



REPORT

Level 1 Geotechnical Testing and Inspection Authority Services

**Riverfield Estate Stage 11
Lots 1101 to 1150**

Prepared for:

Brown Property Group Pty Ltd

05/05/2023

Our Ref: 1016363.011.v1

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Document Control

Title: Level One Inspection and testing Services.					
Date	Version	Description	Prepared by:	Reviewed by:	Authorised by
05 May 2023	V1	1016363.011, Level One Report Riverfield Estate Stage 11	STPA & 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 11 of the Riverfield Estate in Clyde between 11 February 2021 and 26 April 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 11 site is located to the North of the Stage 9 site and East of the Stage 4 site.

The included works area is 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. The site 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 300mm 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
February 2021	11.
May 2021	13, 14, 21, 22, 24, 25.
June 2021	3.
September 2021	9, 14, 15, 17.
October 2021	13.
November 2021	23, 24, 25, 26, 27, 29.
December 2021	2, 3, 6, 7, 16, 17, 18.
January 2022	6, 11, 12.
February 2022	21, 22, 25.
April 2023	26.

2.5 Included Areas

This report is applicable to material placed by the contractor on the residential lots within Riverfield Estate Stage 11, 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 1101 to Lot 1150

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 site materials.

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

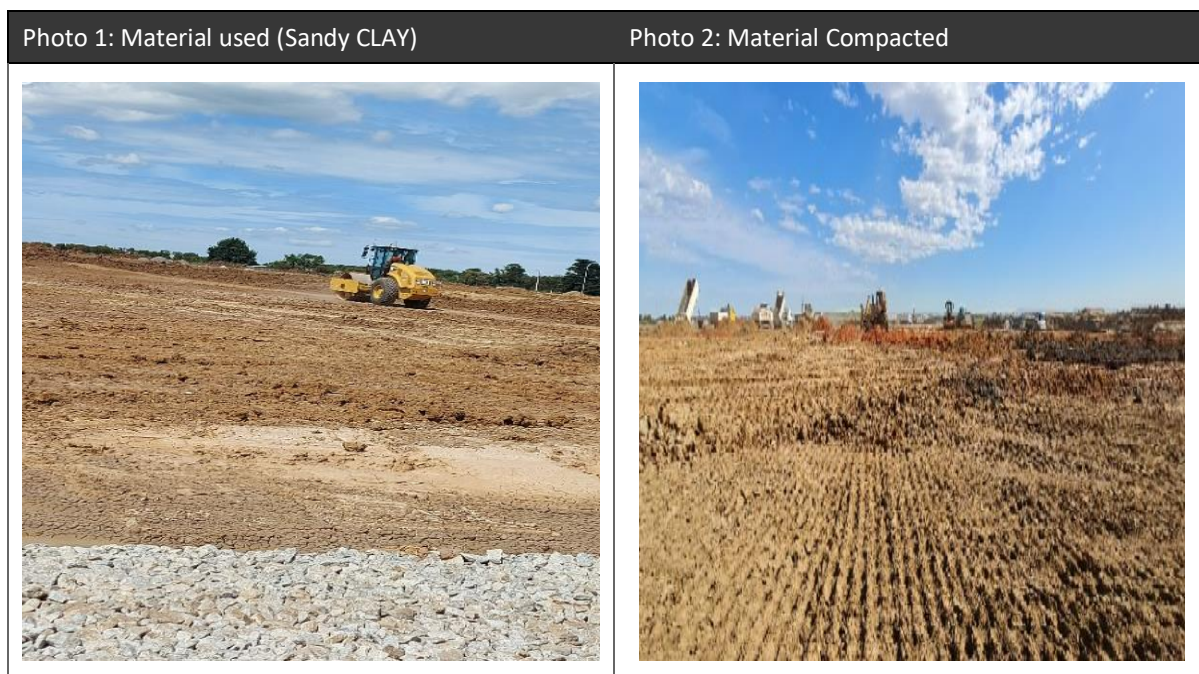
The material was deemed as being derived from natural soils. The soil is considered as 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007.

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 photographs of typical materials used during construction.

Figure 3.1: Photographs of the material used on site



3.3 Subgrade Assessment / Proof Roll

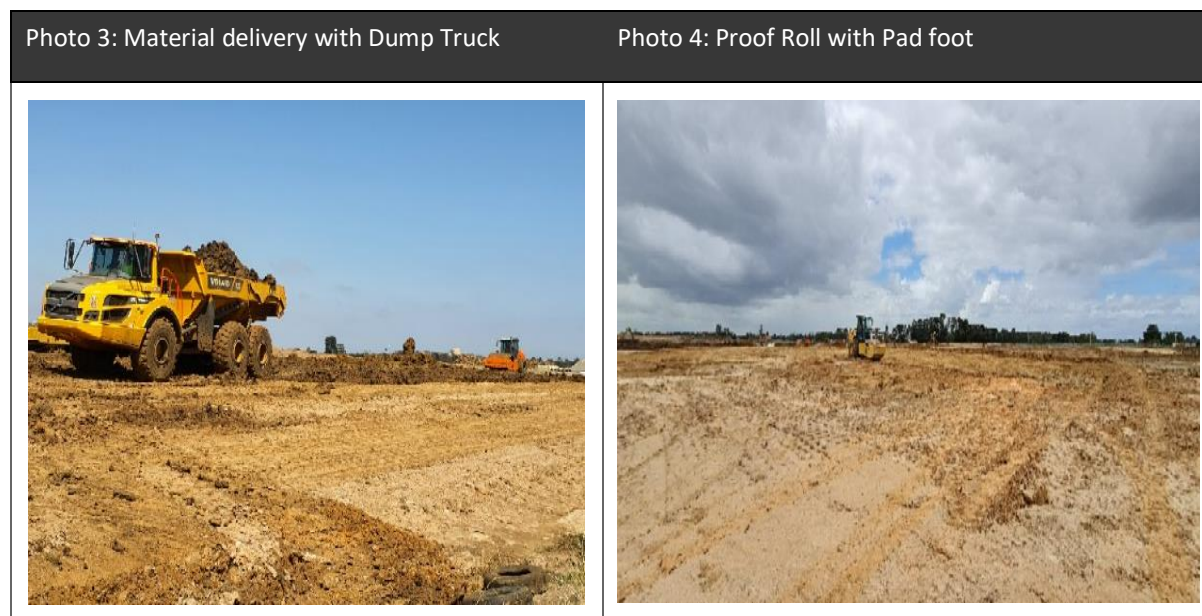
The Subgrade of the site was progressively assessed during the period Chadwick Geotechnics personnel were on site.

