and the area was found to be firm and free of vegetation and other deleterious material.



Below are two photographs of the subgrade assessment and material delivery at the project.

*Figure 3.2: Subgrade assessment photographs*



### 3.4 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.

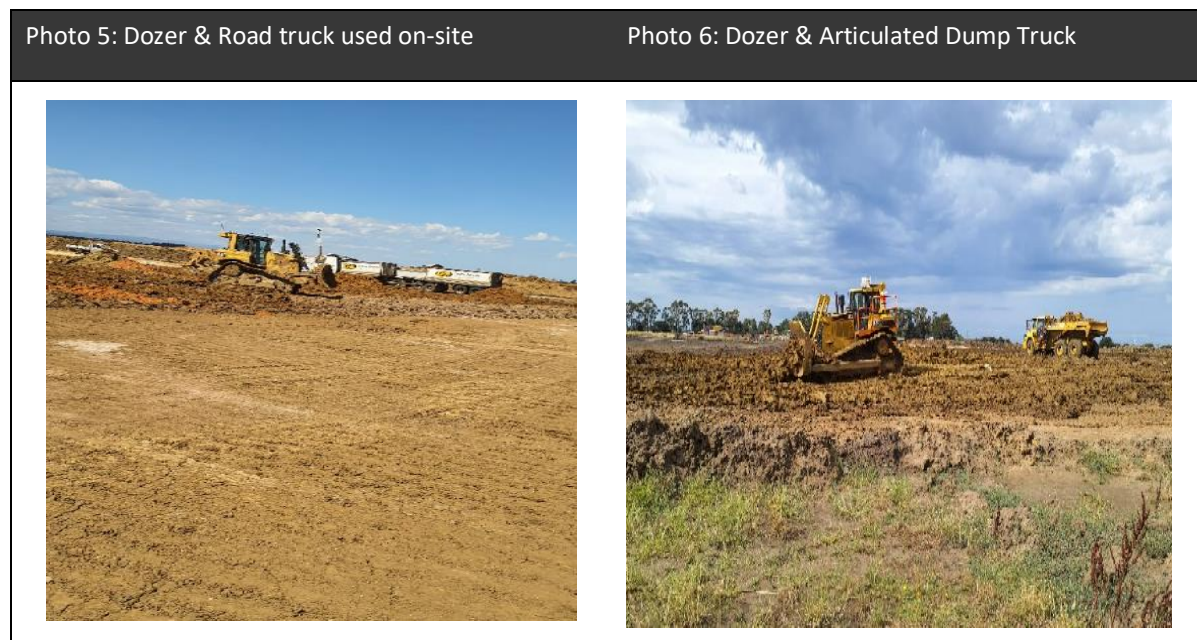
The following machinery was on site during earthworks.

**Table 3.1: Earthworks plant on site**

Equipment type	Model
Dozer	Caterpillar Bulldozer & Caterpillar Grader
Pad foot roller	Caterpillar compactor Pad-Foot Roller
Water cart	Off-Road Water Cart with spray bars
Dump Trucks	Caterpillar Articulated Dump Truck & Road Trucks

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

*Figure 3.3: General Earthwork machinery and fill construction photographs*



### 3.5 Density testing

Field density and moisture content testing was undertaken progressively during construction on the compacted fill using a calibrated portable density and moisture gauge in accordance with AS 1289.5.8.1. The HILF rapid compaction test was used for peak converted wet density determinations in accordance with AS 1289.5.7.1. Test locations were recorded using a handheld GPS unit. A site plan showing the field density test locations is provided in **Appendix A**.

Testing was undertaken subject to the area and volume worked on the day of testing, this was:

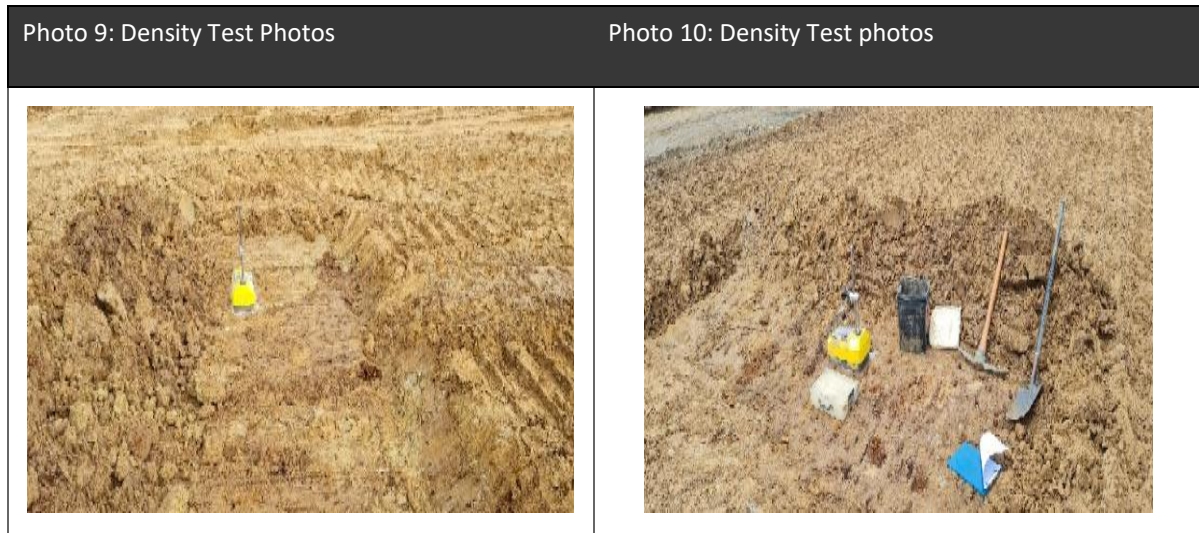
- 1 test per material type per layer per 2500m<sup>2</sup> or 1 test per 500m<sup>3</sup> distributed reasonably evenly or 3 tests per lot – whichever requires the most tests in accordance with Type 1 Earthworks (large scale operations) as defined in Table 8.1 of the AS 3798-2007;
- Subgrade to be proof rolled in presence of the Level 1 Inspector prior to the placement of engineered fill.
- Fill to be compacted in near horizontal layers.
- Compaction to achieve a ratio of at least 95% Standard MDD (maximum dry density).

Fifty-One (51) tests were performed during 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**.

Below, two photographs of field density testing conducted on site.

*Figure 3.4: Density Testing photographs*



## 4 Conclusion

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

- The materials, used by the earth-works contractor met the geotechnical property requirements of the specification.
- The sourced fill was, considered to be natural, clean, and suitable for use at the site.
- The fill material placed was tested at a suitable frequency in accordance with AS 3798-2007- Table 8.1 and the results indicate the compacted clay achieved the density requirement of the specification.
- Given the consistent construction practices followed by the earthworks contractor and as witnessed by the Chadwick Geotechnics, combined with the satisfactory verification of test results achieved, it is inferred that areas of the site between test locations were performed to the same standard as those areas that have been tested.
- Based on observations made by Chadwick Geotechnics Level 1 personal and the results of field and laboratory tests, we consider that the engineered fill within the site (noted in Section 2.5), as far as we have been able to reasonably determine, have been placed in general accordance with the intent of the specification.
- It is our opinion that the earthworks undertaken have been performed in accordance with the requirements of Section 8.2 – Level 1 Inspection and Testing - AS3798-2007 Guidelines on Earthworks for Commercial and Residential Developments.

After our last day on site the Contractor is responsible to maintain the engineered fill in satisfactory condition. Should the fill be not maintained or protected with a sacrificial layer of topsoil or other fill, the uppermost layers of the engineered fill may deteriorate from the weather causing shrink/swell cracking and may need to be remediated prior to further

construction on the site. Chadwick Geotechnics have not provided supervision since this date and are not responsible for any deterioration that may have occurred.

