

# WORKS INSPECTION & TESTING Bulk Earthworks

PROPOSED  
RESIDENTIAL  
DEVELOPMENT

(STAGE 3) 409-429  
PARK RIDGE ROAD

PARK RIDGE

JOB NO: P930 comp01



Prepared for CCA Winslow

21<sup>st</sup> June 2018

## Document Information

Prepared for      CCA Winslow  
Project Name      Proposed Residential Development – (Stage 3) 409-429  
                         Park Ridge Road, Park Ridge  
Job Number      P930  
Date                12<sup>th</sup> July 2018

## Document Control

**Document Control**      - This Document Is:-      ORIGINAL      ☐      COPY      ☐

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## INTRODUCTION

Construction Sciences was commissioned by **CCA Winslow** to carry out the geotechnical inspection and testing required for Stage 3 of the proposed residential development at 409-429 Park Ridge Road, Park Ridge which was carried out from the 16<sup>th</sup> May to 15<sup>th</sup> June 2018.

## SCOPE OF WORKS

Works on this development were monitored in accordance with the scope of our commission as follows:-

**Level 1** : Bulk earthworks stripping and filling was inspected and tested on a Level 1 basis, in accordance with AS 3798.

Scope of Level 1 responsibility: ***“The primary objective of Level 1 Inspection and Testing is for the geotechnical inspection and testing authority (GITA) to be able to express an opinion on the compliance of the work. The GITA is responsible for ensuring that the inspection and testing is sufficient for this purpose.***

***The GITA needs to have competent personnel on site at all times while earthwork operations are undertaken. Such operations include the following:***

- (a) ***Completion of removal of topsoil.***
- (b) ***Placing of imported or cut material.***
- (c) ***Compaction and adding/removal of moisture.***
- (d) ***Trenching and backfilling, where applicable.***
- (e) ***Test rolling.***
- (f) ***Testing.***

***The superintendent should agree on a suitable inspection and testing plan prior to the commencement of the works”.***

*reference AS3798 – Section 8.2*

## SPECIFICATION REQUIREMENTS

Earthworks on this development was inspected and tested in accordance with the specification of the design engineer, **Bradlees** and / or to the specifications of the local authority, **Logan City Council**.

The following table is a summary of the basic compaction and quality requirements for the project.

Testing procedures used to confirm that these requirements were met were all in accordance with Australian Standard test methods.



<b>SPECIFICATIONS</b>	
<b><i>Item</i></b>	<b><i>Minimum Compaction Requirement</i></b>
<i>Bulk Earthworks Fill</i>	<i>95% Wet Density Ratio - Standard</i>

## **SITE WORKS - BULK EARTHWORKS**

**General :** Full time site inspection was maintained in accordance with Level 1 requirements whilst earthworks were carried out on this development. Fill areas included residential allotments, roads and embankments.

The areas to be filled were stripped and proof rolled in accordance with the specification requirements. All unsuitable material (including contaminated material containing roots and other organics) was excavated and removed from site.

Areas displaying instability were generally excavated until competent conditions were encountered. Benching was provided on slopes where filling was to be placed.

The natural ground in the areas of filling generally comprised medium to high plasticity residual clays, silty or sandy clays and weathered rock.

The material used in the bulk earthworks filling was sourced from site cutting to design levels.

Construction equipment on site during the stripping and placement of fills included the following:

1 x 825F Cat Compactor	1 x Cat 637G Scraper	1 x Cat D6 Dozer
1 x Cat 326D Digger	2 x Cat Excavators	1 x Cat Padfoot Roller
Moxy Trucks	1 x water cart	

The above list includes equipment employed on the project but not necessarily all at any one time.

**Compaction Control Testing :** Compaction control testing via the nuclear densometer method was carried out at regular intervals throughout the placement of fill, in accordance with the minimum test frequency recommendations included in AS3798 "Guidelines on Earthworks for Commercial and Residential Developments".

All test results are included in Appendix A. A summary of the test results is included as Table 1. A total of 46 field density tests were carried out throughout the earthworks. The average wet density ratio was recorded to be 100.5%.

## CONCLUSION

We confirm that:

- (a) Our representative was in full time site attendance whilst bulk earthworks filling was in progress between 16<sup>th</sup> May and 15<sup>th</sup> June 2018 at :- (Stage 3) 409-429 Park Ridge Road, Park Ridge.
- (b) Pre – fill ground preparation was carried out in accordance with the specifications and site instruction given.
- (c) The structural filling placed to design levels (per supplied construction drawing numbers 116460-201-B to 261-B) during the term of our engagement on a “Level 1” basis can be termed “controlled filling”.
- (d) The results of the compaction control testing indicate that the fill placed during the term of our site attendance, was compacted to at least the minimum specified wet density ratio.
- (f) All test results pertaining to the development are included within appendix A of this report.