Subgrade assessments were conducted following the removal the natural grasses, topsoil and unsuitable materials at the site.

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

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

Figure 3.2: Site photographs



3.4 Engineered Fill Construction

All fill material was brought by dump trucks and road trucks from 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.

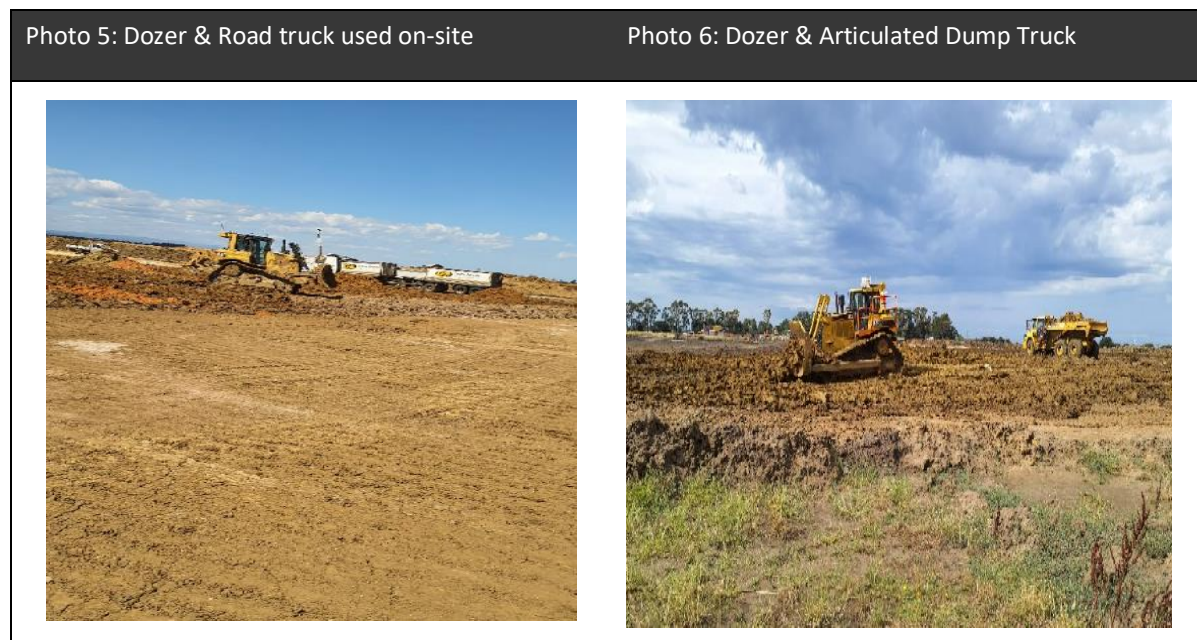
The following machinery was on site during earthworks.

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 Trucks & Road Trucks

Below 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:

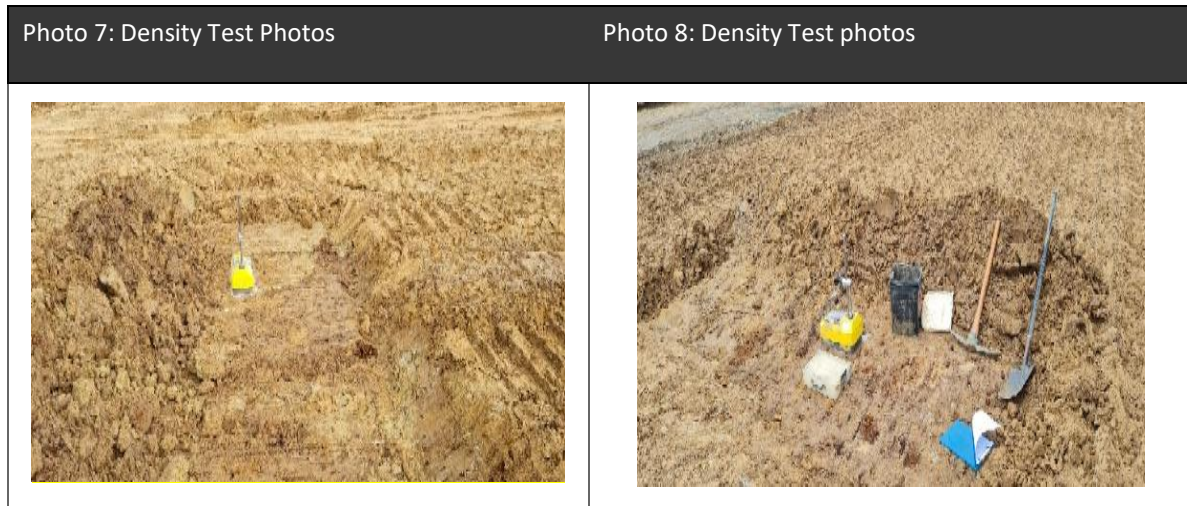
- 1 test per material type per layer per 2500m² or 1 test per 500m³ distributed reasonably evenly or 3 tests per lot – whichever requires the most tests in accordance with Type 1 Earthworks (large scale operations) as defined in Table 8.1 of the AS 3798-2007;
- Subgrade to be proof rolled in presence 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).

Seventy-Six (76) tests were performed during the filling process across the site. Eight (8) of the tests did not achieve the required density and or moisture ratio initially. The failed areas were reworked and retested and the retests returned passing density and moisture test results.

