

WORKS INSPECTION & TESTING Bulk Earthworks

**PROPOSED
RESIDENTIAL
DEVELOPMENT**

**(STAGE 2) 409-429
PARK RIDGE ROAD**

PARK RIDGE

JOB NO: P929 comp01



Prepared for CCA Winslow

21st June 2018

Document Information

Prepared for CCA Winslow
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Park Ridge Road, Park Ridge
Job Number P929
Date 21st June 2018

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Appendix A Bulk Earthworks - Compaction

INTRODUCTION

Construction Sciences was commissioned by **CCA Winslow** to carry out the geotechnical inspection and testing required for Stage 2 of the proposed residential development at 409-429 Park Ridge Road, Park Ridge which was carried out from the 23rd April to 25th May 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.

SPECIFICATIONS	
<i>Item</i>	<i>Minimum Compaction Requirement</i>
<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 33 field density tests were carried out throughout the earthworks. The average wet density ratio was recorded to be 102.8%.

CONCLUSION

We confirm that:

- (a) Our representative was in full time site attendance whilst bulk earthworks filling was in progress between 23rd April and 25th May 2018 at :- (Stage 2) 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



Preparation of Lots 218-221 facing north-east



Preparation of Lots 221-223 facing east



existing unsuitable material containing roots & other organics
stripped and removed prior to fill being placed