## 5 Applicability

This report has been prepared for the exclusive use of our client Brown Property Group 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 2 June 2021 and 15 February 2023. No responsibility or liability will be accepted, and Chadwick Geotechnics is indemnified to the full extent permitted by law in respect of the use of this report where there has been a change in the nature of the project or the conditions on site that may alter or affect the conclusions of this report.

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

Chadwick Geotechnics Pty Ltd

Report prepared by:



.....

Robert Barden  
Project Manager

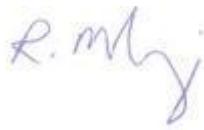
Authorised for Chadwick Geotechnics Pty Ltd by:



.....

Timothy Chadwick  
Project Director

Report reviewed by:



.....


Robert McKenzie  
Senior Associate Geotechnical Engineer  
PE0005222

## **Appendix A : Location Plan**

---



**LEGEND**

 S22DS-02160  
HILF DENSITY TEST LOCATION

**NOTES:**  
 1. AERIAL IMAGE SOURCED FROM NEARMAP. COPYRIGHT NEARMAP PTY LTD. IMAGERY DATE: 14/09/2022.  
 2. BASE PLAN PROVIDED BY CHARLTON DEGG. DRAWING REFERENCE: 1209 CP-A REV. 44. DATE RECEIVED: 07/02/2023.



  
ORIGINAL IN COLOUR

PROJECT No. 1016363		
DESIGNED	RHB	Apr.23
DRAWN	KMJA	Apr.23
CHECKED		
APPROVED		DATE

CLIENT	GREENRIDGE PROPERTIES PTY LTD		
PROJECT	RIVERFIELD ESTATE STAGE 10		
TITLE	LEVEL ONE HILF DENSITY TESTING HILF DENSITY TEST LOCATION PLAN		
SCALE (A3)	1:2000	FIG No.	1016363-F01
			REV 1

## **Appendix B : Hilf Density Test Summary**

---



# 1016363.010 Riverfield Estate St 10

## HILF Density Testing - Field Summary

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

[www.chadwickgeotechnics.com.au](http://www.chadwickgeotechnics.com.au)



Report No	Sample No	Date	Test Number	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation OMC (%)	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W21DS02035	S21DS-07475	2/06/2021	1	356812	5777850	8.79	95	0 wet	Pass	
HDR:W21DS02035	S21DS-07476	2/06/2021	2	356903	5777809	8.94	96.5	0.5 dry	Pass	
HDR:W21DS02035	S21DS-07477	2/06/2021	3	356893	5777770	9.17	95.5	3 wet	Pass	
HDR:W21DS02035	S21DS-07478	2/06/2021	4	356884	5777734	9.44	95	3 wet	Pass	
HDR:W21DS02063	S21DS-07569	3/06/2021	1	356932	5777996	9.14	99	0.5 wet	Pass	
HDR:W21DS02063	S21DS-07570	3/06/2021	2	356926	5777944	8.88	95	0.5 wet	Pass	
HDR:W21DS02063	S21DS-07571	3/06/2021	3	356912	5777886	8.99	102	5.5 wet	Fail	See Retest 13129
HDR:W21DS02063	S21DS-07572	3/06/2021	4	356935	5777853	8.47	97.5	2.5 wet	Pass	
HDR:W21DS03475	S21DS-12797	24/11/2021	2	356950	5777846	8.675	100.5	0	Pass	
HDR:W21DS03475	S21DS-12798	24/11/2021	3	356921	5777844	8.704	105.5	0	Pass	
HDR:W21DS03502	S21DS-12918	26/11/2021	1	356960	5777826	8.415 / FSL-0.8m	99	0.5 wet	Pass	
HDR:W21DS03502	S21DS-12919	26/11/2021	2	356974	5777823	8.329 / FSL-0.9m	104	0 dry	Pass	
HDR:W21DS03502	S21DS-12920	26/11/2021	3	356990	5777831	8.365 / FSL-0.7m	100	2.5 dry	Pass	
HDR:W21DS03502	S21DS-12921	26/11/2021	4	356901	5777827	8.190 / FSL-0.9m	102	2.5 dry	Pass	
HDR:W21DS03502	S21DS-12922	26/11/2021	5	357018	5777812	8.173 / 2	97.5	2.3 dry	Pass	
HDR:W21DS03502	S21DS-12923	26/11/2021	6	57004	5777818	8.260 / 2	99	0.5 dry	Pass	





# 1016363.010 Riverfield Estate St 10

## HILF Density Testing - Field Summary

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

[www.chadwickgeotechnics.com.au](http://www.chadwickgeotechnics.com.au)



Report No	Sample No	Date	Test Number	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation OMC (%)	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W21DS03503	S21DS-12924	27/11/2021	1	356924	5777847	9.02 / 1	96.5	0.5 dry	Pass	
HDR:W21DS03503	S21DS-12930	27/11/2021	2	356914	5777837	9.21 / 1	103.5	2 dry	Pass	
HDR:W21DS03531	S21DS-13002	29/11/2021	1	356953	5777794	8.535	96.5	0.5 wet	Pass	
HDR:W21DS03532	S21DS-13003	29/11/2021	1	356935	5777848	8.921	99	0 dry	Pass	
HDR:W21DS03532	S21DS-13004	29/11/2021	2	356962	5777837	8.85	98	0 dry	Pass	
HDR:W21DS03542	S21DS-13017	30/11/2021	1	356952	5777792	8.417	97	1.5 wet	Pass	
HDR:W21DS03542	S21DS-13018	30/11/2021	2	356969	5777793	8.16	97.5	1.5 wet	Pass	
HDR:W21DS03542	S21DS-13019	30/11/2021	3	356960	5777767	8.431	95.5	2 wet	Pass	
HDR:W21DS03542	S21DS-13020	30/11/2021	4	356998	5777789	8.085	98.5	1.5 wet	Pass	
HDR:W21DS03542	S21DS-13021	30/11/2021	5	357016	5777796	8.141	96	1.5 wet	Pass	
HDR:W21DS03542	S21DS-13022	30/11/2021	6	356970	5777762	8.163	100	0 dry	Pass	
HDR:W21DS03542	S21DS-13023	30/11/2021	7	356956	5777748	8.428	94.5	2 wet	Fail	See Retest 13128
HDR:W21DS03558	S21DS-13113	1/12/2021	1	357024	5777791	8.176	98.5	0.5 wet	Pass	
HDR:W21DS03558	S21DS-13114	1/12/2021	2	357015	5777763	8.25	97.5	0.5 wet	Pass	
HDR:W21DS03558	S21DS-13115	1/12/2021	3	356973	5777799	8.75	98	1.5 dry	Pass	
HDR:W21DS03558	S21DS-13116	1/12/2021	4	356990	5777787	8.55	98	0.5 wet	Pass	



# 1016363.010 Riverfield Estate St 10

## HILF Density Testing - Field Summary

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

[www.chadwickgeotechnics.com.au](http://www.chadwickgeotechnics.com.au)