A summary table of HILF density tests is provided in **Appendix B** and the laboratory test reports are provided in **Appendix C**.

Below, photographs of field density testing conducted on site.

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 11 February 2021 and 26 April 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:



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Robert Barden
Project Manager

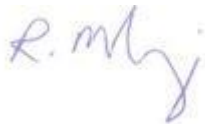
Authorised for Chadwick Geotechnics Pty Ltd by:



.....

Timothy Chadwick
Project Director

Report reviewed by:



.....

Robert McKenzie
Senior Associate Geotechnical Engineer
PE0005222

Appendix A : Location Plan

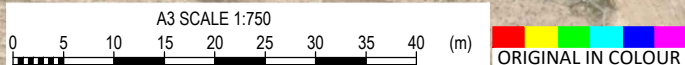


LEGEND

S22DS-01254
HILF DENSITY TEST LOCATION



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



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PROJECT No. 1016363			CLIENT GREENRIDGE PROPERTIES PTY LTD		
DESIGNED	STPA	Apr.23	PROJECT RIVERFIELD ESTATE STAGE 11		
DRAWN	KMJA	Apr.23	TITLE LEVEL ONE HILF DENSITY TESTING		
CHECKED			HILF DENSITY TEST LOCATION PLAN		
APPROVED			SCALE (A3) 1:750		
DATE			FIG No. 1016363-F01		
			REV 1		

UNDER REVISION 1

Appendix B : Hilf Density Test Summary



Riverfield Estate Stage 11 HILF Density Testing Field Summary

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

www.chadwickgeotechnics.com.au



Report No	Sample No	Date	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W21DS00536	S21DS-02206	11/02/2021	356868	5777916	8.94	99.5	0.5 wet	Pass	
HDR:W21DS01760	S21DS-06547	13/05/2021	356890	5778000		96	2 wet	Pass	
HDR:W21DS01760	S21DS-06548	13/05/2021	356882	5777975		89	2 dry	Fail	See Retest S21DS-6924
HDR:W21DS01764	S21DS-06556	14/05/2021	356884	5777948		93.5	2.5 wet	Fail	See Retest S21DS- 6925
HDR:W21DS01864	S21DS-06924	24/05/2021	356884	5777974		99	0 wet	Pass	Retest of S21DS-06548
HDR:W21DS01864	S21DS-06925	24/05/2021	356889	5777948		99	0.5 wet	Pass	Retest of S21DS-6556
HDR:W21DS01878	S21DS-06962	21/05/2021	356914	5777998	9.3	99	0 wet	Pass	
HDR:W21DS01878	S21DS-06963	21/05/2021	356915	5778021	9.38	97	0.5 wet	Pass	
HDR:W21DS01878	S21DS-06964	21/05/2021	356918	5778042	9.44	101	0 wet	Pass	
HDR:W21DS01879	S21DS-06965	22/05/2021	356900	5777975	9.55	99.5	0.5 wet	Pass	
HDR:W21DS01879	S21DS-06966	22/05/2021	356896	5777952	9.58	99.5	0 wet	Pass	
HDR:W21DS01879	S21DS-06967	22/05/2021	356894	5777929	9.4	101.5	0 wet	Pass	
HDR:W21DS01904	S21DS-07044	25/05/2021	356893	5777881	9.29	95	0 wet	Pass	
HDR:W21DS01904	S21DS-07045	25/05/2021	356901	5777923	9.31	99.5	0.5 wet	Pass	
HDR:W21DS01904	S21DS-07046	25/05/2021	356906	5777945	9.33	99	1.5 wet	Pass	
HDR:W21DS01904	S21DS-07047	25/05/2021	356909	5777973	9.74	97	0.5 wet	Pass	
HDR:W21DS02063	S21DS-07569	3/06/2021	356932	5777996	9.14	99	0.5 wet	Pass	
HDR:W21DS02063	S21DS-07570	3/06/2021	356926	5777944	8.88	95	0.5 wet	Pass	
HDR:W21DS02063	S21DS-07571	3/06/2021	356912	5777886	8.99	102	5.5 wet	Fail	See Retest S21DS-13129
HDR:W21DS02063	S21DS-07572	3/06/2021	356935	5777853	8.47	97.5	2.5 wet	Pass	
HDR:W21DS02956	S21DS-11040	9/09/2021	357009	5778040	8.764 / -	99.5	0.5 wet	Pass	
HDR:W21DS02985	S21DS-11151	14/09/2021	357013	5778026	8.833	97.5	2 wet	Pass	
HDR:W21DS03000	S21DS-11186	15/09/2021	356952	5778046	9.109	101	0 wet	Pass	
HDR:W21DS03028	S21DS-11265	17/09/2021	356970	5778042	9.422	97.5	2.5 wet	Pass	