**WAYNE GORMAN**  
**LABORATORY MANAGER**  
**Construction Sciences**















## APPENDIX

# A

## BULK EARTHWORKS FILL



**Construction  
Sciences**

**TABLE 1 : SUMMARY OF BULK EARTHWORKS FILL FIELD DENSITY TESTING**

**CLIENT :** CCA WINSLOW

**JOB NO:** P930

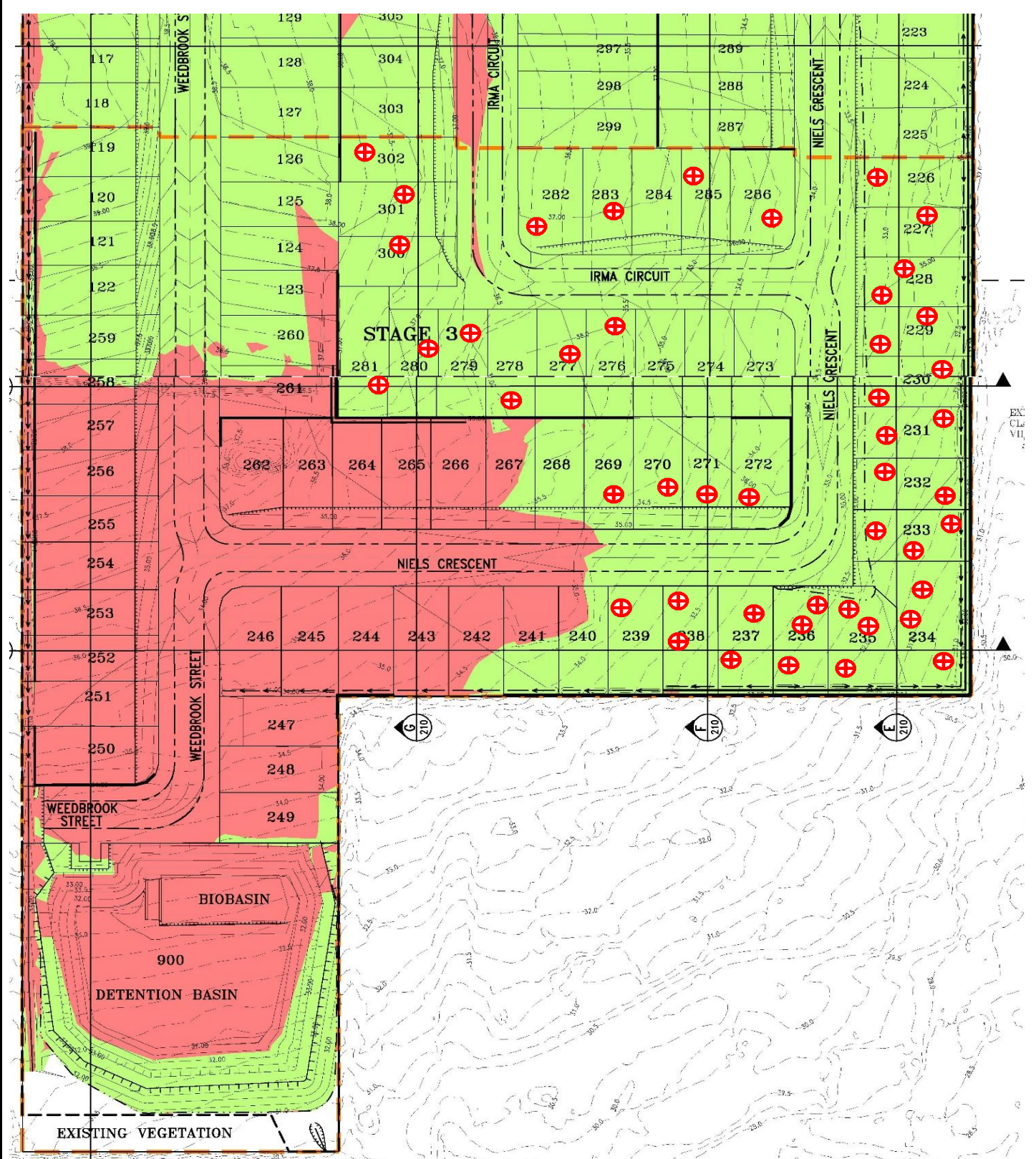
**PROJECT :** PROPOSED RESIDENTIAL DEVELOPMENT  
STAGE 3 - 409-429 PARK RIDGE ROAD - PARK RIDGE