Report No	Sample No	Date	Test Number	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation OMC (%)	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W21DS03561	S21DS-13126	2/12/2021	1	356958	5777747	8.84	100.5	0.5 dry	Pass	
HDR:W21DS03561	S21DS-13128	2/12/2021	2	356953	5777747	8.661	98.5	0 dry	Pass	Retest of S21DS-13023
HDR:W21DS03563	S21DS-13129	2/12/2021	1	356946.889	5777889.98	9.086	100.5	0.5 wet	Pass	Retest of S21DS-07571
HDR:W21DS03581	S21DS-13170	4/12/2021	1	356950	5777731	8.9	100	2.5 dry	Pass	
HDR:W21DS03581	S21DS-13174	4/12/2021	2	356949	5777674	8.795	95	2.5 wet	Pass	
HDR:W21DS03600	S21DS-13267	6/12/2021	1	356970	5777813	8.845	99	2.5 wet	Pass	
HDR:W21DS03600	S21DS-13268	6/12/2021	2	356935	5777811	9.19	101	0 wet	Pass	
HDR:W21DS03600	S21DS-13269	6/12/2021	3	356963	5777706	8.755	96.5	2 wet	Pass	
HDR:W21DS03600	S21DS-13270	6/12/2021	4	356963	5777734	8.942	95	0 dry	Pass	
HDR:W21DS03601	S21DS-13271	6/12/2021	1	356988	5777824	8.499	101.5	0.5 dry	Pass	
HDR:W21DS03610	S21DS-13293	7/12/2021	1	356974	5777904.57	9.032	97	2.5 wet	Pass	
HDR:W21DS03676	S21DS-13520	14/12/2021	1	356966	5777685		101	1 dry	Pass	
HDR:W21DS03707	S21DS-13627	16/12/2021	1	356576	5777883	8.987	92.5	0	Fail	See Retest 13670
HDR:W21DS03726	S21DS-13670	18/12/2021	1	356580	5777878	8.953	99.5	0.5 dry	Pass	Retest of 13627
HDR:W21DS03726	S21DS-13671	18/12/2021	2	356972	5777881	9.076	99	0.5 wet	Pass	



# 1016363.010 Riverfield Estate St 10

## HILF Density Testing - Field Summary

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

[www.chadwickgeotechnics.com.au](http://www.chadwickgeotechnics.com.au)



Report No	Sample No	Date	Test Number	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation OMC (%)	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W21DS03726	S21DS-13672	18/12/2021	3	356990	5777922	9.175	99.5	1.5 wet	Pass	
HDR:W21DS03788	S21DS-13890	22/12/2021	1	357007	5777787	8.79	102	0.5 wet	Pass	
HDR:W21DS03788	S21DS-13891	22/12/2021	2	356959	5777720	9.283	96	2 wet	Pass	
HDR:W21DS03788	S21DS-13892	22/12/2021	3	356959	5777720	9.283	96.5	0 wet	Pass	
HDR:W22DS00004	S22DS-00017	6/01/2022	1	357000	5777695	9.15	103	1 dry	Pass	
HDR:W22DS00004	S22DS-00018	6/01/2022	2	357019	5777675	9.23	98	2.5 dry	Pass	
HDR:W22DS00005	S22DS-00019	6/01/2022	1	357001	5777876	- / 2	97.5	0.5 wet	Pass	
HDR:W22DS00005	S22DS-00020	6/01/2022	2	357004	5777883	- / 1	101	2 dry	Pass	
HDR:W22DS00009	S22DS-00026	7/01/2022	1	357036	5777724	8.96	100	1.5 dry	Pass	
HDR:W22DS00018	S22DS-00055	10/01/2022	1	357015	5777884	9.11	96.5	0 wet	Pass	-
HDR:W22DS00018	S22DS-00056	10/01/2022	2	357001	5777870	9.017	95.5	0.5 dry	Pass	-
HDR:W22DS00018	S22DS-00057	10/01/2022	3	357021	5778027	9.485	98.5	0 wet	Pass	-
HDR:W22DS00021	S22DS-00071	10/01/2022	1	357028	5778023	9.144	94	5 wet	Fail	See Retest 00100
HDR:W22DS00030	S22DS-00100	11/01/2022	1	357080	5777824	7.63	98	0 dry	Pass	Retest of S22DS-00071
HDR:W22DS00030	S22DS-00101	11/01/2022	2	357021	5778027	9.504	99	0 dry	Pass	



# 1016363.010 Riverfield Estate St 10

## HILF Density Testing - Field Summary

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

[www.chadwickgeotechnics.com.au](http://www.chadwickgeotechnics.com.au)



Report No	Sample No	Date	Test Number	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation OMC (%)	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W22DS00030	S22DS-00102	11/01/2022	3	357027	5777996	9.574	97.5	0.5 wet	Pass	
HDR:W22DS00030	S22DS-00103	11/01/2022	4	357052	5777809	7.8	98	0 wet	Pass	
HDR:W22DS00037	S22DS-00111	12/01/2022	1	357108	5777807	7.75	98	0 wet	Pass	
HDR:W22DS00070	S22DS-00240	18/01/2022	1	357156	5777788	6.967	98.5	0.5 dry	Pass	
HDR:W22DS00117	S22DS-00425	22/01/2022	1	357180	5777811	7.5	99	0.5 wet	Pass	
HDR:W22DS00129	S22DS-00453	24/01/2022	1	357148	5777802	8.43	107	2 dry	Pass	
HDR:W22DS00206	S22DS-00717	3/02/2022	1	357002	5777833	8.691	102	2.5 wet	Pass	
HDR:W22DS00209	S22DS-00722	2/02/2022	1	357011	5777827	8.266	102.5	0 dry	Pass	
HDR:W22DS00209	S22DS-00723	2/02/2022	2	357030	5777832	8.58	101	0 dry	Pass	
HDR:W22DS00261	S22DS-00874	9/02/2022	1	357176	5777799	8.265	99	0.5 dry	Pass	
HDR:W22DS00326	S22DS-01028	14/02/2022	1	357230	5777780	7.266	99	0.5 dry	Pass	
HDR:W22DS00326	S22DS-01029	14/02/2022	2	357253	5777801	6.944	97	1 dry	Pass	
HDR:W22DS00326	S22DS-01030	14/02/2022	3	357259	5777785	7.019	100.5	0.5 dry	Pass	
HDR:W22DS00335	S22DS-01060	11/02/2022	1	357250	5777796	6.761	94.5	0.5 dry	Fail	See Retest 01175
HDR:W22DS00366	S22DS-01169	16/02/2022	1	357156	5777816	8.8888	100.5	1.5 dry	Pass	



# 1016363.010 Riverfield Estate St 10

## HILF Density Testing - Field Summary

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

[www.chadwickgeotechnics.com.au](http://www.chadwickgeotechnics.com.au)



Report No	Sample No	Date	Test Number	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation OMC (%)	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W22DS00366	S22DS-01170	16/02/2022	2	357167	5777829	8.861	98.5	0.5 dry	Pass	
HDR:W22DS00366	S22DS-01171	16/02/2022	3	357184	5777831	8.545	99.5	0 dry	Pass	
HDR:W22DS00366	S22DS-01172	16/02/2022	4	357215	5777807	7.825	100.5	0.5 dry	Pass	
HDR:W22DS00366	S22DS-01173	16/02/2022	5	357224	5777824	7.691	101.5	1.5 dry	Pass	
HDR:W22DS00366	S22DS-01174	16/02/2022	6	357251	5777812	7.49	99.5	2 dry	Pass	
HDR:W22DS00366	S22DS-01175	16/02/2022	7	357250	5777799	6.744	100	0 wet	Pass	Retest of S22DS-01060
HDR:W22DS00398	S22DS-01255	21/02/2022	1	357118	5777820	8.797	104	2.5 dry	Pass	
HDR:W22DS00398	S22DS-01256	21/02/2022	2	357166	5777804	8.609	106	3 dry	Pass	
HDR:W22DS00398	S22DS-01257	21/02/2022	3	357206	5777803	7.931	103.5	1 dry	Pass	
HDR:W22DS00416	S22DS-01355	22/02/2022	1	357252	5777790	7.437	97.5	0.5 wet	Pass	
HDR:W22DS00587	S22DS-01905	11/03/2022	1	357053	5777804	9.055	102.5	0.5 dry	Pass	
HDR:W22DS00587	S22DS-01906	11/03/2022	2	357253	5777802	7.621	100	1.5 dry	Pass	
HDR:W22DS00658	S22DS-02160	21/03/2022	1	357048	5777831	8.854	100.5	0 wet	Pass	
HDR:W22DS00658	S22DS-02161	21/03/2022	2	357090	5777824	8.888	102.5	1.5 dry	Pass	
HDR:W22DS00658	S22DS-02162	21/03/2022	3	357158	5777810	8.645	106	1.5 dry	Pass	