APPENDIX

A

BULK EARTHWORKS FILL



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

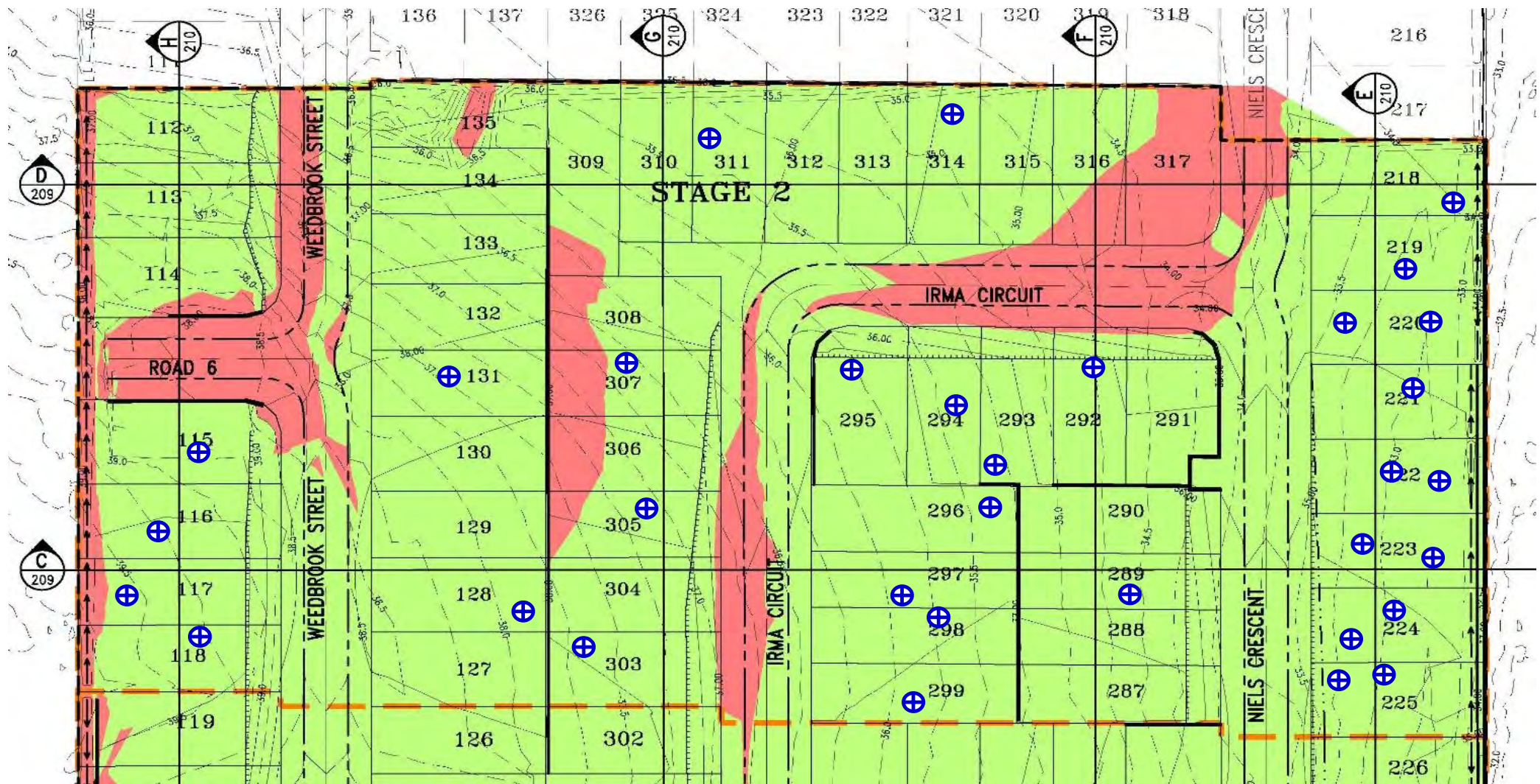
CLIENT : CCA WINSLOW

JOB NO: P929

PROJECT : PROPOSED RESIDENTIAL DEVELOPMENT
(STAGE 2) 409-429 PARK RIDGE ROAD - PARK RIDGE

Mean %: 102.8

SITE TEST No.	GENERAL LOCATION	OFFSET (A)	OFFSET (B)	ELEVATION LEVEL / RL	WET DENSITY RATIO (%)	
						FAILED TESTS RETESTED
13385/S/ 50247	Lot 223 - offset North East Boundary	7m South	18m West	RL 33.92	101.5	
13385/S/ 50248	Lot 221 - offset North East Boundary	4m South	11m West	RL 33.70	100.0	
13385/S/ 50249	Lot 295 - offset North East Boundary	8m South	12m West	RL 36.56	99.0	
13385/S/ 50250	Lot 297 - offset North East Boundary	7m South	19m West	RL 36.57	99.5	
13385/S/ 50242	Lot 289 - offset North East Boundary	8m South	17m West	RL 34.79	104.5	
13385/S/ 50243	Lot 225 - offset North East Boundary	4m South	23m West	RL 33.59	100.0	
13385/S/ 50244	Lot 222 - offset North East Boundary	7m South	14m West	RL 33.55	100.0	
13385/S/ 50042	Lot 224 - offset North East Boundary	6m South	16m West	RL 33.37	101.0	
13385/S/ 50043	Lot 220 - offset North East Boundary	11m South	24m West	RL 33.78	103.5	
13385/S/ 50044	Lot 292 - offset North East Boundary	8m South	5m West	RL 34.96	100.5	
13385/S/ 50045	Lot 293 - offset North East Boundary	27m South	9m West	RL 35.24	101.0	
13385/S/ 50750	Lot 294 - offset North East Boundary	15m South	7m West	FL	99.5	
13385/S/ 50751	Lot 296 - offset North East Boundary	4m South	5m West	FL	100.5	
13385/S/ 50752	Lot 298 - offset North East Boundary	3m South	13m West	FL	100.0	
13385/S/ 50753	Lot 299 - offset North East Boundary	7m South	18m West	FL	100.0	
13385/S/ 50754	Lot 218 - offset North East Boundary	12m South	7m West	FL	103.0	
13385/S/ 50755	Lot 219 - offset North East Boundary	11m South	14m West	FL	103.0	
13385/S/ 50756	Lot 220 - offset North East Boundary	7m South	13m West	FL	102.0	
13385/S/ 50757	Lot 225 - offset North East Boundary	9m South	26m West	FL	109.0	
13385/S/ 50758	Lot 224 - offset North East Boundary	12m South	16m West	FL	107.0	
13385/S/ 50759	Lot 223 - offset North East Boundary	8m South	11m West	FL	106.0	
13385/S/ 50760	Lot 222 - offset North East Boundary	7m South	6m West	FL	106.5	
13385/S/ 50946	Lot 311 - offset North East Boundary	13m South	11m West	RL 35.82	103.5	
13385/S/ 50947	Lot 314 - offset North East Boundary	6m South	5m West	RL 35.28	103.5	
13385/S/ 51163	Lot 303 - offset North East Boundary	3m South	23m West	FL	106.5	
13385/S/ 51164	Lot 305 - offset North East Boundary	4m South	13m West	FL	107.0	
13385/S/ 51165	Lot 307 - offset North East Boundary	2m South	16m West	FL	104.5	
13385/S/ 51166	Lot 128 - offset North East Boundary	8m South	4m West	FL	103.5	
13385/S/ 51167	Lot 131 - offset North East Boundary	5m South	16m West	FL	105.0	
13385/S/ 51446	Lot 115 - offset North East Boundary	10m South	13m West	FL	103.0	
13385/S/ 51447	Lot 116 - offset North East Boundary	12m South	18m West	FL	100.0	
13385/S/ 51448	Lot 117 - offset North East Boundary	7m South	26m West	FL	103.5	
13385/S/ 51449	Lot 118 - offset North East Boundary	2m South	18m West	FL	104.0	