Mean %: 100.5


SITE TEST No.	GENERAL LOCATION	OFFSET (A)	OFFSET (B)	ELEVATION LEVEL / RL	WET DENSITY RATIO (%)	
						FAILED TESTS RETESTED
13385/S/ 51208	Lot 285 - offset North East Boundary	9m South	8m West	RL 35.15	<b>106.0</b>	
13385/S/ 51209	Lot 226 - offset North East Boundary	5m South	24m West	RL 34.87	<b>105.0</b>	
13385/S/ 51350	Lot 286 - offset North East Boundary	16m South	6m West	RL 35.86	<b>103.5</b>	
13385/S/ 51351	Lot 227 - offset North East Boundary	3m South	11m West	FL	<b>103.5</b>	
13385/S/ 52132	Lot 280 - offset North East Boundary	12m South	4m West	RL 37.23	<b>98.0</b>	
13385/S/ 52133	Lot 281 - offset North East Boundary	27m South	4m West	RL 37.18	<b>99.0</b>	
13385/S/ 52134	Lot 277 - offset North East Boundary	12m South	6m West	RL 36.47	<b>99.5</b>	
13385/S/ 52135	Lot 278 - offset North East Boundary	25m South	6m West	RL 36.82	<b>100.0</b>	
13385/S/ 52136	Lot 279 - offset North East Boundary	7m South	4m West	RL 37.06	<b>102.0</b>	
13385/S/ 52137	Lot 276 - offset North East Boundary	4m South	8m West	RL 36.07	<b>101.0</b>	
13385/S/ 52802	Lot 233 - offset North East Boundary	10m South	17m West	RL 32.85	<b>96.5</b>	
13385/S/ 52803	Lot 238 - offset North East Boundary	4m South	13m West	RL 34.05	<b>102.5</b>	
13385/S/ 52804	Lot 237 - offset North East Boundary	19m South	11m West	RL 33.59	<b>102.5</b>	
13385/S/ 52805	Lot 236 - offset North East Boundary	11m South	7m West	RL 33.31	<b>103.5</b>	
13385/S/ 52806	Lot 235 - offset North East Boundary	7m South	11m West	RL 32.89	<b>97.0</b>	
13385/S/ 53041	Lot 232 - offset North East Boundary	4m South	22m West	RL 33.05	<b>97.0</b>	
13385/S/ 53042	Lot 233 - offset North East Boundary	3m South	6m West	RL 33.17	<b>98.0</b>	
13385/S/ 53043	Lot 234 - offset North East Boundary	6m South	14m West	RL 33.36	<b>96.0</b>	
13385/S/ 53044	Lot 235 - offset North East Boundary	23m South	13m West	RL 33.59	<b>98.5</b>	
13385/S/ 53045	Lot 236 - offset North East Boundary	24m South	11m West	RL 33.84	<b>98.5</b>	
13385/S/ 53046	Lot 238 - offset North East Boundary	15m South	12m West	RL 34.49	<b>98.5</b>	
13385/S/ 53047	Lot 272 - offset North East Boundary	24m South	13m West	RL 34.25	<b>99.5</b>	
13385/S/ 53048	Lot 271 - offset North East Boundary	20m South	6m West	RL 34.52	<b>98.5</b>	
13385/S/ 53049	Lot 237 - offset North East Boundary	7m South	5m West	RL 33.25	<b>101.5</b>	
13385/S/ 53050	Lot 234 - offset North East Boundary	25m South	9m West	RL 33.20	<b>100.0</b>	
13385/S/ 52332	Lot 302 - offset North East Boundary	7m South	22m West	RL 27.93	<b>100.0</b>	
13385/S/ 52333	Lot 301 - offset North East Boundary	3m South	13m West	RL 37.82	<b>101.5</b>	
13385/S/ 52334	Lot 283 - offset North East Boundary	17m South	6m West	RL 36.82	<b>101.5</b>	
13385/S/ 52335	Lot 282 - offset North East Boundary	23m South	12m West	RL 36.87	<b>100.5</b>	
13385/S/ 52336	Lot 300 - offset North East Boundary	2m South	15m West	RL 37.51	<b>101.0</b>	
13385/S/ 53893	Lot 239 - offset North East Boundary	4m South	11m West	FL	<b>98.5</b>	
13385/S/ 53894	Lot 234 - offset North East Boundary	14m South	16m West	FL	<b>99.5</b>	
13385/S/ 53895	Lot 269 - offset North East Boundary	20m South	6m West	FL	<b>104.0</b>	
13385/S/ 53896	Lot 270 - offset North East Boundary	18m South	4m West	FL	<b>104.0</b>	
13385/S/ 53897	Lot 235 - offset North East Boundary	11m South	6m West	FL	<b>100.5</b>	
13385/S/ 53898	Lot 236 - offset North East Boundary	4m South	4m West	FL	<b>100.5</b>	
13385/S/ 53899	Lot 233 - offset North East Boundary	6m South	22m West	FL	<b>102.5</b>	
13385/S/ 53900	Lot 232 - offset North East Boundary	11m South	7m West	FL	<b>103.5</b>	
13385/S/ 54031	Lot 231 - offset North East Boundary	9m South	20m West	RL 33.78	<b>101.5</b>	
13385/S/ 54032	Lot 231 - offset North East Boundary	3m South	7m West	FL	<b>101.0</b>	
13385/S/ 54033	Lot 230 - offset North East Boundary	12m South	24m West	FL	<b>98.0</b>	
13385/S/ 54034	Lot 230 - offset North East Boundary	4m South	8m West	FL	<b>97.5</b>	

13385/S/ 54035	Lot 229 - offset North East Boundary	11m South	21m West	RL 33.48	<b>101.0</b>	
13385/S/ 54036	Lot 229 - offset North East Boundary	5m South	13m West	FL	<b>100.0</b>	
13385/S/ 54037	Lot 228 - offset North East Boundary	11m South	23m West	RL 34.02	<b>100.0</b>	
13385/S/ 54038	Lot 228 - offset North East Boundary	4m South	16m West	FL	<b>99.5</b>	





⊕ denotes approximate field density test location

	CLIENT: CCA WINSLOW	JOB No.: P930
	PROJECT: (STAGE 3) - 409-429 PARK RIDGE ROAD, PARK RIDGE	SKETCH No.: SK 1
	TEST ITEM: BULK EARTHWORKS - FIELD DENSITY TESTS	DATE ISSUED: 12/7/2018

## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22539-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13071
Component:	Bulk Fill	Client Reference/s:	17/05/2018
Area Description:	Alotments	Report Date / Page:	22/05/2018 <span style="float: right;">Page 1 of 1</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/51208	13385/S/51209		
ID / Client ID	-	-		
Lot Number	285	226		
Date / Time Tested	17/05/2018 12:00	17/05/2018 12:00		
Material Source	Imported	Imported		
Material Type	Fill	Fill		
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b		
Depths: Test / Nom / Actual (mm)	200 / 200 / 200	200 / 200 / 200		
Standard or Modified	Standard	Standard		
Location	Lot 285	Lot 226		
	9mS from NE Boundary	5mS from NE Boundary		
	8mW from NE Boundary	24mW from NE Boundary		
Elevation m	35.154	34.870		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize (%)	0	0		
Compaction Sample Number	13385/S/51208	13385/S/51209		
Sample Description	CI Sandy Clay Brown	CI SAndy Clay Brown		
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	12.3	11.4		
Adjusted / Moisture Variation (%)	0.0	-0.5		
Optimum Moisture Content (%)	12.5	11.0		
Moisture Variation from OMC	(Drier than OMC)	(Wetter than OMC)		
<b>Moisture Ratio (%)</b>	<b>99.0</b>	<b>102.5</b>		
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.17	2.16		
Adj/Peak Conv Wet Density (t/m³)	2.04	2.06		
Density Ratio Required (%)	95	95		
<b>Hilf Density Ratio (%)</b>	<b>106.0</b>	<b>105.0</b>		