## **Appendix C : NATA Endorsed Laboratory Reports**

---



**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:W21DS02035**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: J. Lamont  
 (Dandenong Laboratory Manager)  
 Date of Issue: 11/04/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Clay

## Sample Data

Sample ID	S21DS-07475	S21DS-07476	S21DS-07477	S21DS-07478
Field Sample ID	1	2	3	4
Date Tested	2/06/2021	2/06/2021	2/06/2021	2/06/2021
Sample	1	2	3	4
E:	356812	356903	356893	356884
N:	5777850	5777809	5777770	5777734
EL:	8.79	8.94	9.17	9.44

## Field and Laboratory Data

Depth of Test (mm)	175	175	175	175
Depth of Layer (mm)	200	200	200	200
Field Wet Density (t/m <sup>3</sup> )	2.07	2.09	2.07	2.05
Peak Converted Wet Density (t/m <sup>3</sup> )	2.18	2.16	2.17	2.16
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.0	0.5 dry	3.0 wet	3.0 wet
Hilf Density Ratio (%)	<b>95.0</b>	<b>96.5</b>	<b>95.5</b>	<b>95.0</b>

## 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:W21DS02063**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 16/06/2021

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Clay

## Sample Data

Sample ID	S21DS-07569	S21DS-07570	S21DS-07571	S21DS-07572
Field Sample ID	1	2	3	4
Date Tested	3/06/2021	3/06/2021	3/06/2021	3/06/2021
E:	356932	356926	356912	356935
N:	5777996	5777944	5777886	5777853
EL:	9.14	8.88	8.99	8.47

## 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 Wet Density (t/m³)	2.08	2.05	2.09	2.03
Peak Converted Wet Density (t/m³)	2.10	2.16	2.05	2.08
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.5 wet	0.5 wet	5.5 wet	2.5 wet
<b>Hilf Density Ratio (%)</b>	<b>99.0</b>	<b>95.0</b>	<b>102.0</b>	<b>97.5</b>

## 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:W21DS03475**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 1/12/2021

Accreditation Number: 12719  
 Site Number: 12712  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S21DS-12797	S21DS-12798			
Field Sample ID	1	2			
Date Tested	24/11/2021	24/11/2021			
E:	356950	356921			
N:	5777846	5777844			
RL:	8.675	8.704			
Lot:	1107	1105			

## Field and Laboratory Data

Depth of Test (mm)	125	125			
Depth of Layer (mm)	150	150			
AS Sieve Size (mm)	19.0	19.0			
Oversize Wet (%)	0	0			
Field Wet Density (t/m³)	2.17	2.23			
Peak Converted Wet Density (t/m³)	2.15	2.12			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.0	0.0			
Hilf Density Ratio (%)	<b>100.5</b>	<b>105.5</b>			

## 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:W21DS03502**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712

Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 1/12/2021

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty Clay

## Sample Data

Sample ID	S21DS-12918	S21DS-12919	S21DS-12920	S21DS-12921	S21DS-12922	S21DS-12923
Field Sample ID	1	2	3	4	5	6
Date Tested	26/11/2021	26/11/2021	26/11/2021	26/11/2021	26/11/2021	26/11/2021
E:	356960	356974	356990	356001	357018	57004
N:	5777826	5777823	5777831	5777827	5777812	5777818
RL / Layer:	8.415 / FSL-0.8m	8.329 / FSL-0.9m	8.365 / FSL-0.7m	8.190 / FSL-0.9m	8.173 / 2	8.260 / 2
Lot:	1108	1109	1111	1113	1113	1112

## Field and Laboratory Data

Depth of Test (mm)	175	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0	0
Field Wet Density (t/m <sup>3</sup> )	2.06	2.06	2.06	2.08	2.06	2.12
Peak Converted Wet Density (t/m <sup>3</sup> )	2.08	1.98	2.06	2.04	2.11	2.14
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.5 wet	0.0	2.5 dry	2.5 dry	2.5 dry	0.5 dry
Hilf Density Ratio (%)	<b>99.0</b>	<b>104.0</b>	<b>100.0</b>	<b>102.0</b>	<b>97.5</b>	<b>99.0</b>

## 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:W21DS03503**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 1/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty Clay

## Sample Data

Sample ID	S21DS-12924	S21DS-12930			
Field Sample ID	1	7			
Date Tested	27/11/2021	27/11/2021			
E:	356924	356914			
N:	577847	577837			
RL / Layer:	9.02 / 1	9.21 / 1			
Lot:	1105	1104			

## Field and Laboratory Data

Depth of Test (mm)	125	125			
Depth of Layer (mm)	150	150			
AS Sieve Size (mm)	19.0	19.0			
Oversize Wet (%)	0	0			
Field Wet Density (t/m <sup>3</sup> )	2.03	2.04			
Peak Converted Wet Density (t/m <sup>3</sup> )	2.10	1.97			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.5 dry	2.0 dry			
Hilf Density Ratio (%)	<b>96.5</b>	<b>103.5</b>			

## 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:W21DS03531**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 1/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty Sandy Clay

## Sample Data

Sample ID	S21DS-13002				
Field Sample ID	1				
Date Tested	29/11/2021				
E:	356953				
N:	5777794				
RL / Layer:	8.535 / FSL-0.7m				
Lot:	1042				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.09				
Peak Converted Wet Density (t/m³)	2.17				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 wet				
Hilf Density Ratio (%)	<b>96.5</b>				

## 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:W21DS03532**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Approved Signatory: M. Robinson  
 (Team Leader)

Accreditation Number: 12719  
 Site Number: 12712  
 Date of Issue: 1/12/2021

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S21DS-13003	S21DS-13004			
Field Sample ID	1	2			
Date Tested	29/11/2021	29/11/2021			
E:	356935	356962			
N:	5777848	5777837			
RL:	8.921	8.850			
Lot:	1106	1108			

## 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 Wet Density (t/m³)	2.11	2.09			
Peak Converted Wet Density (t/m³)	2.13	2.13			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.0	0.0			
Hilf Density Ratio (%)	<b>99.0</b>	<b>98.0</b>			

## 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:W21DS03542**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 3/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty/Sandy Clay

## Sample Data

Sample ID	S21DS-13017	S21DS-13018	S21DS-13019	S21DS-13020	S21DS-13021	S21DS-13022
Field Sample ID	1	2	3	4	5	6
Date Tested	30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
E:	356952	356969	356960	356998	357016	356970
N:	5777792	5777793	5777767	5777789	5777796	5777762
RL:	8.417	8.160	8.431	8.085	8.141	8.163
Lot:	1041	1043	1026	1039	1037	1027

## Field and Laboratory Data

Depth of Test (mm)	175	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0	0
Field Wet Density (t/m <sup>3</sup> )	2.11	2.11	2.08	2.13	2.08	2.18
Peak Converted Wet Density (t/m <sup>3</sup> )	2.18	2.17	2.17	2.16	2.16	2.18
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	1.5 wet	1.5 wet	2.0 wet	1.5 wet	1.5 wet	0.0
Hilf Density Ratio (%)	<b>97.0</b>	<b>97.5</b>	<b>95.5</b>	<b>98.5</b>	<b>96.0</b>	<b>100.0</b>