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Report No	Sample No	Date	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W21DS03183	S21DS-11745	13/10/2021	356924	5777930	9.022	98	0 wet	Pass	
HDR:W21DS03184	S21DS-11746	13/10/2021	356950	5777962	9.024	102.5	0 dry	Pass	
HDR:W21DS03467	S21DS-12767	23/11/2021	356895	5777846	09.20 / 1	104	2 dry	Pass	
HDR:W21DS03475	S21DS-12797	24/11/2021	356950	5777846	8.675	100.5	0	Pass	
HDR:W21DS03475	S21DS-12798	24/11/2021	356921	5777844	8.704	105.5	0	Pass	
HDR:W21DS03493	S21DS-12885	25/11/2021	356867	5777843	9.285 / 1	96.5	2.5 wet	Pass	
HDR:W21DS03493	S21DS-12886	25/11/2021	356880	5777842	9.260 / 4	104	0.5 dry	Pass	
HDR:W21DS03493	S21DS-12887	25/11/2021	356903	5777834	9.020 / 1	98	0	Pass	
HDR:W21DS03493	S21DS-12888	25/11/2021	356935	5777833	8.636	99.5	1.5 dry	Pass	
HDR:W21DS03502	S21DS-12918	26/11/2021	356960	5777826	8.415 / FSL-0.8m	99	0.5 wet	Pass	
HDR:W21DS03502	S21DS-12919	26/11/2021	356974	5777823	8.329 / FSL-0.9m	104	0 dry	Pass	
HDR:W21DS03502	S21DS-12920	26/11/2021	356990	5777831	8.365 / FSL-0.7m	100	2.5 dry	Pass	
HDR:W21DS03502	S21DS-12921	26/11/2021	356901	5777827	8.190 / FSL-0.9m	102	2.5 dry	Pass	
HDR:W21DS03502	S21DS-12922	26/11/2021	357018	5777812	8.173 / 2	97.5	2.5 dry	Pass	
HDR:W21DS03502	S21DS-12923	26/11/2021	57004	5777818	8.260 / 2	99	0.5 dry	Pass	
HDR:W21DS03503	S21DS-12924	27/11/2021	356924	5777847	9.02 / 1	96.5	0.5 dry	Pass	
HDR:W21DS03503	S21DS-12930	27/11/2021	356914	5777837	9.21 / 1	103.5	2 dry	Pass	
HDR:W21DS03532	S21DS-13003	29/11/2021	356935	5777848	8.921	99	0 dry	Pass	
HDR:W21DS03532	S21DS-13004	29/11/2021	356962	5777837	8.85	98	0 dry	Pass	
HDR:W21DS03563	S21DS-13129	2/12/2021	356947	5777890	9.086	100.5	0.5 wet	Pass	Retest of S21DS-07571
HDR:W21DS03564	S21DS-13130	3/12/2021	356993	5777998		101	2.5 dry	Pass	
HDR:W21DS03564	S21DS-13131	3/12/2021	356977	5777946		100.5	2.5 dry	Pass	
HDR:W21DS03564	S21DS-13132	3/12/2021	356968	5777982		101.5	2 dry	Pass	
HDR:W21DS03601	S21DS-13271	6/12/2021	356988	5777824	8.499	101.5	0.5 dry	Pass	



Riverfield Estate Stage 11 HILF Density Testing Field Summary

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Report No	Sample No	Date	Easting	Northing	Layer/RL	Density Ratio	Moisture Variation	Pass / Fail	Comments (Retest No) Compliance test taken ect
HDR:W21DS03602	S21DS-13272	6/12/2021	356999	5778016		97	1.5 dry	Pass	
HDR:W21DS03602	S21DS-13273	6/12/2021	356971	5778017		93	2 dry	Fail	See Retest S21DS-13630
HDR:W21DS03602	S21DS-13274	6/12/2021	356972	5777976		93.5	2 dry	Fail	See Retest S21DS-13629
HDR:W21DS03602	S21DS-13275	6/12/2021	356995	5777974		101.5	2.5 dry	Pass	
HDR:W21DS03610	S21DS-13293	7/12/2021	356974	5777905	9.032	97	2.5 wet	Pass	
HDR:W21DS03611	S21DS-13294	7/12/2021	356992	5777931		95	4 wet	Fail	See Retest S21DS-13628
HDR:W21DS03611	S21DS-13297	7/12/2021	357002	5778017		96	0.5 wet	Pass	
HDR:W21DS03707	S21DS-13627	16/12/2021	356950	5778038	8.987	92.5	0	Fail	See Retest S21DS-13670
HDR:W21DS03708	S21DS-13628	16/12/2021	356990	5777931		98	0 wet	Pass	Retest of S21DS-13294
HDR:W21DS03708	S21DS-13629	16/12/2021	356982	5777967		104	0 dry	Pass	Retest of S21DS-13274
HDR:W21DS03708	S21DS-13630	16/12/2021	356972	5778017		101.5	0 dry	Pass	Retest of S21DS-13273
HDR:W21DS03726	S21DS-13670	18/12/2021	356980	5777878	8.953	99.5	0.5 dry	Pass	Retest of S21DS-13627
HDR:W21DS03726	S21DS-13671	18/12/2021	356972	5777881	9.076	99	0.5 wet	Pass	
HDR:W21DS03726	S21DS-13672	18/12/2021	356990	5777922	9.175	99.5	1.5 wet	Pass	
HDR:W21DS03727	S21DS-13673	18/12/2021	356992	5777952		97	0.5 wet	Pass	
HDR:W21DS03728	S21DS-13674	17/12/2021	357000	5777984		99	0.5 dry	Pass	
HDR:W22DS00005	S22DS-00019	6/01/2022	357001	5777876		97.5	0.5 wet	Pass	
HDR:W22DS00005	S22DS-00020	6/01/2022	357004	5777883		101	2 dry	Pass	
HDR:W22DS00032	S22DS-00104	11/01/2022	357005	5778023	9.511	93.5	1.5 dry	Fail	See Retest S22DS-00110
HDR:W22DS00036	S22DS-00110	12/01/2022	357009	5778022	9.61	100	2.5 dry	Pass	Retest of S22DS-00104
HDR:W22DS00397	S22DS-01254	21/02/2022	356990	5777952	9.377	96	0.5 dry	Pass	
HDR:W22DS00417	S22DS-01356	22/02/2022	356949	5778018	9.575	101	0 wet	Pass	
HDR:W22DS00417	S22DS-01357	22/02/2022	356962	5778001	9.566	101	0.5 wet	Pass	
HDR:W22DS00417	S22DS-01358	22/02/2022	356935	5778024	9.899	101.5	0.5 wet	Pass	
HDR:W22DS00459	S22DS-01490	25/02/2022	356988	5778005	9.868	99.5	0.5 wet	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:W21DS00536

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 3
Project No.: 1016363.3000
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
 - Testing



Accreditation Number 12719
 12712
 Approved Signatory: J. A. Smith
 (Senior Technician)
 Date of Issue: 3/03/2021

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: Onsite
Material: CLAY

Sample Data

Sample ID	S21DS-02202	S21DS-02203	S21DS-02204	S21DS-02205	S21DS-02206
Field Sample ID	1	2	3	4	5
Date Tested	11/02/2021	11/02/2021	11/02/2021	11/02/2021	11/02/2021
E:	357001.6	357020.2	357005.6	356853.4	356868.0
N:	5777531.9	5777537.2	5777550.4	5777885.5	5777915.8
Elv:	7.63	7.86	8.19	9.02	8.94