⊕ denotes approximate field density test location



WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22325-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/12942
Component:	Bulk Earthworks Fill	Client Reference/s:	-
Area Description:	Lots 223, 221, 295 and 297	Report Date / Page:	9/05/2018 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/50247	13385/S/50248	13385/S/50249	13385/S/50250
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	30/04/2018 08:40	30/04/2018 08:50	30/04/2018 09:30	30/04/2018 09:40
Material Source	General Fill Imported to Site	General Fill Imported to Site	General Fill Imported to Site	General Fill Imported to Site
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 223	Lot 221	Lot 295	Lot 297
	7mS from NE Boundary	4mS from NE Boundary	8mS from NE Boundary	7mS from NE Boundary
	18mW from NE Boundary	11mW from NE Boundary	12mW from NE Boundary	19mW from NE Boundary
Elevation m	RL: 33.918	RL: 33.702	RL: 36.562	RL: 36.569
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/50247	13385/S/50248	13385/S/50249	13385/S/50250
Sample Description	CL SANDY CLAY with gravel, bro	CL SANDY CLAY with gravel, bro	CL SANDY CLAY with gravel	CL SANDY CLAY with gravel
Moisture Test Results:				
Field Moisture Content (%)	13.0	13.4	21.8	20.8
Adjusted / Moisture Variation (%)	2.0	2.0	-0.5	-0.5
Optimum Moisture Content (%)	15.0	15.0	21.0	20.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Wetter than OMC)	(Wetter than OMC)
Moisture Ratio (%)	86.5	88.0	103.0	102.0
Density Test Results:				
Field Wet Density (t/m³)	2.12	2.08	2.11	2.13
Adj/Peak Conv Wet Density (t/m³)	2.09	2.09	2.14	2.14
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	101.5	100.0	99.0	99.5

Remarks

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	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/22326-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/12940
Component:	Bulk Earthworks Fill	Client Reference/s:	-
Area Description:	Lots 289, 225 and 222	Report Date / Page:	9/05/2018 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/50242	13385/S/50243	13385/S/50244	
ID / Client ID	-	-	-	
Lot Number	-	-	-	
Date / Time Tested	27/04/2018 09:30	27/04/2018 09:30	27/04/2018 09:30	
Material Source	General Fill Imported to Site	General Fill Imported to Site	General Fill Imported to Site	
Material Type	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	
Depths: Test / Nom / Actual (mm)	200 / 200 / 200	200 / 200 / 200	200 / 200 / 200	
Standard or Modified	Standard	Standard	Standard	
Location	Lot 289	Lot 225	Lot 222	
	17mW From NE Boundary	23mW From NE Boundary	14mW From NE Boundary	
	8mS From NE Boundary	4mS From NE Boundary	7mS From NE Boundary	
Elevation m	RL: 34.792	RL: 33.586	RL: 33.555	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	0	
Compaction Sample Number	13385/S/50242	13385/S/50243	13385/S/50244	
Sample Description	CL SILTY CLAY, brown	silty clay brown	CL SILTY CLAY with gravel	
Moisture Test Results:				
Field Moisture Content (%)	14.8	18.8	14.3	
Adjusted / Moisture Variation (%)	1.5	1.0	0.0	
Optimum Moisture Content (%)	16.5	19.5	14.0	
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Wetter than OMC)	
Moisture Ratio (%)	90.0	96.0	101.5	
Density Test Results:				
Field Wet Density (t/m³)	2.15	2.01	2.15	
Adj/Peak Conv Wet Density (t/m³)	2.06	2.00	2.15	
Density Ratio Required (%)	95	95	95	
Hilf Density Ratio (%)	104.5	100.0	100.0	