## 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:W21DS03542**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 3/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty/Sandy Clay

## Sample Data

Sample ID	S21DS-13023				
Field Sample ID	7				
Date Tested	30/11/2021				
E:	356956				
N:	5777748				
RL:	8.428				
Lot:	1026				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.04				
Peak Converted Wet Density (t/m³)	2.16				
Compactive Effort	Standard				
Moisture Variation (%)	2.0 wet				
Hilf Density Ratio (%)	<b>94.5</b>				

## 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:W21DS03558**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 3/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13113	S21DS-13114	S21DS-13115	S21DS-13116
Field Sample ID	1	2	3	4
Date Tested	1/12/2021	1/12/2021	1/12/2021	1/12/2021
E:	357024	357015	356973	35686
N:	5777791	5777763	5777799	5777787
RL / Layer:	8.176 / FSL-0.93m	8.250 / FSL-0.665m	8.750 / FSL-0.5m	8.550 / FSL-0.6m
Lot:	1034	1029	1041	1039

## 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 Wet Density (t/m³)	2.14	2.12	2.10	2.13
Peak Converted Wet Density (t/m³)	2.18	2.17	2.15	2.16
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.5 wet	0.5 wet	1.5 dry	0.5 wet
Hilf Density Ratio (%)	<b>98.5</b>	<b>97.5</b>	<b>98.0</b>	<b>98.0</b>

**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:W21DS03561**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 3/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13126	S21DS-13128			
Field Sample ID	1	3			
Date Tested	2/12/2021	2/12/2021			
E:	3569.580	3569.53			
N:	5777746.740	5777747.153			
RL / Layer:	8.840	8.661			
Lot:	1026	1026			
Other:		Retest of S21DS-13023			

## 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 Wet Density (t/m <sup>3</sup> )	2.11	2.17			
Peak Converted Wet Density (t/m <sup>3</sup> )	2.10	2.20			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.5 dry	0.0			
Hilf Density Ratio (%)	<b>100.5</b>	<b>98.5</b>			

## 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:W21DS03563**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 3/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S21DS-13129				
Field Sample ID	1				
Date Tested	2/12/2021				
E:	356946.889				
N:	5777889.980				
RL:	9.086				
Lot:	1122				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.10				
Peak Converted Wet Density (t/m³)	2.08				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 wet				
Hilf Density Ratio (%)	<b>100.5</b>				

## 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:W21DS03581**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 6/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13170	S21DS-13174			
Field Sample ID	1	2			
Date Tested	4/12/2021	4/12/2021			
E:	356950	356949			
N:	777731	5777674			
RL / Layer:	8.900 / FSL-0.64m	8.795 / FSL-0.375m			
Lot:	1025	1020			

## 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 Wet Density (t/m <sup>3</sup> )	2.11	2.03			
Peak Converted Wet Density (t/m <sup>3</sup> )	2.11	2.13			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	2.5 dry	2.5 wet			
Hilf Density Ratio (%)	<b>100.0</b>	<b>95.0</b>			

## 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:W21DS03600**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 9/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13267	S21DS-13268	S21DS-13269	S21DS-13270		
Field Sample ID	1	2	3	4		
Date Tested	6/12/2021	6/12/2021	6/12/2021	6/12/2021		
E:	356970	356935	356963	356963		
N:	5777813	5777811	5777706	5777734		
RL / Layer:	8.845 / FSL-0.550m	9.190 / FSL-0.250m	8.755 / FSL-0.504m	8.942 / FSL-0.300m		
Lot:	1041	1044	-	-		

## 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 Wet Density (t/m <sup>3</sup> )	2.15	2.16	2.09	2.09		
Peak Converted Wet Density (t/m <sup>3</sup> )	2.17	2.15	2.16	2.20		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Variation (%)	2.5 wet	0.0	2.0 wet	0.0		
Hilf Density Ratio (%)	<b>99.0</b>	<b>101.0</b>	<b>96.5</b>	<b>95.0</b>		

## 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:W21DS03601**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 9/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13271				
Field Sample ID	1				
Date Tested	6/12/2021				
E:	356988				
N:	5777824				
RL / Layer:	8.499 / FSL-0.560m				
Lot:	1110				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m <sup>3</sup> )	2.14				
Peak Converted Wet Density (t/m <sup>3</sup> )	2.10				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 dry				
Hilf Density Ratio (%)	<b>101.5</b>				

## 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:W21DS03610**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 9/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13293				
Field Sample ID	1				
Date Tested	7/12/2021				
E:	356973.853				
N:	57777904.570				
RL:	9.032				
Lot:	1119				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.03				
Peak Converted Wet Density (t/m³)	2.08				
Compactive Effort	Standard				
Moisture Variation (%)	2.5 wet				
Hilf Density Ratio (%)	<b>97.0</b>				

## 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:W21DS03676**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 15/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S21DS-13520				
Field Sample ID	1				
Date Tested	14/12/2021				
E:	356966				
N:	5777685				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.15				
Peak Converted Wet Density (t/m³)	2.12				
Compactive Effort	Standard				
Moisture Variation (%)	1.0 dry				
Hilf Density Ratio (%)	<b>101.0</b>				

## 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:W21DS03707**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 20/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13627				
Field Sample ID	1				
Date Tested	16/12/2021				
E:	356576				
N:	5777883				
RL:	8.987				
Lot:	1121				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	1.93				
Peak Converted Wet Density (t/m³)	2.09				
Compactive Effort	Standard				
Moisture Variation (%)	0.0				
Hilf Density Ratio (%)	<b>92.5</b>				

## 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:W21DS03726**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 20/12/2021  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13670	S21DS-13671	S21DS-13672			
Field Sample ID	1	2	3			
Date Tested	18/12/2021	18/12/2021	18/12/2021			
E:	356580	356972	356990			
N:	5777878	5777881	5777922			
RL / Layer:	8.953	9.076	9.175			
Lot:	1120	1121	1118			
Other:	Retest of S21DS-13627	Sample 3	Sample 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 (%)	7	0	0			
Field Wet Density (t/m <sup>3</sup> )	2.14	2.10	2.06			
Peak Converted Wet Density (t/m <sup>3</sup> )	2.15	2.12	2.08			
Compactive Effort	Standard	Standard	Standard			
Moisture Variation (%)	0.5 dry	0.5 wet	1.5 wet			
Hilf Density Ratio (%)	<b>99.5</b>	<b>99.0</b>	<b>99.5</b>			

## 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:W21DS03788**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 11/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy Clay

## Sample Data

Sample ID	S21DS-13890	S21DS-13891	S21DS-13892		
Field Sample ID	1	2	3		
Date Tested	22/12/2021	22/12/2021	22/12/2021		
E:	357007	356959	356959		
N:	5777787	5777720	5777720		
RL / Layer:	8.790 / -	9.283 / -	9.283 / -		
Lot:	1038	1027	1024		
Other:	Sample 37	Sample 38	Sample 39		

## Field and Laboratory Data

Depth of Test (mm)	175	175	175		
Depth of Layer (mm)	200	200	200		
AS Sieve Size (mm)	19.0	37.5	19.0		
Oversize Wet (%)	0	4	0		
Field Wet Density (t/m³)	2.21	2.11	2.10		
Peak Converted Wet Density (t/m³)	2.17	2.20	2.17		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.5 wet	2.0 wet	0.0		
Hilf Density Ratio (%)	<b>102.0</b>	<b>96.0</b>	<b>96.5</b>		

## 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:W22DS00004**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 11/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy Clay