Remarks


 The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.  
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 Accreditation Number: 1986  
Corporate Site Number: 13385



Approved Signatory: Wayne Gorman

Form ID: W5ASRep Rev 2



## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22627-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	
Location:	Park Ridge	Internal Test Request:	13385/T/13096
Component:	Bulk Earthworks Fill	Client Reference/s:	
Area Description:	Stage 3	Report Date / Page:	25/05/2018 Page 1 of 1

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/51350	13385/S/51351		
ID / Client ID	-	-		
Lot Number	-	-		
Date / Time Tested	18/05/2018	18/05/2018		
Material Source	Imported	Imported		
Material Type	Fill	Fill		
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	200 / 225 / 225	200 / 225 / 225		
Standard or Modified	Standard	Standard		
Location	Lot 286	Lot 227		
	16mS from NE Boundary	3mS from NE Boundary		
	6mW from NE Boundary	11mW from NE Boundary		
Elevation m	RL 35.860	FL		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize (%)	0	0		
Compaction Sample Number	13385/S/51350	13385/S/51351		
Sample Description	CL SANDY CLAY	CL SANDY CLAY		
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	18.8	10.2		
Adjusted / Moisture Variation (%)	0.0	0.0		
Optimum Moisture Content (%)	19.0	10.0		
Moisture Variation from OMC	(Drier than OMC)	(at OMC)		
<b>Moisture Ratio (%)</b>	<b>99.0</b>	<b>100.0</b>		
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.16	2.17		
Adj/Peak Conv Wet Density (t/m³)	2.08	2.09		
Density Ratio Required (%)	95	95		
<b>Hilf Density Ratio (%)</b>	<b>103.5</b>	<b>103.5</b>		

Remarks



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Approved Signatory: Mathew Tyrrell  
Form ID: W5ASRep Rev 2

## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22864-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13201
Component:	Bulk Fill	Client Reference/s:	-
Area Description:	Lots 280 & 281	Report Date / Page:	6/06/2018 <span style="float: right;">Page 1 of 1</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/52132	13385/S/52133		
ID / Client ID	-	-		
Lot Number	280	281		
Date / Time Tested	28/05/2018 11:30	28/05/2018 11:30		
Material Source	Cut to Fill	Cut to Fill		
Material Type	Fill	Fill		
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	200 / 200 / 200	200 / 200 / 200		
Standard or Modified	Standard	Standard		
Location	Lot 280	Lot 281		
	12mS from NE Boundary	27mS from NE Boundary		
	4mW from NE Boundary	4mW from NE Boundary		
Elevation m	37.225	37.176		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize (%)	0	0		
Compaction Sample Number	13385/S/52132	13385/S/52133		
Sample Description	CL SANDY CLAY	CL SANDY CLAY		
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	12.5	16.7		
Adjusted / Moisture Variation (%)	2.0	2.0		
Optimum Moisture Content (%)	14.5	19.0		
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)		
<b>Moisture Ratio (%)</b>	<b>85.5</b>	<b>88.5</b>		
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.06	2.06		
Adj/Peak Conv Wet Density (t/m³)	2.10	2.07		
Density Ratio Required (%)	95	95		
<b>Hilf Density Ratio (%)</b>	<b>98.0</b>	<b>99.0</b>		

Remarks


 The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.  
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 Accreditation Number: 1986  
Corporate Site Number: 13385



Approved Signatory: Wayne Gorman

Form ID: W5ASRep Rev 2

## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22878-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/13202
Component:	Bulk Earthworks Fill	Client Reference/s:	-
Area Description:	Stage 3	Report Date / Page:	7/06/2018 <span style="float: right;">Page 1 of 1</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/52134	13385/S/52135	13385/S/52136	13385/S/52137
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	29/05/2018 13:00	29/05/2018 13:00	29/05/2018 13:00	29/05/2018 13:00
Material Source	Site Won - Cut to Fill	Site Won - Cut to Fill	Site Won - Cut to Fill	Site Won - Cut to Fill
Material Type	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b
Depths: Test / Nom / Actual (mm)	200 / 200 / 200	200 / 200 / 200	200 / 200 / 200	200 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 277	Lot 278	Lot 279	Lot 276
	12mS from NE Boundary	25mS from NE Boundary	7mS from NE Boundary	4mS from NE Boundary
	6mW from NE Boundary	6mW from NE Boundary	4mW from NE Boundary	8mW from NE Boundary
Elevation m	RL 36.473	RL 36.824	RL 37.063	RL 36.071
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/52134	13385/S/52135	13385/S/52136	13385/S/52137
Sample Description	CL SANDY CLAY	CL SANDY CLAY	CL SANDY CLAY	CL SANDY CLAY
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	14.7	14.1	22.2	21.0
Adjusted / Moisture Variation (%)	3.0	3.0	2.5	2.5
Optimum Moisture Content (%)	17.5	17.0	25.0	24.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
<b>Moisture Ratio (%)</b>	<b>83.5</b>	<b>83.0</b>	<b>88.5</b>	<b>88.0</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	1.97	1.97	2.00	1.98
Adj/Peak Conv Wet Density (t/m³)	1.98	1.97	1.96	1.96
Density Ratio Required (%)	95	95	95	95
<b>Hiif Density Ratio (%)</b>	<b>99.5</b>	<b>100.0</b>	<b>102.0</b>	<b>101.0</b>