Field and Laboratory Data

Depth of Test (mm)	175	175	175	175	175
Depth of Layer (mm)	200	200	200	200	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0	0
Field Wet Density (t/m ³)	2.04	2.19	2.11	1.97	2.10
Peak Converted Wet Density (t/m ³)	2.02	1.96	2.16	2.02	2.11
Compactive Effort	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	5.0 wet	6.0 wet	0.0	2.0 wet	0.5 wet
Hilf Density Ratio (%)	101.0	112.0	97.5	98.0	99.5

Comments



Dandenong South
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Report No: HDR:W21DS01760

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 1
Project No.: 1016363.1000
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: 14/05/2021
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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: Onsite
Material: CLAY

Sample Data

Sample ID	S21DS-06547	S21DS-06548			
Field Sample ID	1	2			
Date Tested	13/05/2021	13/05/2021			
Location	E 356890	E 356882			
	N 5778000	N 5777975			

Field and Laboratory Data

Depth of Test (mm)	175	175			
Depth of Layer (mm)	200	200			
Field Wet Density (t/m ³)	1.86	1.85			
Peak Converted Wet Density (t/m ³)	1.94	2.08			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	2.0 wet	2.0 dry			
Hilf Density Ratio (%)	96.0	89.0			

Comments



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Report No: HDR:W21DS01764


Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield - Stage 6
Project No.: 1016363.006
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: 17/05/2021

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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	S21DS-06555	S21DS-06556			
Field Sample ID	1	2			
Date Tested	14/05/2021	14/05/2021			
E:	356886	356884			
N:	5777796	5777948			

Field and Laboratory Data

Depth of Test (mm)	175	175			
Depth of Layer (mm)	200	200			
Field Wet Density (t/m ³)	2.05	1.85			
Peak Converted Wet Density (t/m ³)	2.02	1.97			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	2.5 wet	2.5 wet			
Hilf Density Ratio (%)	102.0	93.5			

Comments



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Report No: HDR:W21DS01864


Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield - Stage 6
Project No.: 1016363.006
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: 16/06/2021
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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-06923	S21DS-06924	S21DS-06925	S21DS-06926
Field Sample ID	1	2	3	4
Date Tested	24/05/2021	24/05/2021	24/05/2021	24/05/2021
E:	245801	356884	356889	356915
N:	5778057	5777974	5777948	5778028
EL:	9.86	9.51	Retest	9.91

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 ³)	2.11	2.13	2.13	2.07
Peak Converted Wet Density (t/m ³)	2.14	2.16	2.15	2.16
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.5 wet	0.0	0.5 wet	0.5 wet
Hilf Density Ratio (%)	98.5	99.0	99.0	96.0

Comments



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Report No: HDR:W21DS01878

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: 16/06/2021
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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-06962	S21DS-06963	S21DS-06964			
Field Sample ID	1	2	3			
Date Tested	21/05/2021	21/05/2021	21/05/2021			
E:	356914	356915	356918			
N:	5777998	5778021	5778042			
RL:	9.30	9.38	9.44			

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)	2.07	2.09	2.10			
Peak Converted Wet Density (t/m³)	2.09	2.15	2.08			
Compactive Effort	Standard	Standard	Standard			
Moisture Variation (%)	0.0	0.5 wet	0.0			
Hilf Density Ratio (%)	99.0	97.0	101.0			

Comments



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Report No: HDR:W21DS01879

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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: 16/06/2021
 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-06965	S21DS-06966	S21DS-06967		
Field Sample ID	1	2	3		
Date Tested	22/05/2021	22/05/2021	22/05/2021		
E:	356900	56896	356894		
N:	5777975	5777952	5777929		
RL:	9.55	9.58	9.40		

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)	2.15	2.14	2.06		
Peak Converted Wet Density (t/m³)	2.16	2.15	2.03		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.5 wet	0.0	0.0		
Hilf Density Ratio (%)	99.5	99.5	101.5		

Comments



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Report No: HDR:W21DS01904


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
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Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Longfield
 (Senior Technician)
 Date of Issue: 16/06/2021
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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-07044	S21DS-07045	S21DS-07046	S21DS-07047
Field Sample ID	1	2	3	4
Date Tested	25/05/2021	25/05/2021	25/05/2021	25/05/2021
E:	356893	356901	356906	356909
N:	5777881	5777923	5777945	5777973
EL:	9.29	9.31	9.33	9.74

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)	1.95	2.09	2.10	2.05
Peak Converted Wet Density (t/m³)	2.05	2.10	2.12	2.10
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.0	0.5 wet	1.5 wet	0.5 wet
Hilf Density Ratio (%)	95.0	99.5	99.0	97.0

Comments



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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
 Approved Signatory: M. Longfield
 (Senior Technician)
 Date of Issue: 16/06/2021
 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-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/m ³)	2.08	2.05	2.09	2.03
Peak Converted Wet Density (t/m ³)	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
Hilf Density Ratio (%)	99.0	95.0	102.0	97.5

Comments



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Report No: HDR:W21DS02956


Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield - Stage 6
Project No.: 1016363.006
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: 13/09/2021
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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-11038	S21DS-11039	S21DS-11040	S21DS-11041
Field Sample ID	1	2	3	4
Date Tested	9/09/2021	9/09/2021	9/09/2021	9/09/2021
E:	356913.520	356588	357009	356564
N:	5778053.497	5778054	5778040	5778101
RL / Layer:	9.593 / -	10.425 / -	8.764 / -	10.736 / -
Lot:	634	537	-	549
Other:	-	-	-	-

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 ³)	2.12	1.97	2.03	1.98
Peak Converted Wet Density (t/m ³)	2.18	2.04	2.04	2.02
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.0	2.0 wet	0.5 wet	4.5 wet
Hilf Density Ratio (%)	97.0	96.5	99.5	98.0

