

WORKS INSPECTION & TESTING Bulk Earthworks

PROPOSED
RESIDENTIAL
DEVELOPMENT

**Woodlinks Estate
Stage 23A**

JOB NO: P2052 comp01



Prepared for Shadforths Civil Contractors

10th August 2021

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P2052 comp 01	10/08/2021	Wayne Gorman	WG	Mathew Ketchup	MK	
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Contact : Wayne Gorman
wayne.gorman@constructionsciences.net
1 Fox Road
Acacia Ridge QLD 4110

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INTRODUCTION

Construction Sciences was commissioned by **Shadforths Civil Contractors** to carry out the geotechnical inspection and testing required for the proposed development at Woodlinks Estate Stage 23A - Collingwood Park, which was carried out between 18th May and 28th July 2021.

SCOPE OF WORKS

The Earthworks on this development was 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 3798-2007.

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, **PEAKURBAN Development Engineers + Advisors** and to the specifications of the local authority, **Ipswich 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	
Item	Minimum Compaction Requirement
<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. 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 gravelly to silty, sandy CLAYS.

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

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 48 field density tests were carried out throughout the earthworks. The average wet density ratio was recorded to be 98.6%. The maximum wet density ratio was 103.0% and minimum was 95.5%.

CONCLUSION

We confirm that:

- (a) Our representative was in full time site attendance whilst bulk earthworks filling was in progress between 18th May and 28th July 2021 at Woodlinks Estate Stage 23A - Collingwood Park.
- (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 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.
- (e) All test results pertaining to the development are included within appendix A of this report.



WAYNE GORMAN
LABORATORY MANAGER
Construction Sciences



CLIENT:	SHADFORTH'S CIVIL CONTRACTORS	JOB No.:	P 2052
PROJECT:	WOODLINKS ESTATE STAGE 23A	SKETCH No.:	SK 1
TEST ITEM:	SITE PHOTOS	DATE ISSUED:	10/08/2021



CLIENT: SHADFORTHS CIVIL CONTRACTORS	JOB No.: P 2052
PROJECT: WOODLINKS ESTATE STAGE 23A	SKETCH No.: SK 2
TEST ITEM: SITE PHOTOS	DATE ISSUED: 10/08/2021



CLIENT: SHADFORTHS CIVIL CONTRACTORS	JOB No.: P 2052
PROJECT: WOODLINKS ESTATE STAGE 23A	SKETCH No.: SK 3
TEST ITEM: SITE PHOTOS	DATE ISSUED: 10/08/2021