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/22328-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	-
Location:	Park Ridge	Internal Test Request:	13385/T/12910
Component:	Bulk Earthworks Fill	Client Reference/s:	-
Area Description:	Lots 224, 220, 292 and 295	Report Date / Page:	9/05/2018 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/50042	13385/S/50043	13385/S/50044	13385/S/50045
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	26/04/2018 10:00	26/04/2018 10:10	26/04/2018 10:20	26/04/2018 10:30
Material Source	General Fill Imported to Site	General Fill Imported to Site	General Fill Imported to Site	General Fill Imported to Site
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 224	Lot 220	Lot 292	Lot 293
	6mS from NE Border	11mS from NE Border	8mS from NE Border	27mS from NE Border
	16mW From NE Border	24mW From NE Border	5mW From NE Border	9mW From NE Border
Elevation m	RL 33.374	RL 33.781	RL 34.957	RL 35.237
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/50042	13385/S/50043	13385/S/50044	13385/S/50045
Sample Description	CL/CI SILT/CLAY sandy trace gra	CL/CI SILT/CLAY sandy trace gra	CL/CI SILT/CLAY sandy trace gra	CL/CI SILT/CLAY sandy trace gra
Moisture Test Results:				
Field Moisture Content (%)	18.2	12.4	15.1	16.7
Adjusted / Moisture Variation (%)	0.0	4.5	2.0	2.5
Optimum Moisture Content (%)	18.0	17.0	17.0	19.0
Moisture Variation from OMC	(at OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	100.0	73.5	88.0	87.0
Density Test Results:				
Field Wet Density (t/m³)	2.09	2.18	2.16	2.09
Adj/Peak Conv Wet Density (t/m³)	2.07	2.11	2.15	2.07
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	101.0	103.5	100.5	101.0

Remarks


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Form ID: W5ASRep Rev 2

WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22399-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	
Location:	Park Ridge	Internal Test Request:	13385/T/13004
Component:	Bulk Earthworks Fill	Client Reference/s:	
Area Description:	Stage 2	Report Date / Page:	10/05/2018 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/50750	13385/S/50751	13385/S/50752	13385/S/50753
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	2/05/2018 10:00	2/05/2018 10:10	2/05/2018 10:20	2/05/2018 10:30
Material Source	Imported	Imported	Imported	Imported
Material Type	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill	Bulk Earthworks Fill
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	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	200 / 225 / 225	200 / 225 / 225
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 294	Lot 296	Lot 298	Lot 299
	15mS from NE Boundary	4mS from NE Boundary	3mS from NE Boundary	7mS from NE Boundary
	7mW from NE Boundary	5mW from NE Boundary	13mW from NE Boundary	18mW 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/50750	13385/S/50751	13385/S/50752	13385/S/50753
Sample Description	CH CLAY red	CH CLAY red	CH CLAY red	CH CLAY red
Moisture Test Results:				
Field Moisture Content (%)	17.4	16.3	17.3	16.5
Adjusted / Moisture Variation (%)	0.0	0.0	-0.5	-0.5
Optimum Moisture Content (%)	17.5	16.0	17.0	16.0
Moisture Variation from OMC	(at OMC)	(Wetter than OMC)	(Wetter than OMC)	(Wetter than OMC)
Moisture Ratio (%)	100.0	101.0	102.5	102.0
Density Test Results:				
Field Wet Density (t/m³)	2.05	2.09	2.08	2.06
Adj/Peak Conv Wet Density (t/m³)	2.06	2.08	2.08	2.06
Density Ratio Required (%)	95	95	95	95
Hiif Density Ratio (%)	99.5	100.5	100.0	100.0

Remarks


 The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
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WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22404-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	
Location:	Park Ridge	Internal Test Request:	13385/T/13005
Component:	Bulk Earthworks Fill	Client Reference/s:	
Area Description:	Stage 2	Report Date / Page:	11/05/2018 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/50754	13385/S/50755	13385/S/50756	
ID / Client ID	-	-	-	
Lot Number	-	-	-	
Date / Time Tested	3/05/2018 10:00	3/05/2018 10:00	3/05/2018 10:00	
Material Source	Imported	Imported	Imported	
Material Type	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	
Depths: Test / Nom / Actual (mm)	200 / 225 / 225	200 / 225 / 225	200 / 225 / 225	
Standard or Modified	Standard	Standard	Standard	
Location	Lot 218 12mS from NE Boundary 7mW from NE Boundary	Lot 219 11mS from NE Boundary 14mW from NE Boundary	Lot 220 7mS from NE Boundary 13mW from NE Boundary	
Elevation m	FL	FL	FL	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	0	
Compaction Sample Number	13385/S/50754	13385/S/50755	13385/S/50756	
Sample Description	CH CLAY RED	CH CLAY RED	CH CLAY RED	
Moisture Test Results:				
Field Moisture Content (%)	16.0	16.1	16.9	
Adjusted / Moisture Variation (%)	0.0	0.5	0.0	
Optimum Moisture Content (%)	16.0	16.5	17.0	
Moisture Variation from OMC	(at OMC)	(Drier than OMC)	(Drier than OMC)	
Moisture Ratio (%)	100.0	97.0	99.5	
Density Test Results:				
Field Wet Density (t/m³)	2.11	2.12	2.11	
Adj/Peak Conv Wet Density (t/m³)	2.05	2.06	2.06	
Density Ratio Required (%)	95	95	95	
Hilf Density Ratio (%)	103.0	103.0	102.0	