Comments



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Report No: HDR:W21DS02985


Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 5
Project No.: 1016363.005
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: 16/09/2021

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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	S21DS-11149	S21DS-11150	S21DS-11151		
Field Sample ID	1	2	3		
Date Tested	14/09/2021	14/09/2021	14/09/2021		
E:	356549.087	357003	357013		
N:	5778070.610	5777913	5778026		
RL / Layer:	10.607	8.449	8..833		
Lot:	547	-	1233		

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)	2.00	2.02	2.02		
Peak Converted Wet Density (t/m³)	2.06	2.03	2.07		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	4.5 wet	3.0 wet	2.0 wet		
Hilf Density Ratio (%)	97.5	99.5	97.5		

Comments



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Report No: HDR:W21DS03000


Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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: 16/09/2021
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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	S21DS-11186	S21DS-11187	S21DS-11188	S21DS-11189	S21DS-11190	S21DS-11191
Field Sample ID	1	2	3	4	5	6
Date Tested	15/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021	15/09/2021
E:	356952	356526.760	356554.771	356551.708	356565	356588.902
N:	5778046	5778055.193	5778083.062	5778101.066	5778103	5778058.537
RL / Layer:	9.109	9.384	10.953	11.171	10.64	10.986
Lot:	502	-	548	-	-	537

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	1.98	2.02	1.99	1.97	2.00
Peak Converted Wet Density (t/m³)	2.01	2.04	2.02	2.05	2.04	1.96
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Variation (%)	0.0	2.0 wet	2.0 wet	1.5 wet	1.5 wet	1.0 wet
Hilf Density Ratio (%)	101.0	97.0	100.0	97.0	96.5	102.0

Comments



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Report No: HDR:W21DS03000

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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: 16/09/2021
 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: Clay

Sample Data

Sample ID	S21DS-11192	S21DS-11193			
Field Sample ID	7	8			
Date Tested	15/09/2021	15/09/2021			
E:	356548	356529.975			
N:	5778069	5778061.505			
RL / Layer:	10.61	9.723			
Lot:	547	-			

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)	2.01	2.00			
Peak Converted Wet Density (t/m³)	2.02	2.01			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	1.0 wet	0.5 wet			
Hilf Density Ratio (%)	99.5	99.5			

Comments



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Report No: HDR:W21DS03028

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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: 23/09/2021
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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	S21DS-11264	S21DS-11265			
Field Sample ID	1	2			
Date Tested	17/09/2021	17/09/2021			
E:	356554.607	356969.745			
N:	5778120.446	5778041.562			
RL / Layer:	9.511	9.422			

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)	2.01	1.98			
Peak Converted Wet Density (t/m³)	2.02	2.04			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	2.5 wet	2.5 wet			
Hilf Density Ratio (%)	99.5	97.5			

Comments



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Report No: HDR:W21DS03183

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: 18/10/2021

Accreditation Number: 12719
 Site Number: 12712
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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: Silty Clay

Sample Data

Sample ID	S21DS-11745				
Field Sample ID	1				
Date Tested	13/10/2021				
E:	356924				
N:	5777930				
RL:	9.022				
Lot:	1126				

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)	2.15				
Compactive Effort	Standard				
Moisture Variation (%)	0.0				
Hilf Density Ratio (%)	98.0				

Comments



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Report No: HDR:W21DS03184

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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: 18/10/2021
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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: Silty Clay

Sample Data

Sample ID	S21DS-11746				
Field Sample ID	1				
Date Tested	13/10/2021				
E:	356950				
N:	5777962				
RL:	9.024				
Lot:	1218				

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)	2.10				
Compactive Effort	Standard				
Moisture Variation (%)	0.0				
Hilf Density Ratio (%)	102.5				

Comments



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Report No: HDR:W21DS03467

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
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Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 1/12/2021
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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-12767				
Field Sample ID	1				
Date Tested	23/11/2021				
E:	356895				
N:	5777846				
RL / Layer:	09.20 / 1				
Lot:	1103				

Field and Laboratory Data

Depth of Test (mm)	125				
Depth of Layer (mm)	150				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.22				
Peak Converted Wet Density (t/m³)	2.13				
Compactive Effort	Standard				
Moisture Variation (%)	2.0 dry				
Hilf Density Ratio (%)	104.0				

Comments



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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



Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 1/12/2021
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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 (%)	100.5	105.5			

Comments



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Report No: HDR:W21DS03493

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.:**

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Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 1/12/2021
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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: Silty Clay

Sample Data

Sample ID	S21DS-12885	S21DS-12886	S21DS-12887	S21DS-12888
Field Sample ID	1	2	3	4
Date Tested	25/11/2021	25/11/2021	25/11/2021	25/11/2021
E:	356867	356880	356903	356935
N:	5777843	5777842	5777834	5777833
RL / Layer:	9.285 / 1	9.260 / 4	9.020 / 1	8.636 / 1 (FSL-0.45m)
Lot:	1101	1102	1104	1106

Field and Laboratory Data

Depth of Test (mm)	125	150	150	175
Depth of Layer (mm)	150	175	175	200
AS Sieve Size (mm)	19.0	19.0	19.0	19.0
Oversize Wet (%)	0	0	0	0
Field Wet Density (t/m ³)	2.07	2.18	2.06	2.12
Peak Converted Wet Density (t/m ³)	2.15	2.10	2.10	2.12
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Variation (%)	2.5 wet	0.5 dry	0.0	1.5 dry
Hilf Density Ratio (%)	96.5	104.0	98.0	99.5

Comments



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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.:

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Accreditation Number: 12719
 Site Number: 12712

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

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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 ³)	2.06	2.06	2.06	2.08	2.06	2.12
Peak Converted Wet Density (t/m ³)	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 (%)	99.0	104.0	100.0	102.0	97.5	99.0

Comments



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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.:**

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Approved Signatory: M. Robinson
 (Team Leader)

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

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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/m³)	2.03	2.04			
Peak Converted Wet Density (t/m³)	2.10	1.97			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.5 dry	2.0 dry			
Hilf Density Ratio (%)	96.5	103.5			