Client: Shadforth's Civil Contractors

Project: 1979/P/2052 - Woodlinks Estate Stage 23A

Sample Client Reference	Sample Number	Sample Date/Time	Source	Material	Easting	Northing	RL	Allotment	Wet Density Ratio	Moisture Variation
EW01	1979/S/159181	18/05/2021 8:00:00 AM	On-Site	Bulk Fill	Lot 373	4m Off North Boundary	6m Off East Boundary	1st Lift	100.0	2.0
EW02	1979/S/159182	18/05/2021 8:10:00 AM	On-Site	Bulk Fill	Lot 375	2m Off North Boundary	3m Off East Boundary	1st Lift	100.5	2.0
EW03	1979/S/161942	18/06/2021 9:14:00 AM	On-Site	Bulk Fill	Lot 334	4m Off North Boundary	3m Off West Boundary	F.S.L	98.0	2.0
EW04	1979/S/161943	18/06/2021 9:32:00 AM	On-Site	Bulk Fill	Lot 335	3m Off North Boundary	3m Off West Boundary	F.S.L	98.0	2.0
EW05	1979/S/161944	18/06/2021 9:41:00 AM	On-Site	Bulk Fill	Lot 336	3m Off North Boundary	3m Off West Boundary	F.S.L	99.0	2.0
EW06	1979/S/161945	18/06/2021 9:45:00 AM	On-Site	Embankment Fill	Road 11	CH 280	1.1m L CL	0.9m Below F.S.L	100.0	2.0
EW07	1979/S/161946	18/06/2021 9:51:00 AM	On-Site	Embankment Fill	Road 11	CH 240	0.4m R CL	0.7m Below F.S.L	101.0	2.5
EW08	1979/S/161947	18/06/2021 9:57:00 AM	On-Site	Embankment Fill	Road 11	CH 220	1.2m R CL	1.0m Below F.S.L	100.5	0.0
EW09	1979/S/162122	22/06/2021 8:50:00 AM	On-Site	Embankment Fill	Road 11	CH 260	0.4m L CL	0.5m Below F.S.L	101.0	2.5
EW10	1979/S/162123	22/06/2021 8:50:00 AM	On-Site	Embankment Fill	Road 11	CH 220	0.9m R CL	F.S.L	101.5	2.5
EW11	1979/S/162124	22/06/2021 8:50:00 AM	On-Site	Embankment Fill	Road 11	CH 200	1.6m R CL	F.S.L	102.0	2.0
EW12	1979/S/162125	22/06/2021 8:50:00 AM	On-Site	Embankment Fill	Road 11	CH 240	CL	F.S.L	101.0	2.0
EW13	1979/S/162126	22/06/2021 8:50:00 AM	On-Site	Embankment Fill	Road 11	CH 180	1.1m R CL	F.S.L	102.0	1.5
EW14	1979/S/162127	22/06/2021 8:50:00 AM	On-Site	Embankment Fill	Road 11	CH 200	2.4m L CL	F.S.L	103.0	2.5
EW15	1979/S/162237	23/06/2021 12:34:00 PM	On-Site	Bulk Fill	Lot 341	6m Off North Boundary	4m Off West Boundary	0.4m Below F.S.L	98.0	2.5
EW16	1979/S/162238	23/06/2021 12:39:00 PM	On-Site	Bulk Fill	Lot 342	6m Off North Boundary	4m Off West Boundary	0.4m Below F.S.L	96.5	0.5
EW17	1979/S/162239	23/06/2021 12:46:00 PM	On-Site	Bulk Fill	Lot 343	3m Off North Boundary	6m Off West Boundary	F.S.L	98.5	2.5
EW18	1979/S/162240	23/06/2021 12:49:00 PM	On-Site	Bulk Fill	Lot 344	3m Off North Boundary	6m Off West Boundary	0.5m Below F.S.L	99.0	2.0
EW19	1979/S/162241	23/06/2021 12:53:00 PM	On-Site	Bulk Fill	Lot 348	2m Off North Boundary	3m Off West Boundary	0.5m Below F.S.L	96.0	0.5
EW20	1979/S/162242	23/06/2021 1:04:00 PM	On-Site	Bulk Fill	Lot 349	2m Off North Boundary	3m Off West Boundary	0.5m Below F.S.L	98.5	0.0
EW21	1979/S/162733	29/06/2021 10:09:00 AM	On-Site	Bulk Fill	Lot 340	4m Off North Boundary	3m Off East Boundary	F.S.L	97.5	2.5
EW22	1979/S/162734	29/06/2021 10:14:00 AM	On-Site	Bulk Fill	Lot 339	4m Off North Boundary	6m Off East Boundary	F.S.L	99.0	2.0
EW23	1979/S/162735	29/06/2021 10:19:00 AM	On-Site	Bulk Fill	Lot 338	4m Off North Boundary	6m Off East Boundary	F.S.L	98.5	2.0
EW24	1979/S/162736	29/06/2021 10:24:00 AM	On-Site	Bulk Fill	Lot 337	4m Off North Boundary	6m Off East Boundary	F.S.L	99.0	1.5
EW25	1979/S/162737	29/06/2021 10:29:00 AM	On-Site	Bulk Fill	Lot 336	4m Off North Boundary	6m Off East Boundary	F.S.L	100.0	2.5