Remarks


 The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
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 Approved Signatory: Mathew Tyrrell
Form ID: W5ASRep Rev 2

WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22405-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	
Location:	Park Ridge	Internal Test Request:	13385/T/13006
Component:	Bulk Earthworks Fill	Client Reference/s:	
Area Description:	Stage 2	Report Date / Page:	11/05/2018 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/50757	13385/S/50758	13385/S/50759	13385/S/50760
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	4/05/2018 10:00	4/05/2018 10:10	4/05/2018 10:20	4/05/2018 10:30
Material Source	Imported	Imported	Imported	Imported
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 225	Lot 224	Lot 223	Lot 222
	9mS from NE Boundary	12mS from NE Boundary	8mS from NE Boundary	7mS from NE Boundary
	26mW from NE Boundary	16mW from NE Boundary	11mW from NE Boundary	6mW 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/50757	13385/S/50758	13385/S/50759	13385/S/50760
Sample Description	CH CLAY RED	CH CLAY RED	CH CLAY RED	CH CLAY RED
Moisture Test Results:				
Field Moisture Content (%)	18.6	16.1	17.8	17.9
Adjusted / Moisture Variation (%)	0.0	0.0	0.0	0.0
Optimum Moisture Content (%)	18.5	16.0	17.5	18.0
Moisture Variation from OMC	(Wetter than OMC)	(at OMC)	(Wetter than OMC)	(Wetter than OMC)
Moisture Ratio (%)	101.0	100.0	101.0	100.5
Density Test Results:				
Field Wet Density (t/m ³)	2.15	2.13	2.08	2.10
Adj/Peak Conv Wet Density (t/m ³)	1.97	1.99	1.96	1.97
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	109.0	107.0	106.0	106.5

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/22513-2
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13036
Component:	Bulk Fill	Client Reference/s:	
Area Description:	Stg 2 Alotments	Report Date / Page:	21/05/2018 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/50946	13385/S/50947		
ID / Client ID	-	-		
Lot Number	311	314		
Date / Time Tested	14/05/2018 10:40	14/05/2018 10:40		
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: 311 13mS from NE Boundary 11mW from NE Boundary	Lot: 314 6mS from NE Boundary 5mW from NE Boundary		
Elevation m	35.823	35.276		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize (%)	0	0		
Compaction Sample Number	13385/S/50946	13385/S/50947		
Sample Description	CI SILTY CLAY, brown	CL SILTY CLAY, brown		
Moisture Test Results:				
Field Moisture Content (%)	14.3	15.7		
Adjusted / Moisture Variation (%)	2.5	2.5		
Optimum Moisture Content (%)	16.5	18.0		
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)		
Moisture Ratio (%)	85.5	87.0		
Density Test Results:				
Field Wet Density (t/m³)	2.10	2.10		
Adj/Peak Conv Wet Density (t/m³)	2.03	2.03		
Density Ratio Required (%)	95	95		
Hilf Density Ratio (%)	103.5	103.5		