Remarks


 The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.  
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 Accreditation Number: 1986  
Corporate Site Number: 13385



 Approved Signatory: Andrew Dickie  
Form ID: W5ASRep Rev 2

## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22880-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/13294
Component:	Bulk Earthworks Fill	Client Reference/s:	-
Area Description:	Stage 3	Report Date / Page:	11/06/2018 <span style="float: right;">Page 1 of 2</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/52802	13385/S/52803	13385/S/52804	13385/S/52805
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	1/06/2018 13:40	1/06/2018 13:50	1/06/2018 14:00	1/06/2018 14:10
Material Source	Site Won - Cut to Fill	Site Won - Cut to Fill	Site Won - Cut to Fill	Site Won - Cut to Fill
Material Type	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b
Depths: Test / Nom / Actual (mm)	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 233	Lot 238	Lot 237	Lot 236
	10mS from NE Boundary	4mS from NE Boundary	19mS from NE Boundary	11mS from NE Boundary
	17mW from NE Boundary	13mW from NE Boundary	11mW from NE Boundary	7mW from NE Boundary
Elevation m	32.8475	34.050	33.591	33.309
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/52802	13385/S/52803	13385/S/52804	13385/S/52805
Sample Description	SILTY CLAY, brown	SILTY CLAY, brown	SILTY CLAY, brown	SILTY CLAY, brown
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	24.5	21.9	21.5	19.8
Adjusted / Moisture Variation (%)	0.0	-0.5	0.0	0.0
Optimum Moisture Content (%)	24.5	21.5	21.5	20.0
Moisture Variation from OMC	(Wetter than OMC)	(Wetter than OMC)	(at OMC)	(at OMC)
<b>Moisture Ratio (%)</b>	<b>100.5</b>	<b>102.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	1.89	2.00	2.01	2.02
Adj/Peak Conv Wet Density (t/m³)	1.96	1.96	1.96	1.96
Density Ratio Required (%)	95	95	95	95
<b>Hilf Density Ratio (%)</b>	<b>96.5</b>	<b>102.5</b>	<b>102.5</b>	<b>103.5</b>

Remarks


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Corporate Site Number: 13385



Approved Signatory: Wayne Gorman

Form ID: W5ASRep Rev 2



## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22880-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/13294
Component:	Bulk Earthworks Fill	Client Reference/s:	-
Area Description:	Stage 3	Report Date / Page:	11/06/2018 Page 2 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/52806			
ID / Client ID	-			
Lot Number	-			
Date / Time Tested	1/06/2018 14:20			
Material Source	Site Won - Cut to Fill			
Material Type	Bulk Earthworks Fill			
Sampling Method	AS1289.1.2.1 CI 6.4b			
Depths: Test / Nom / Actual (mm)	200 / 225 / 225			
Standard or Modified	Standard			
Location	Lot 235			
	7mS from NE Boundary			
	11mW from NE Boundary			
Elevation m	32.885			
Test Fraction (mm)	< 19.0 mm			
Sample Oversize (%)	0			
Compaction Sample Number	13385/S/52806			
Sample Description	SILTY CLAY, brown			
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	26.7			
Adjusted / Moisture Variation (%)	0.0			
Optimum Moisture Content (%)	26.5			
Moisture Variation from OMC	(Wetter than OMC)			
<b>Moisture Ratio (%)</b>	<b>101.0</b>			
<b>Density Test Results:</b>				
Field Wet Density (t/m <sup>3</sup> )	1.91			
Adj/Peak Conv Wet Density (t/m <sup>3</sup> )	1.96			
Density Ratio Required (%)	95			
<b>Hilf Density Ratio (%)</b>	<b>97.0</b>			

Remarks



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Corporate Site Number: 13385

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## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22944-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13321
Component:	Fill	Client Reference/s:	5/06/2018
Area Description:	Bulk Fill Area	Report Date / Page:	8/06/2018 <span style="float: right;">Page 1 of 3</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/53041	13385/S/53042	13385/S/53043	13385/S/53044
ID / Client ID	-	-	-	-
Lot Number	232	233	234	235
Date / Time Tested	5/06/2018 13:00	5/06/2018 13:10	5/06/2018 13:20	5/06/2018 13:30
Material Source	Cut to Fill	Cut to Fill	Cut to Fill	Cut to Fill
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b
Depths: Test / Nom / Actual (mm)	200 / 200 / 200	200 / 200 / 200	200 / 200 / 200	200 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 232	Lot 233	Lot 234	Lot 235
	4mS from NE Boundary	3mS from NE Boundary	6mS from NE Boundary	23mS from NE Boundary
	22mW from NE Boundary	6mW from NE Boundary	14mW from NE Boundary	13mW from NE Boundary
Elevation m	33.047	33.167	33.365	33.590
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/53041	13385/S/53042	13385/S/53043	13385/S/53044
Sample Description	(CI) sandy clay brown	(CI) Sandy Clay Brown	(CI) Sandy Clay Brown	(CH) silty clay grey/brown
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	15.6	16.9	16.3	18.6
Adjusted / Moisture Variation (%)	2.0	2.0	2.0	2.0
Optimum Moisture Content (%)	18.0	19.0	18.5	21.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
<b>Moisture Ratio (%)</b>	<b>87.5</b>	<b>88.5</b>	<b>87.5</b>	<b>89.0</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.06	2.10	2.11	2.02
Adj/Peak Conv Wet Density (t/m³)	2.12	2.14	2.19	2.05
Density Ratio Required (%)	95	95	95	95
<b>Hilf Density Ratio (%)</b>	<b>97.0</b>	<b>98.0</b>	<b>96.0</b>	<b>98.5</b>