## Sample Data

Sample ID	S22DS-00017	S22DS-00018				
Field Sample ID	1	2				
Date Tested	6/01/2021	6/01/2021				
E:	357000.37	357018.90				
N:	5777694.96	5777675.20				
RL / Layer:	9.15 / -	9.23 / -				
Lot:	-	-				
Other:	Sample 40	Sample 41				

## 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 Wet Density (t/m³)	2.14	2.01				
Peak Converted Wet Density (t/m³)	2.08	2.06				
Compactive Effort	Standard	Standard				
Moisture Variation (%)	1.0 dry	2.5 dry				
<b>Hilf Density Ratio (%)</b>	<b>103.0</b>	<b>98.0</b>				

## 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:W22DS00005**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 11  
**Project No.:** 1016363.011  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 11/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Silty Clay

## Sample Data

Sample ID	S22DS-00019	S22DS-00020			
Field Sample ID	1	2			
Date Tested	6/01/2022	6/01/2022			
E:	357001	357004			
N:	5777876	5777883			
RL / Layer:	- / 2	- / 1			
Lot:	-	-			
Other:	-	-			

## 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 Wet Density (t/m³)	2.05	2.07			
Peak Converted Wet Density (t/m³)	2.10	2.05			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.5 wet	2.0 dry			
<b>Hilf Density Ratio (%)</b>	<b>97.5</b>	<b>101.0</b>			

## Comments



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

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

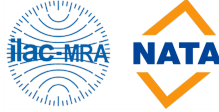

**Report No: HDR:W22DS00009**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**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. A. Smith  
 (Senior Technician)  
 Date of Issue: 11/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## 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 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** imported  
**Material:** Silty CLAY

## Sample Data

Sample ID	S22DS-00026				
Field Sample ID	42				
Date Tested	7/01/2022				
Location	E 357036				
	N 5777724				
	EL. 8.96				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.04				
Peak Converted Wet Density (t/m³)	2.04				
Compactive Effort	Standard				
Moisture Variation (%)	1.5 dry				
Hilf Density Ratio (%)	<b>100.0</b>				

## 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:W22DS00018**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 14/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 96%  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty Clay

## Sample Data

Sample ID	S22DS-00055	S22DS-00056	S22DS-00057		
Field Sample ID	1	2	3		
Date Tested	10/01/2022	10/01/2022	10/01/2022		
E:	357015	357001	357021		
N:	5777884	5777870	5778027		
RL / Layer:	9.110 / -	9.017 / -	9.485 / -		
Lot:	1012	1013	1001		
Other:	-	-	-		

## Field and Laboratory Data

Depth of Test (mm)	175	175	175		
Depth of Layer (mm)	200	200	200		
Field Wet Density (t/m³)	2.06	2.00	2.08		
Peak Converted Wet Density (t/m³)	2.13	2.10	2.11		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.0	0.5 dry	0.0		
Hilf Density Ratio (%)	<b>96.5</b>	<b>95.5</b>	<b>98.5</b>		

## 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:W22DS00021**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 14/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty Clay

## Sample Data

Sample ID	S22DS-00071				
Field Sample ID	1				
Date Tested	10/01/2022				
E:	357028				
N:	5778023				
RL / Layer:	9.144 / 3				
Lot:	1001				
Other:	-				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
Field Wet Density (t/m³)	1.99				
Peak Converted Wet Density (t/m³)	2.12				
Compactive Effort	Standard				
Moisture Variation (%)	5.0 wet				
Hilf Density Ratio (%)	<b>94.0</b>				

## 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:W22DS00030**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 14/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## 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 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy CLAY

## Sample Data

Sample ID	S22DS-00100	S22DS-00101	S22DS-00102	S22DS-00103		
Field Sample ID	1	2	3	4		
Date Tested	11/01/2022	11/01/2022	11/01/2022	11/01/2022		
Location	E 357080	E 357021	E 357027	E 357052		
	N 5777824	N 5778027	N 577796	N 5777809		
	EL. 7.63	EL. 9.504	EL. 9.574	EL. 7.80		
	Lot 1022	Lot 1001	Lot 1003	Lot 1021		
	Retest of S22DS-00071					

## Field and Laboratory Data

Depth of Test (mm)	175	175	175	175		
Depth of Layer (mm)	200	200	200	200		
Field Wet Density (t/m³)	2.05	2.06	2.03	2.09		
Peak Converted Wet Density (t/m³)	2.10	2.07	2.08	2.14		
Compactive Effort	Standard	Standard	Standard	Standard		
Moisture Variation (%)	0.0	0.0	0.5 wet	0.0		
Hilf Density Ratio (%)	<b>98.0</b>	<b>99.0</b>	<b>97.5</b>	<b>98.0</b>		

## 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:W22DS00037**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 14/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## 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 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Sandy CLAY

## Sample Data

Sample ID	S22DS-00111				
Field Sample ID	1				
Date Tested	12/01/2022				
Location	E 357107.54				
	N 5777806.94				
	EL. 7.75				
	Lot 1023				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
Field Wet Density (t/m³)	2.06				
Peak Converted Wet Density (t/m³)	2.10				
Compactive Effort	Standard				
Moisture Variation (%)	0.0				
Hilf Density Ratio (%)	<b>98.0</b>				

## 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:W22DS00070**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



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

Accreditation Number: 12719  
 Site Number: 12712  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S22DS-00240				
Field Sample ID	1				
Date Tested	18/01/2022				
Lot No:	1026				
E:	357156				
N:	5777788				
RL:	6.967				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
Field Wet Density (t/m <sup>3</sup> )	2.06				
Peak Converted Wet Density (t/m <sup>3</sup> )	2.09				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 dry				
Hilf Density Ratio (%)	<b>98.5</b>				

## 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:W22DS00117**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 24/01/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S22DS-00425				
Field Sample ID	1				
Date Tested	22/01/2022				
Lot No:	1027				
E:	35180.37				
N:	5777810.94				
Elv:	7.50				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
Field Wet Density (t/m³)	2.13				
Peak Converted Wet Density (t/m³)	2.16				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 wet				
Hilf Density Ratio (%)	<b>99.0</b>				

## 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:W22DS00129**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 25/01/2022

Accreditation Number: 12719  
 Site Number: 12712  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S22DS-00453				
Field Sample ID	1				
Date Tested	24/01/2022				
Lot No:	1025				
E:	357148.39				
N:	5777802.49				
Elv:	8.43				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
Field Wet Density (t/m³)	2.15				
Peak Converted Wet Density (t/m³)	2.02				
Compactive Effort	Standard				
Moisture Variation (%)	2.0 dry				
Hilf Density Ratio (%)	<b>107.0</b>				

## 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:W22DS00206**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 8/02/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S22DS-00717				
Field Sample ID	1				
Date Tested	3/02/2022				
Lot No:	1017				
E:	357002				
N:	5777833				
Elv:	8.691				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.09				
Peak Converted Wet Density (t/m³)	2.05				
Compactive Effort	Standard				
Moisture Variation (%)	2.5 wet				
Hilf Density Ratio (%)	<b>102.0</b>				

## 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:W22DS00209**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712

Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 4/02/2022

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

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

## Sample Data

Sample ID	S22DS-00722	S22DS-00723			
Field Sample ID	1	2			
Date Tested	2/02/2022	2/02/2022			
Lot No:	1018	1019			
E:	357011	357030			
N:	5777827	5777832			
Elv:	8.266	8.580			

## Field and Laboratory Data

Depth of Test (mm)	175	175			
Depth of Layer (mm)	200	200			
Field Wet Density (t/m <sup>3</sup> )	2.17	2.07			
Peak Converted Wet Density (t/m <sup>3</sup> )	2.12	2.05			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.0	0.0			
<b>Hilf Density Ratio (%)</b>	<b>102.5</b>	<b>101.0</b>			