Remarks	Re-Issued Report Replaces Report No 13385/R/22513-1.
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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/22538-2
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13061
Component:	Bulk Fill	Client Reference/s:	16/05/2018
Area Description:	Alotments	Report Date / Page:	22/05/2018 Page 1 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	13385/S/51163	13385/S/51164	13385/S/51165	13385/S/51166
ID / Client ID	-	-	-	-
Lot Number	303	305	307	128
Date / Time Tested	16/05/2018 13:30	16/05/2018 13:30	16/05/2018 13:30	16/05/2018 13:30
Material Source	Imported	Imported	Imported	Imported
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 303	Lot 305	Lot 307	Lot 128
	3mS from NE Boundary	4mS from NE Boundary	2mS from NE Boundary	8mS from NE Boundary
	23mW from NE Boundary	13mW from NE Boundary	16mW from NE Boundary	4mW from NE Boundary
Elevation m	FL	FL	FL	38.0198
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/51163	13385/S/51164	13385/S/51165	13385/S/51166
Sample Description	CI Sandy Clay Brown	CI Sandy Clay Brown	CL SILTY CLAY, brown	CL SILTY CLAY, brown
Moisture Test Results:				
Field Moisture Content (%)	11.6	11.3	11.0	11.2
Adjusted / Moisture Variation (%)	2.5	2.5	2.5	2.5
Optimum Moisture Content (%)	14.0	13.5	13.5	13.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	83.5	83.5	82.0	82.5
Density Test Results:				
Field Wet Density (t/m³)	2.18	2.18	2.18	2.17
Adj/Peak Conv Wet Density (t/m³)	2.05	2.03	2.08	2.09
Density Ratio Required (%)	95	95	95	95
Half Density Ratio (%)	106.5	107.0	104.5	103.5

Remarks	Re-Issued Report Replaces Report No 13385/R/22538-1.
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WET DENSITY RATIO REPORT

Client:	CCA Winslow	Report Number:	13385/R/22538-2
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	Various
Location:	Park Ridge	Internal Test Request:	13385/T/13061
Component:	Bulk Fill	Client Reference/s:	16/05/2018
Area Description:	Alotments	Report Date / Page:	22/05/2018 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/51167			
ID / Client ID	-			
Lot Number	131			
Date / Time Tested	16/05/2018 13:30			
Material Source	Imported			
Material Type	Fill			
Sampling Method	AS1289.1.2.1 Cl 6.4b			
Depths: Test / Nom / Actual (mm)	200 / 200 / 200			
Standard or Modified	Standard			
Location	Lot 131			
	5mS from NE Boundary			
	16mW from NE Boundary			
Elevation m	FL			
Test Fraction (mm)	< 19.0 mm			
Sample Oversize (%)	0			
Compaction Sample Number	13385/S/51167			
Sample Description	CL SILTY CLAY,brown			
Moisture Test Results:				
Field Moisture Content (%)	11.5			
Adjusted / Moisture Variation (%)	2.5			
Optimum Moisture Content (%)	14.0			
Moisture Variation from OMC	(Drier than OMC)			
Moisture Ratio (%)	83.5			
Density Test Results:				
Field Wet Density (t/m³)	2.18			
Adj/Peak Conv Wet Density (t/m³)	2.08			
Density Ratio Required (%)	95			
Hilf Density Ratio (%)	105.0			

Remarks	Re-Issued Report Replaces Report No 13385/R/22538-1.
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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/22626-1
Client Address:	1587 Ipswich Road, ROCKLEA	Project Number:	13385/P/929
Project:	(Stage 2) 409-429 Park Ridge Road	Lot Number:	
Location:	Park Ridge	Internal Test Request:	13385/T/13113
Component:	Bulk Earthworks Fill	Client Reference/s:	
Area Description:	Stage 2	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/51446	13385/S/51447	13385/S/51448	13385/S/51449
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	22/05/2018 09:00	22/05/2018 09:00	22/05/2018 09:00	22/05/2018 09:00
Material Source	Imported	Imported	Imported	Imported
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 115	Lot 116	Lot 117	Lot 118
	10mS from NE Boundary	12mS from NE Boundary	7mS from NE Boundary	2mS from NE Boundary
	13mW from NE Boundary	18mW from NE Boundary	26mW from NE Boundary	18mW 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/51446	13385/S/51447	13385/S/51448	13385/S/51449
Sample Description	CL SILTY CLAY brown	CL SILTY CLAY brown	CL SILTY CLAY brown	CL SILTY CLAY brown
Moisture Test Results:				
Field Moisture Content (%)	11.3	11.6	11.4	11.1
Adjusted / Moisture Variation (%)	0.0	1.5	0.5	2.5
Optimum Moisture Content (%)	11.5	13.0	11.5	13.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	99.0	88.0	97.5	81.0
Density Test Results:				
Field Wet Density (t/m ³)	2.14	2.13	2.16	2.14
Adj/Peak Conv Wet Density (t/m ³)	2.08	2.13	2.09	2.05
Density Ratio Required (%)	100	100	100	100
HiIf Density Ratio (%)	103.0	100.0	103.5	104.0

Remarks



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