Comments



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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
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Approved Signatory: M. Robinson
 (Team Leader)

Accreditation Number: 12719
 Site Number: 12712
 Date of Issue: 1/12/2021
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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 (%)	99.0	98.0			

Comments



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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
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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 (%)	100.5				

Comments



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Report No: HDR:W21DS03564

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
Order No.: **CG Request No.:**
TRN: **Lot No.:**

Accredited for compliance with ISO/IEC 17025
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Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 3/12/2021
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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-13130	S21DS-13131	S21DS-13132		
Field Sample ID	1	2	3		
Date Tested	3/12/2021	3/12/2021	3/12/2021		
E:	356992.505	356976.575	356967.902		
N:	5777997.742	5777945.83	5777981.960		
RL:	8.764	8.555	9.014		
Lot:	1212	1216	1216		

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)	2.05	2.10	2.13		
Peak Converted Wet Density (t/m³)	2.02	2.09	2.09		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	2.5 dry	2.5 dry	2.0 dry		
Hilf Density Ratio (%)	101.0	100.5	101.5		

Comments



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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.:**

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Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 9/12/2021
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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 ³)	2.14				
Peak Converted Wet Density (t/m ³)	2.10				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 dry				
Hilf Density Ratio (%)	101.5				

Comments



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Report No: HDR:W21DS03602


Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
Order No.:
TRN:

CG Request No.:
Lot No.:

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Accreditation Number: 12719
 Site Number: 12712

Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 9/12/2021

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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-13272	S21DS-13273	S21DS-13274	S21DS-13275
Field Sample ID	1	2	3	4
Date Tested	6/12/2021	6/12/2021	6/12/2021	6/12/2021
E:	356998.754	356971.275	356971.963	356995.113
N:	5778015.795	5778017.135	5777976.077	5777973.698
RL / Layer:	9.139	9.379	8.961	8.870
Lot:	1233	1235	1214	1213

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 ³)	2.08	1.91	1.95	2.06
Peak Converted Wet Density (t/m ³)	2.14	2.05	2.08	2.03
Compactive Effort	Standard	Standard	Standard	Standard
Moisture Variation (%)	1.5 dry	2.0 dry	2.0 dry	2.5 dry
Hilf Density Ratio (%)	97.0	93.0	93.5	101.5

Comments



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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.:**

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 - Testing

Accreditation Number: 12719
 Site Number: 12712
 Approved Signatory: M. Robinson
 (Team Leader)
 Date of Issue: 9/12/2021
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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 (%)	97.0				

Comments



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Report No: HDR:W21DS03611

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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
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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-13294	S21DS-13297	S21DS-13298		
Field Sample ID	1	4	5		
Date Tested	7/12/2021	7/12/2021	7/12/2021		
E:	356991.906	3507002	356797		
N:	5777931.323	5778017	5778022		
RL / Layer:	8.723 / -	9.479 / FSL-0.485	9.589 / FSL-0.400m		
Lot:	1217	-	-		

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)	2.00	2.02	2.08		
Peak Converted Wet Density (t/m³)	2.10	2.10	2.11		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	4.0 wet	0.5 wet	0.5 wet		
Hilf Density Ratio (%)	95.0	96.0	98.5		

Comments



Dandenong South
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 25 Metcalf Street
 DANDENONG SOUTH, VIC 3175

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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
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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 (%)	92.5				

Comments



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Report No: HDR:W21DS03708

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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: 17/12/2021
 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-13628	S21DS-13629	S21DS-13630		
Field Sample ID	1	2	3		
Date Tested	16/12/2021	16/12/2021	16/12/2021		
E:	356990	356982	356972		
N:	5777431	5777967	5778017		
RL:	8.548	9.149	9.525		
Lot:	1217	1214	1235		
Other:	Retest of S21DS-13294	Retest of S21DS-13274	Retest of S21DS-13273		

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 ³)	2.08	2.11	2.08		
Peak Converted Wet Density (t/m ³)	2.12	2.02	2.05		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.0	0.0	0.0		
Hilf Density Ratio (%)	98.0	104.0	101.5		

Comments



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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.:
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: 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 ³)	2.14	2.10	2.06			
Peak Converted Wet Density (t/m ³)	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 (%)	99.5	99.0	99.5			

Comments



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Report No: HDR:W21DS03727

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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
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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-13673				
Field Sample ID	1				
Date Tested	18/12/2021				
E:	356992				
N:	5777952				
RL / Layer:	9.240 / 1				
Lot:	1215				
Other:	Sample 5				

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)	2.02				
Peak Converted Wet Density (t/m³)	2.08				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 wet				
Hilf Density Ratio (%)	97.0				

Comments



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Report No: HDR:W21DS03728

Issue No: 1

HILF Density Ratio Report

Client: Greenridge Properties Pty Ltd
Address: PO Box 3131
 AUBURN VIC 3123
Project: Riverfield Estate - Stage 12
Project No.: 1016363.012
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
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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-13674				
Field Sample ID	1				
Date Tested	17/12/2021				
E:	357000				
N:	5777984				
RL / Layer:	9.264				
Lot:	1213				
Other:	Sample 4				

Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.10				
Peak Converted Wet Density (t/m³)	2.12				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 dry				
Hilf Density Ratio (%)	99.0				

Comments



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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.:
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

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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			
Hilf Density Ratio (%)	97.5	101.0			

Comments



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Report No: HDR:W22DS00032

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: 14/01/2022
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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-00104				
Field Sample ID	1				
Date Tested	11/01/2022				
Location	E 357005				
	N 5778023				
	EL. 9.511				
	Lot 1117				

Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
Field Wet Density (t/m³)	1.94				
Peak Converted Wet Density (t/m³)	2.07				
Compactive Effort	Standard				
Moisture Variation (%)	1.5 dry				
Hilf Density Ratio (%)	93.5				