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## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22944-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13321
Component:	Fill	Client Reference/s:	5/06/2018
Area Description:	Bulk Fill Area	Report Date / Page:	8/06/2018 <span style="float: right;">Page 2 of 3</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/53045	13385/S/53046	13385/S/53047	13385/S/53048
ID / Client ID	-	-	-	-
Lot Number	236	238	272	271
Date / Time Tested	5/06/2018 13:40	5/06/2018 13:50	5/06/2018 14:00	5/06/2018 14:10
Material Source	Cut to Fill	Cut to Fill	Cut to Fill	Cut to Fill
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b
Depths: Test / Nom / Actual (mm)	200 / 200 / 200	200 / 200 / 200	200 / 200 / 200	200 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 236	Lot 238	Lot 272	Lot 271
	24mS from NE Boundary	15mS from NE Boundary	24mS from NE Boundary	20mS from NE Boundary
	11mW from NE Boundary	12mW from NE Boundary	13mW from NE Boundary	6mW from NE Boundary
Elevation m	33.837	34.489	34.248	34.518
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/53045	13385/S/53046	13385/S/53047	13385/S/53048
Sample Description	(CH) Sandy Clay Grey/Brown	(CH) Sandy Clay Grey/Brown	(CH) Sandy Clay Grey/Brown	(CH) Sandy Clay Grey/Brown
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	18.4	20.0	20.1	-
Adjusted / Moisture Variation (%)	2.5	2.0	2.0	2.5
Optimum Moisture Content (%)	21.0	22.5	22.5	-
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	-
<b>Moisture Ratio (%)</b>	<b>88.5</b>	<b>89.5</b>	<b>89.5</b>	<b>-</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	1.99	2.02	2.05	2.05
Adj/Peak Conv Wet Density (t/m³)	2.03	2.05	2.05	2.08
Density Ratio Required (%)	95	95	95	95
<b>Half Density Ratio (%)</b>	<b>98.5</b>	<b>98.5</b>	<b>99.5</b>	<b>98.5</b>

Remarks


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Form ID: W5ASRep Rev 2

## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22944-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13321
Component:	Fill	Client Reference/s:	5/06/2018
Area Description:	Bulk Fill Area	Report Date / Page:	8/06/2018 <span style="float: right;">Page 3 of 3</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/53049	13385/S/53050		
ID / Client ID	-	-		
Lot Number	237	234		
Date / Time Tested	5/06/2018 14:20	5/06/2018 14:30		
Material Source	Cut to Fill	Cut to Fill		
Material Type	Fill	Fill		
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b		
Depths: Test / Nom / Actual (mm)	200 / 200 / 200	200 / 200 / 200		
Standard or Modified	Standard	Standard		
Location	Lot 237	Lot 234		
	7mS from NE Boundary	25mS from NE Boundary		
	5mW from NE Boundary	9mW from NE Boundary		
Elevation m	33.251	33.198		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize (%)	0	0		
Compaction Sample Number	13385/S/53049	13385/S/53050		
Sample Description	(CI) Sandy Clay Brown	(CI) Sandy CLay Grey/Brown		
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	17.0	15.4		
Adjusted / Moisture Variation (%)	2.5	2.0		
Optimum Moisture Content (%)	19.5	17.5		
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)		
<b>Moisture Ratio (%)</b>	<b>88.0</b>	<b>87.0</b>		
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.05	2.08		
Adj/Peak Conv Wet Density (t/m³)	2.02	2.08		
Density Ratio Required (%)	95	95		
<b>Hilf Density Ratio (%)</b>	<b>101.5</b>	<b>100.0</b>		

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## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22985-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13241
Component:	Bulk Fill	Client Reference/s:	30/05/2018
Area Description:	Fill Area Stage 3	Report Date / Page:	11/06/2018 <span style="float: right;">Page 1 of 2</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/52332	13385/S/52333	13385/S/52334	13385/S/52335
ID / Client ID	-	-	-	-
Lot Number	302	301	283	282
Date / Time Tested	30/05/2018 15:00	30/05/2018 15:00	30/05/2018 15:00	30/05/2018 15:00
Material Source	Cut to Fill	Cut to Fill	Cut to Fill	Cut to Fill
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b
Depths: Test / Nom / Actual (mm)	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 302	Lot 301	Lot 283	Lot 282
	7mS from NE Boundary	3mS from NE Boundary	17mS from NE Boundary	23mS from NE Boundary
	22mW from NE Boundary	13mW from NE Boundary	6mW from NE Boundary	12mW from NE Boundary
Elevation m	27.926	37.821	36.823	36.869
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/52332	13385/S/52333	13385/S/52334	13385/S/52335
Sample Description	CL Sandy Clay	CL Sandy Clay	CL Sandy Clay	CL Sandy Clay
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	22.7	16.4	19.9	24.4
Adjusted / Moisture Variation (%)	0.0	0.0	0.0	0.0
Optimum Moisture Content (%)	22.5	16.0	20.0	24.5
Moisture Variation from OMC	(Wetter than OMC)	(Wetter than OMC)	(Wetter than OMC)	(at OMC)
<b>Moisture Ratio (%)</b>	<b>101.0</b>	<b>101.0</b>	<b>100.5</b>	<b>100.0</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	1.98	2.10	2.04	2.01
Adj/Peak Conv Wet Density (t/m³)	1.98	2.07	2.02	2.00
Density Ratio Required (%)	95	95	95	95
<b>Hilf Density Ratio (%)</b>	<b>100.0</b>	<b>101.5</b>	<b>101.5</b>	<b>100.5</b>