## 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:W22DS00261**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 11/02/2022

Accreditation Number: 12719  
 Site Number: 12712

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Clay

## Sample Data

Sample ID	S22DS-00874				
Field Sample ID	1				
Date Tested	9/02/2022				
Lot No:	1027				
E:	357176				
N:	5777799				
Elv:	8.265				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.08				
Peak Converted Wet Density (t/m³)	2.11				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 dry				
Hilf Density Ratio (%)	<b>99.0</b>				

## 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:W22DS00326**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 16/02/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Clay

## Sample Data

Sample ID	S22DS-01028	S22DS-01029	S22DS-01030		
Field Sample ID	1	2	3		
Date Tested	14/02/2022	14/02/2022	14/02/2022		
Lot No:	1030	1031	1031		
E:	357230	357253	357259		
N:	5777780	5777801	5777785		
Elv:	7.266	6.944	7.019		

## Field and Laboratory Data

Depth of Test (mm)	175	175	175		
Depth of Layer (mm)	200	200	200		
AS Sieve Size (mm)	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0		
Field Wet Density (t/m³)	2.10	2.00	2.05		
Peak Converted Wet Density (t/m³)	2.11	2.06	2.03		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.5 dry	1.0 dry	0.5 dry		
Hilf Density Ratio (%)	<b>99.0</b>	<b>97.0</b>	<b>100.5</b>		

## 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:W22DS00335**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 15/02/2022

Accreditation Number: 12719  
 Site Number: 12712  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** CLAY

## Sample Data

Sample ID	S22DS-01060				
Field Sample ID	1				
Date Tested	11/02/2022				
Lot No:	1031				
E:	357250				
N:	5777796				
Elv:	6.761				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
Field Wet Density (t/m³)	1.99				
Peak Converted Wet Density (t/m³)	2.11				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 dry				
<b>Hilf Density Ratio (%)</b>	<b>94.5</b>				

## 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:W22DS00366**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712

Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 18/02/2022

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Clay

## Sample Data

Sample ID	S22DS-01169	S22DS-01170	S22DS-01171	S22DS-01172	S22DS-01173	S22DS-01174
Field Sample ID	1	2	3	4	5	6
Date Tested	16/02/2022	16/02/2022	16/02/2022	16/02/2022	16/02/2022	16/02/2022
Lot No:	1025	Road Way	Road Way	1028	Road Way	Road Way
E:	357156	357167	357184	357215	357724	357251
N:	5777816	5777829	5777831	5777807	5777824	5777812
Elv:	8.8888	8.861	8.545	7.825	7.691	7.490

## Field and Laboratory Data

Depth of Test (mm)	175	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0	0
Field Wet Density (t/m³)	2.03	2.06	2.10	2.08	2.05	2.02
Peak Converted Wet Density (t/m³)	2.02	2.09	2.11	2.07	2.02	2.03
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	1.5 dry	0.5 dry	0.0	0.5 dry	1.5 dry	2.0 dry
Hilf Density Ratio (%)	<b>100.5</b>	<b>98.5</b>	<b>99.5</b>	<b>100.5</b>	<b>101.5</b>	<b>99.5</b>

## 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:W22DS00366**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 18/02/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Clay

## Sample Data

Sample ID	S22DS-01175				
Field Sample ID	7				
Date Tested	16/02/2022				
Lot No:	1031				
E:	352750				
N:	5777799				
Elv:	6.744				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.13				
Peak Converted Wet Density (t/m³)	2.13				
Compactive Effort	Standard				
Moisture Variation (%)	0.0				
Hilf Density Ratio (%)	<b>100.0</b>				

## 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:W22DS00398**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712

Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 22/02/2022

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** CLAY

## Sample Data

Sample ID	S22DS-01255	S22DS-01256	S22DS-01257		
Field Sample ID	1	2	3		
Date Tested	21/02/2022	21/02/2022	21/02/2022		
Lot No:	1024	1026	1028		
E:	357118	357166	357206		
N:	5777820	5777804	5777803		
Elv:	8.797	8.609	7.931		

## Field and Laboratory Data

Depth of Test (mm)	175	175	175		
Depth of Layer (mm)	200	200	200		
AS Sieve Size (mm)	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0		
Field Wet Density (t/m <sup>3</sup> )	2.15	2.15	2.10		
Peak Converted Wet Density (t/m <sup>3</sup> )	2.06	2.03	2.03		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	2.5 dry	3.0 dry	1.0 dry		
Hilf Density Ratio (%)	<b>104.0</b>	<b>106.0</b>	<b>103.5</b>		

## 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:W22DS00416**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 24/02/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** CLAY

## Sample Data

Sample ID	S22DS-01355				
Field Sample ID	1				
Date Tested	22/02/2022				
Lot No:	1031				
E:	357252				
N:	5777790				
Elv:	7.437				

## Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.11				
Peak Converted Wet Density (t/m³)	2.16				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 wet				
Hilf Density Ratio (%)	<b>97.5</b>				

## 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:W22DS00587**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: J. Lamont  
 (Dandenong Laboratory Manager)  
 Date of Issue: 7/02/2023  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Imported  
**Material:** Gravelly CLAY

## Sample Data

Sample ID	S22DS-01905	S22DS-01906			
Field Sample ID	1	2			
Date Tested	11/03/2022	11/03/2022			
E:	357078	357238			
N:	5777739	5777750			
RL:	8.955	8.111			
Lot:	848	818			
Other:	-	-			

## 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 Wet Density (t/m³)	2.15	2.07			
Peak Converted Wet Density (t/m³)	2.10	2.07			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.5 dry	1.5 dry			
Hilf Density Ratio (%)	<b>102.5</b>	<b>100.0</b>			

## 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:W22DS00658**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Robinson  
 (Team Leader)  
 Date of Issue: 22/03/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:** Clyde North  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** CLAY

## Sample Data

Sample ID	S22DS-02160	S22DS-02161	S22DS-02162		
Field Sample ID	1	2	3		
Date Tested	21/03/2022	21/03/2022	21/03/2022		
Lot No:	1020	1022	1026		
E:	357048	357090	357158		
N:	5777831	5777824	5777810		
RL	8.854	8.888	8.645		

## Field and Laboratory Data

Depth of Test (mm)	175	175	175		
Depth of Layer (mm)	200	200	200		
Field Wet Density (t/m³)	2.08	2.09	2.20		
Peak Converted Wet Density (t/m³)	2.07	2.05	2.07		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.0	1.5 dry	1.5 dry		
Hilf Density Ratio (%)	<b>100.5</b>	<b>102.5</b>	<b>106.0</b>		

## 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:W22DS01938**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 16/03/2023  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.2.1.1, AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Clay

## Sample Data

Sample ID	S22DS-07717	S22DS-07718	S22DS-07719	S22DS-07720
Field Sample ID	1	2	3	4
Date Tested	29/09/2022	29/09/2022	29/09/2022	29/09/2022
Time Tested	09:00	09:15	12:20	12:30
E:	357273.048	357280.912	357284.669	357291.132
N:	5777633.840	5777865.498	5777903.392	5777947.462
EL:	6.986	7.100	7.086	7.304

## Field and Laboratory Data

Depth of Test (mm)	175	175	175	175
Depth of Layer (mm)	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0
Field Moisture Content (%)	17.6	12.8	13.2	14.6
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/m <sup>3</sup> )	2.04	2.13	2.16	2.11
Field Dry Density (t/m <sup>3</sup> )	1.73	1.89	1.91	1.84
Peak Converted Wet Density (t/m <sup>3</sup> )	2.15	2.12	2.12	2.14
Optimum Moisture Content (%)	15.5	13.0	13.0	14.5
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Ratio (%)	115.0	97.0	100.5	101.0
Moisture Variation (%)	2.5 wet	0.5 dry	0.0	0.0
Hilf Density Ratio (%)	<b>95.0</b>	<b>100.5</b>	<b>102.0</b>	<b>98.5</b>