Comments



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Report No: HDR:W22DS00036


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. Longfield
 (Senior Technician)
 Date of Issue: 14/01/2022
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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-00110				
Field Sample ID	1				
Date Tested	12/01/2022				
Location	E 357009.48				
	N 5778021.68				
	EL. 9.61				
	Lot 1117				
	Retest of S22DS-00104				

Field and Laboratory Data

Depth of Test (mm)	175				
Depth of Layer (mm)	200				
Field Wet Density (t/m ³)	2.08				
Peak Converted Wet Density (t/m ³)	2.08				
Compactive Effort	Standard				
Moisture Variation (%)	2.5 dry				
Hilf Density Ratio (%)	100.0				

Comments



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Ph: + 61 3 8796 7900
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Report No: HDR:W22DS00397

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: 22/02/2022
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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-01254				
Field Sample ID	1				
Date Tested	21/02/2022				
Lot No:	1114				
E:	356990				
N:	5777952				
Elv:	9.377				

Field and Laboratory Data

Depth of Test (mm)	175				
AS Sieve Size (mm)	19.0				
Oversize Wet (%)	0				
Field Wet Density (t/m³)	2.01				
Peak Converted Wet Density (t/m³)	2.10				
Compactive Effort	Standard				
Moisture Variation (%)	0.5 dry				
Hilf Density Ratio (%)	96.0				

Comments



Dandenong South
ACN 143 009 330
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Report No: HDR:W22DS00417

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: 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-01356	S22DS-01357	S22DS-01358		
Field Sample ID	1	2	3		
Date Tested	22/02/2022	22/02/2022	22/02/2022		
Lot No:	1121	1125	1122		
E:	356949	356962	356935		
N:	5778018	5778001	5778024		
Elv:	9.575	9.566	9.899		

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)	2.05	2.09	2.06		
Peak Converted Wet Density (t/m³)	2.03	2.07	2.03		
Compactive Effort	Standard	Standard	Standard		
Moisture Variation (%)	0.0	0.5 wet	0.5 wet		
Hilf Density Ratio (%)	101.0	101.0	101.5		

Comments



Dandenong South
ACN 143 009 330
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Report No: HDR:W22DS00459

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: 28/02/2022
 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-01490	S22DS-01491			
Field Sample ID	1	2			
Date Tested	25/02/2022	25/02/2022			
Lot No:	1123	1126			
E:	356988	356946			
N:	5778005	5778012			
Elv:	9.868	10.067			

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 ³)	2.09	2.05			
Peak Converted Wet Density (t/m ³)	2.10	2.00			
Compactive Effort	Standard	Standard			
Moisture Variation (%)	0.5 wet	0.0			
Hilf Density Ratio (%)	99.5	102.5			

Comments



Dandenong South
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 25 Metcalf Street
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Report No: HDR:W23DS01059


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: J. Lamont
 (Dandenong Laboratory Manager)
 Date of Issue: 28/04/2023
 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 1289.2.1.1, AS 1289.5.7.1
Sampling Method: AS1289.1.2.1 Clause 6.4 (b)
Source: Onsite
Material: Sandy Clay

Sample Data

Sample ID	S23DS-03558	S23DS-03559	S23DS-03560	S23DS-03561	S23DS-03562	S23DS-03563
Field Sample ID	1	2	3	4	5	6
Date Tested	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023
Time Tested	10:00	10:20	10:30	10:45	11:10	11:25
E:	356923	356944.175	356946	356950	356955	356900
N:	5777885	5777913	5777925	5777938	5777952	5777998
RL:	9.310	9.310	9.283	9.313	9.412	9.786
Lot:	1144	1146	1147	1148	1149	1129

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
Field Moisture Content (%)	13.3	14.1	13.7	13.6	13.6	15.0
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1
Field Wet Density (t/m ³)	2.15	2.18	2.16	2.18	2.16	2.13
Field Dry Density (t/m ³)	1.90	1.91	1.90	1.92	1.90	1.85
Peak Converted Wet Density (t/m ³)	2.15	2.13	2.16	2.09	2.14	2.05
Optimum Moisture Content (%)	13.0	14.0	14.0	15.0	14.0	17.0
Compactive Effort	Standard	Standard	Standard	Standard	Standard	Standard
Moisture Ratio (%)	101.5	101.5	98.0	90.5	97.5	89.5
Moisture Variation (%)	0.0	0.0	0.5 dry	1.5 dry	0.5 dry	1.5 dry
Hilf Density Ratio (%)	100.0	102.0	100.0	104.5	101.0	103.5

Comments



Dandenong South
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Report No: HDR:W23DS01059


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: J. Lamont
 (Dandenong Laboratory Manager)
 Date of Issue: 28/04/2023

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

Sample Data

Sample ID	S23DS-03564	S23DS-03565	S23DS-03566			
Field Sample ID	7	8	9			
Date Tested	26/04/2023	26/04/2023	26/04/2023			
Time Tested	11:40	12:00	12:15			
E:	356885	356881	356976			
N:	5777926	5777894	5777918			
RL:	9.339	9.219	9.155			
Lot:	1135	1137	1111			

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 (%)	14.2	14.0	15.1			
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Density (t/m ³)	2.15	2.18	2.15			
Field Dry Density (t/m ³)	1.88	1.91	1.87			
Peak Converted Wet Density (t/m ³)	2.14	2.14	2.15			
Optimum Moisture Content (%)	14.0	14.0	15.0			
Compactive Effort	Standard	Standard	Standard			
Moisture Ratio (%)	103.0	99.5	99.5			
Moisture Variation (%)	0.5 wet	0.0	0.0			
Hilf Density Ratio (%)	100.5	102.0	100.0			

Comments

Appendix D : Controlled Fill Certificate



CONTROLLED FILL CERTIFICATE - LEVEL 1 INSPECTION & TESTING

PROJECT : Riverfield Estate Stage 11
Lots 1101 to 1150

Chadwick Geotechnics REF: 1016363.11v1

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

DATE: 5 May 2023

SUMMARY

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

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

LIMITATIONS

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

This report is based on the conditions present and factors affecting the soil at the time of inspection (11 February 2021 and was completed on 26 April 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

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