Remarks


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## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22985-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13241
Component:	Bulk Fill	Client Reference/s:	30/05/2018
Area Description:	Fill Area Stage 3	Report Date / Page:	11/06/2018 <span style="float: right;">Page 2 of 2</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/52336			
ID / Client ID	-			
Lot Number	300			
Date / Time Tested	30/05/2018 15:00			
Material Source	Cut to Fill			
Material Type	Fill			
Sampling Method	AS1289.1.2.1 CI 6.4b			
Depths: Test / Nom / Actual (mm)	200 / 225 / 225			
Standard or Modified	Standard			
Location	Lot 300			
	2mS from NE Boundary			
	15mW from NE Boundary			
Elevation m	37.514			
Test Fraction (mm)	< 19.0 mm			
Sample Oversize (%)	0			
Compaction Sample Number	13385/S/52336			
Sample Description	CL Sandy Clay			
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	16.3			
Adjusted / Moisture Variation (%)	0.0			
Optimum Moisture Content (%)	16.5			
Moisture Variation from OMC	(at OMC)			
<b>Moisture Ratio (%)</b>	<b>100.0</b>			
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.02			
Adj/Peak Conv Wet Density (t/m³)	2.00			
Density Ratio Required (%)	95			
<b>Hilf Density Ratio (%)</b>	<b>101.0</b>			

Remarks
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	Accreditation Number:	1986	
	Corporate Site Number:	13385	
	Approved Signatory: Wayne Gorman		Form ID: W5ASRep Rev 2



## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/23343-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/13437
Component:	Bulk Fill	Client Reference/s:	-
Area Description:	Allotment Fill	Report Date / Page:	22/06/2018 <span style="float: right;">Page 1 of 2</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/53893	13385/S/53894	13385/S/53895	13385/S/53896
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	12/06/2018 12:30	12/06/2018 12:40	12/06/2018 12:50	12/06/2018 13:00
Material Source	Cut to Fill	Cut to Fill	Cut to Fill	Cut to Fill
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b
Depths: Test / Nom / Actual (mm)	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 239	Lot 234	Lot 269	Lot 270
	4mS From NE Boundary	14mS From NE Boundary	20mS From NE Boundary	18mS From NE Boundary
	11mW From NE Boundary	16mW From NE Boundary	6mW From NE Boundary	4mW From NE Boundary
Elevation m	FL	FL	FL	FL
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/53893	13385/S/53894	13385/S/53895	13385/S/53896
Sample Description	SILTY CLAY, brown	SILTY CLAY, brown	SILTY CLAY, brown	SILTY CLAY, brown
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	16.1	15.6	15.3	15.7
Adjusted / Moisture Variation (%)	0.0	0.0	0.5	0.5
Optimum Moisture Content (%)	16.0	15.5	15.5	16.0
Moisture Variation from OMC	(at OMC)	(Wetter than OMC)	(Drier than OMC)	(Drier than OMC)
<b>Moisture Ratio (%)</b>	<b>100.0</b>	<b>100.5</b>	<b>98.0</b>	<b>98.0</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.05	2.07	2.12	2.13
Adj/Peak Conv Wet Density (t/m³)	2.08	2.08	2.05	2.04
Density Ratio Required (%)	95	95	95	95
<b>Hilf Density Ratio (%)</b>	<b>98.5</b>	<b>99.5</b>	<b>104.0</b>	<b>104.0</b>

Remarks


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## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/23343-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/13437
Component:	Bulk Fill	Client Reference/s:	-
Area Description:	Allotment Fill	Report Date / Page:	22/06/2018 <span style="float: right;">Page 2 of 2</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/53897	13385/S/53898	13385/S/53899	13385/S/53900
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	12/06/2018 13:10	12/06/2018 13:20	12/06/2018 13:30	12/06/2018 13:40
Material Source	Cut to Fill	Cut to Fill	Cut to Fill	Cut to Fill
Material Type	Fill	Fill	Fill	Fill
Sampling Method	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b	AS1289.1.2.1 CI 6.4b
Depths: Test / Nom / Actual (mm)	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 235	Lot 236	Lot 233	Lot 232
	11mS From NE Boundary	4mS From NE Boundary	6mS From NE Boundary	11mS From NE Boundary
	6mW From NE Boundary	4mW From NE Boundary	22mW From NE Boundary	7mW From NE Boundary
Elevation m	FL	FL	FL	FL
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/53897	13385/S/53898	13385/S/53899	13385/S/53900
Sample Description	SILTY CLAY, brown	SILTY CLAY, brown	SILTY CLAY, brown	SILTY CLAY, brown
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	13.8	14.9	15.0	15.1
Adjusted / Moisture Variation (%)	0.0	0.0	0.5	0.5
Optimum Moisture Content (%)	13.5	15.0	15.5	15.5
Moisture Variation from OMC	(Wetter than OMC)	(at OMC)	(Drier than OMC)	(Drier than OMC)
<b>Moisture Ratio (%)</b>	<b>100.5</b>	<b>100.0</b>	<b>98.0</b>	<b>98.0</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.09	2.09	2.10	2.12
Adj/Peak Conv Wet Density (t/m³)	2.08	2.08	2.05	2.04
Density Ratio Required (%)	95	95	95	95
<b>Half Density Ratio (%)</b>	<b>100.5</b>	<b>100.5</b>	<b>102.5</b>	<b>103.5</b>