## 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:W22DS01953**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 19/10/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 98% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.2.1.1, AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty Clay

## Sample Data

Sample ID	S22DS-07764	S22DS-07765	S22DS-07766		
Field Sample ID	1	2	3		
Date Tested	30/09/2022	30/09/2022	30/09/2022		
Time Tested	09:30	09:45	13:30		
E:	357278.700	357277.520	357288.563		
N:	5777845.760	5777879.331	5777918.437		
RL:	7.260	7.382	7.329		

## 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 (%)	11.7	13.8	13.2		
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1		
Field Wet Density (t/m <sup>3</sup> )	2.14	2.09	2.12		
Field Dry Density (t/m <sup>3</sup> )	1.92	1.84	1.87		
Peak Converted Wet Density (t/m <sup>3</sup> )	2.21	2.16	2.16		
Optimum Moisture Content (%)	11.5	13.5	13.0		
Compactive Effort	Standard	Standard	Standard		
Moisture Ratio (%)	101.0	103.5	100.0		
Moisture Variation (%)	0.0	0.5 wet	0.0		
Hilf Density Ratio (%)	<b>97.0</b>	<b>97.0</b>	<b>98.0</b>		

## 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:W22DS01994**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 19/10/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.2.1.1, AS 1289.5.7.1, RC 316.00  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty Clay

## Sample Data

Sample ID	S22DS-07918				
Field Sample ID	1				
Client Sample ID	79				
Date Tested	4/10/2022				
Time Tested	09:40				
E:	357290.014				
N:	5777959.101				
EL:	7.636				

## 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/m <sup>3</sup> )	2.03				
Field Dry Density (t/m <sup>3</sup> )	1.72				
Peak Converted Wet Density (t/m <sup>3</sup> )	2.12				
Optimum Moisture Content (%)	15.5				
Compactive Effort	Standard				
Moisture Ratio (%)	116.0				
Moisture Variation (%)	2.5 wet				
Hilf Density Ratio (%)	<b>95.5</b>				

## Statistical Data

Mean Density Ratio (Rd) %:

## 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:W22DS02192**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:** **CG Request No.:**  
**TRN:** **Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 16/11/2022  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.2.1.1, AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Clay

## Sample Data

Sample ID	S22DS-08761				
Field Sample ID	1				
Date Tested	8/11/2022				
Time Tested	14:30				
E:	3577294.170				
N:	5777980.151				
EL:	7112				

## Field and Laboratory Data

Depth of Test (mm)	225				
Depth of Layer (mm)	250				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Moisture Content (%)	18.0				
Field Moisture Content Method	AS 1289.2.1.1				
Field Wet Density (t/m <sup>3</sup> )	2.08				
Field Dry Density (t/m <sup>3</sup> )	1.76				
Peak Converted Wet Density (t/m <sup>3</sup> )	2.09				
Optimum Moisture Content (%)	16.0				
Compactive Effort	Standard				
Moisture Ratio (%)	111.5				
Moisture Variation (%)	2.0 wet				
Hilf Density Ratio (%)	<b>99.5</b>				

## 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:W22DS02209**


**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing



Accreditation Number: 12719  
 Site Number: 12712

Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 16/11/2022

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.2.1.1, AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Sandy Clay

## Sample Data

Sample ID	S22DS-08843	S22DS-08844	S22DS-08845		
Field Sample ID	1	2	3		
Date Tested	9/11/2022	9/11/2022	9/11/2022		
Time Tested	08:30	09:46	12:05		
E:	357297	357296	357298		
N:	5777974	5777992	5777984		
EL:	7.355m	7.764m	7.859m		

## Field and Laboratory Data

Depth of Test (mm)	225	225	225		
Depth of Layer (mm)	250	250	250		
AS Sieve Size (mm)	19.0	19.0	19.0		
Oversize Wet (%)	0	0	0		
Field Wet Density (t/m <sup>3</sup> )	2.10	2.07	2.15		
Peak Converted Wet Density (t/m <sup>3</sup> )	2.10	2.10	2.14		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.5 wet	0.5 wet	0.0		
Hilf Density Ratio (%)	<b>100.0</b>	<b>98.5</b>	<b>100.5</b>		

## 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:W23DS00396**

**Issue No: 1**

# HILF Density Ratio Report

**Client:** Greenridge Properties Pty Ltd  
**Address:** PO Box 3131  
 AUBURN VIC 3123  
**Project:** Riverfield Estate - Stage 10  
**Project No.:** 1016363.010  
**Order No.:**  
**TRN:**

**CG Request No.:**  
**Lot No.:**

Accredited for compliance with ISO/IEC 17025  
 - Testing

Accreditation Number: 12719  
 Site Number: 12712  
 Approved Signatory: M. Longfield  
 (Senior Technician)  
 Date of Issue: 16/03/2023  
 THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

## Sample Details

**Location:**  
**Client Request ID:**  
**Specification Requirements:** Minimum Hilf Density Ratio of 95% (+- 3% of OMC)  
**Field Test procedures:** AS 1289.5.8.1  
**Laboratory Test procedures:** AS 1289.2.1.1, AS 1289.5.7.1  
**Sampling Method:** AS1289.1.2.1 Clause 6.4 (b)  
**Source:** Onsite  
**Material:** Silty Clay

## Sample Data

Sample ID	S23DS-01356	S23DS-01357	S23DS-01358		
Field Sample ID	1	2	3		
Date Tested	15/02/2023	15/02/2023	15/02/2023		
Time Tested	14:00	14:20	14:40		
E:	357027	357020	357018		
N:	5777965	5777938	5777916		
Lot:	1006	1008	1010		

## 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 (%)	14.0	9.8	10.0		
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1		
Field Wet Density (t/m <sup>3</sup> )	2.12	2.17	2.19		
Field Dry Density (t/m <sup>3</sup> )	1.86	1.97	1.99		
Peak Converted Wet Density (t/m <sup>3</sup> )	2.09	2.08	2.16		
Optimum Moisture Content (%)	16.0	12.5	12.5		
Compactive Effort	Standard	Standard	Standard		
Moisture Ratio (%)	88.5	78.0	81.0		
Moisture Variation (%)	2.0 dry	3.0 dry	2.5 dry		
Hilf Density Ratio (%)	<b>101.5</b>	<b>104.0</b>	<b>101.5</b>		

## Comments

## **Appendix D : Controlled Fill Certificate**

---



## CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

**PROJECT** : Riverfield Estate Stage 10  
Lots 1001 to 1031

**Chadwick Geotechnics REF:** 1016363.10v1

**CLIENT** : Brown Property Group Pty Ltd  
PO Box 4136  
DANDENONG SOUTH VIC 3164

**DATE:** 14 April 2023

### SUMMARY

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

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

### LIMITATIONS

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

This report is based on the conditions present and factors affecting the soil at the time of inspection (02 June 2021 and was completed on 15 February 2023). No responsibility or liability will be accepted and Chadwick Geotechnics Pty Ltd is indemnified to the full extent permitted by law in respect of the use of this Certificate where there has been a change in the nature of the project, or in the site conditions since the site testing.

### CHADWICK GEOTECHNICS PTY LTD

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

**Robert Barden**  
Project Manager

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

**Timothy Chadwick**  
Project Director

© Chadwick Geotechnics Pty Ltd.

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise other than in accordance with the limitations and for the purpose provided for above.

[www.chadwickgeotechnics.com.au](http://www.chadwickgeotechnics.com.au)