Remarks


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 Accreditation Number: 1986  
Corporate Site Number: 13385



Approved Signatory: Wayne Gorman

Form ID: W5ASRep Rev 2

## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/23377-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/13453
Component:	Bulk Earthworks Fill	Client Reference/s:	-
Area Description:	Stage 3	Report Date / Page:	26/06/2018 <span style="float: right;">Page 1 of 2</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/54031	13385/S/54032	13385/S/54033	13385/S/54034
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	15/06/2018 08:00	15/06/2018 08:10	15/06/2018 08:20	15/06/2018 08:30
Material Source	Site Won - Cut to Fill	Site Won - Cut to Fill	Site Won - Cut to Fill	Site Won - Cut to Fill
Material Type	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill
Sampling Method	AS1289.1.2.1 CI 6.5.1	AS1289.1.2.1 CI 6.5.1	AS1289.1.2.1 CI 6.5.1	AS1289.1.2.1 CI 6.5.1
Depths: Test / Nom / Actual (mm)	200 / 225 / 300	200 / 225 / 300	200 / 225 / 300	200 / 225 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 231	Lot 231	Lot 230	Lot 230
	9mS from NE Boundary	3mS from NE Boundary	12mS from NE Boundary	4mS from NE Boundary
	20mW from NE Boundary	7mW from NE Boundary	24mW from NE Boundary	8mW from NE Boundary
Elevation m	RL 33.784	FL	RL 33.617	FL
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/54031	13385/S/54032	13385/S/54033	13385/S/54034
Sample Description	CI SILTY CLAY, brown	CI SILTY CLAY, brown	CI SILTY CLAY, brown	CI SILTY CLAY, brown
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	19.2	20.0	12.9	12.5
Adjusted / Moisture Variation (%)	0.0	0.0	0.5	0.5
Optimum Moisture Content (%)	19.5	20.0	13.0	13.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
<b>Moisture Ratio (%)</b>	<b>99.0</b>	<b>99.0</b>	<b>97.5</b>	<b>97.5</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.02	2.02	2.06	2.05
Adj/Peak Conv Wet Density (t/m³)	1.99	1.99	2.10	2.10
Density Ratio Required (%)	95	95	95	95
<b>Hilf Density Ratio (%)</b>	<b>101.5</b>	<b>101.0</b>	<b>98.0</b>	<b>97.5</b>

Remarks


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 Approved Signatory: Andrew Dickie  
Form ID: W5ASRep Rev 2

## WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/23377-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/930
Project:	(Stage 3) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/13453
Component:	Bulk Earthworks Fill	Client Reference/s:	-
Area Description:	Stage 3	Report Date / Page:	26/06/2018 <span style="float: right;">Page 2 of 2</span>

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/54035	13385/S/54036	13385/S/54037	13385/S/54038
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	15/06/2018 08:40	15/06/2018 08:50	15/06/2018 09:00	15/06/2018 09:10
Material Source	Site Won - Cut to Fill	Site Won - Cut to Fill	Site Won - Cut to Fill	Site Won - Cut to Fill
Material Type	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill
Sampling Method	AS1289.1.2.1 CI 6.5.1	AS1289.1.2.1 CI 6.5.1	AS1289.1.2.1 CI 6.5.1	AS1289.1.2.1 CI 6.5.1
Depths: Test / Nom / Actual (mm)	200 / 225 / 300	200 / 225 / 300	200 / 225 / 300	200 / 225 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 229	Lot 229	Lot 228	Lot 228
	11mS from NE Boundary	5mS from NE Boundary	11mS from NE Boundary	4mS from NE Boundary
	21mW from NE Boundary	13mW from NE Boundary	23mW from NE Boundary	16mW from NE Boundary
Elevation m	RL 33.476	FL	RL 34.017	FL
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	13385/S/54035	13385/S/54036	13385/S/54037	13385/S/54038
Sample Description	CI SILTY CLAY, brown	CI SILTY CLAY, brown	CI SILTY CLAY, brown	CI SILTY CLAY, brown
<b>Moisture Test Results:</b>				
Field Moisture Content (%)	15.7	17.0	11.2	10.9
Adjusted / Moisture Variation (%)	0.0	0.0	0.0	0.0
Optimum Moisture Content (%)	16.0	17.0	11.5	11.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
<b>Moisture Ratio (%)</b>	<b>98.5</b>	<b>99.0</b>	<b>99.0</b>	<b>99.0</b>
<b>Density Test Results:</b>				
Field Wet Density (t/m³)	2.01	1.99	1.97	1.98
Adj/Peak Conv Wet Density (t/m³)	2.00	1.99	1.97	1.99
Density Ratio Required (%)	95	95	95	95
<b>Hilf Density Ratio (%)</b>	<b>101.0</b>	<b>100.0</b>	<b>100.0</b>	<b>99.5</b>

Remarks


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