EW26	1979/S/162738	29/06/2021 10:36:00 AM	On-Site	Bulk Fill	Lot 349	4m Off South Boundary	4m Off East Boundary	F.S.L	98.0	2.0
EW27	1979/S/162739	29/06/2021 10:44:00 AM	On-Site	Bulk Fill	Lot 348	2m Off North Boundary	4m Off West Boundary	F.S.L	97.5	2.0
EW28	1979/S/162740	29/06/2021 10:54:00 AM	On-Site	Bulk Fill	Lot 347	6m Off North Boundary	6m Off West Boundary	F.S.L	100.0	1.5
EW29	1979/S/162741	29/06/2021 11:06:00 AM	On-Site	Bulk Fill	Lot 346	5m Off North Boundary	6m Off West Boundary	F.S.L	98.5	2.5
EW30	1979/S/162742	29/06/2021 11:40:00 AM	On-Site	Bulk Fill	Lot 373	5m Off North Boundary	6m Off West Boundary	0.5m Below F.S.L	96.5	0.0
EW31	1979/S/162743	29/06/2021 11:50:00 AM	On-Site	Bulk Fill	Lot 374	3m Off North Boundary	6m Off West Boundary	0.5m Below F.S.L	100.0	-0.5
EW32	1979/S/162744	29/06/2021 12:00:00 PM	On-Site	Bulk Fill	Lot 383	6m Off North Boundary	6m Off West Boundary	0.5m Below F.S.L	101.0	0.0
EW33	1979/S/163909	13/07/2021 10:40:00 AM	On-Site	Bulk Fill	Lot 382	2m Off North Boundary	2m Off East Boundary	0.5m Below F.S.L	97.5	2.0
EW34	1979/S/163910	13/07/2021 10:50:00 AM	On-Site	Bulk Fill	Lot 382	3m Off North Boundary	8m Off East Boundary	F.S.L	98.0	2.0
EW35	1979/S/163911	13/07/2021 11:00:00 AM	On-Site	Bulk Fill	Lot 381	4m Off North Boundary	4m Off East Boundary	0.5m Below F.S.L	95.5	2.5
EW36	1979/S/163912	13/07/2021 11:10:00 AM	On-Site	Bulk Fill	Lot 381	9m Off North Boundary	10m Off East Boundary	F.S.L	97.0	2.0
EW37	1979/S/163913	13/07/2021 11:19:00 AM	On-Site	Bulk Fill	Lot 383	4m Off North Boundary	3m Off East Boundary	0.5m Below F.S.L	96.5	2.5
EW38	1979/S/163914	13/07/2021 11:24:00 AM	On-Site	Bulk Fill	Lot 383	8m Off North Boundary	6m Off East Boundary	F.S.L	96.5	0.5
EW39	1979/S/163915	13/07/2021 11:34:00 AM	On-Site	Bulk Fill	Lot 380	4m Off North Boundary	3m Off East Boundary	0.5m Below F.S.L	96.0	3.0
EW40	1979/S/163916	13/07/2021 11:49:00 AM	On-Site	Bulk Fill	Lot 380	9m Off North Boundary	6m Off East Boundary	F.S.L	95.5	2.0
EW41	1979/S/163917	13/07/2021 11:55:00 AM	On-Site	Bulk Fill	Lot 379	3m Off North Boundary	3m Off East Boundary	0.5m Below F.S.L	95.5	2.5
EW42	1979/S/163918	13/07/2021 12:01:00 PM	On-Site	Bulk Fill	Lot 379	8m Off North Boundary	6m Off East Boundary	F.S.L	96.0	1.5
EW43	1979/S/163919	13/07/2021 12:24:00 PM	On-Site	Bulk Fill	Lot 373	6m Off North Boundary	3m Off East Boundary	0.5m Below F.S.L	96.5	2.5
EW44	1979/S/163920	13/07/2021 12:30:00 PM	On-Site	Bulk Fill	Lot 374	6m Off North Boundary	3m Off East Boundary	0.5m Below F.S.L	98.0	2.0

Client: Shadforths Civil Contractors	Project: 1979/P/2052 - Woodlinks Estate Stage 23A
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Sample Client Reference	Sample Number	Sample Date/Time	Source	Material	Easting	Northing	RL	Allotment	Wet Density Ratio	Moisture Variation
-	1979/S/166156	23/07/2021 8:20:00 AM	On-Site	Bulk Fill	Rd 11 - Colwd. Dr Tie - In	60	2m off rd	FSL	98.5	2.5
-	1979/S/166157	23/07/2021 8:30:00 AM	On-Site	Bulk Fill	Rd 11 - Colwd. Dr Tie - In	50	1.6m off rd	FSL	98.5	1.5
-	1979/S/166158	23/07/2021 8:40:00 AM	On-Site	Bulk Fill	Rd 11 - Colwd. Dr Tie - In	40	2.4m off rd	FSL	98.5	2.5
	1979/S/165220	28/07/2021 2:10:00 PM	On-Site	Bulk Fill	Lot 363	Offset South/West Corner	10m Nth, 15m East	RL: 44.7	98.5	2.0

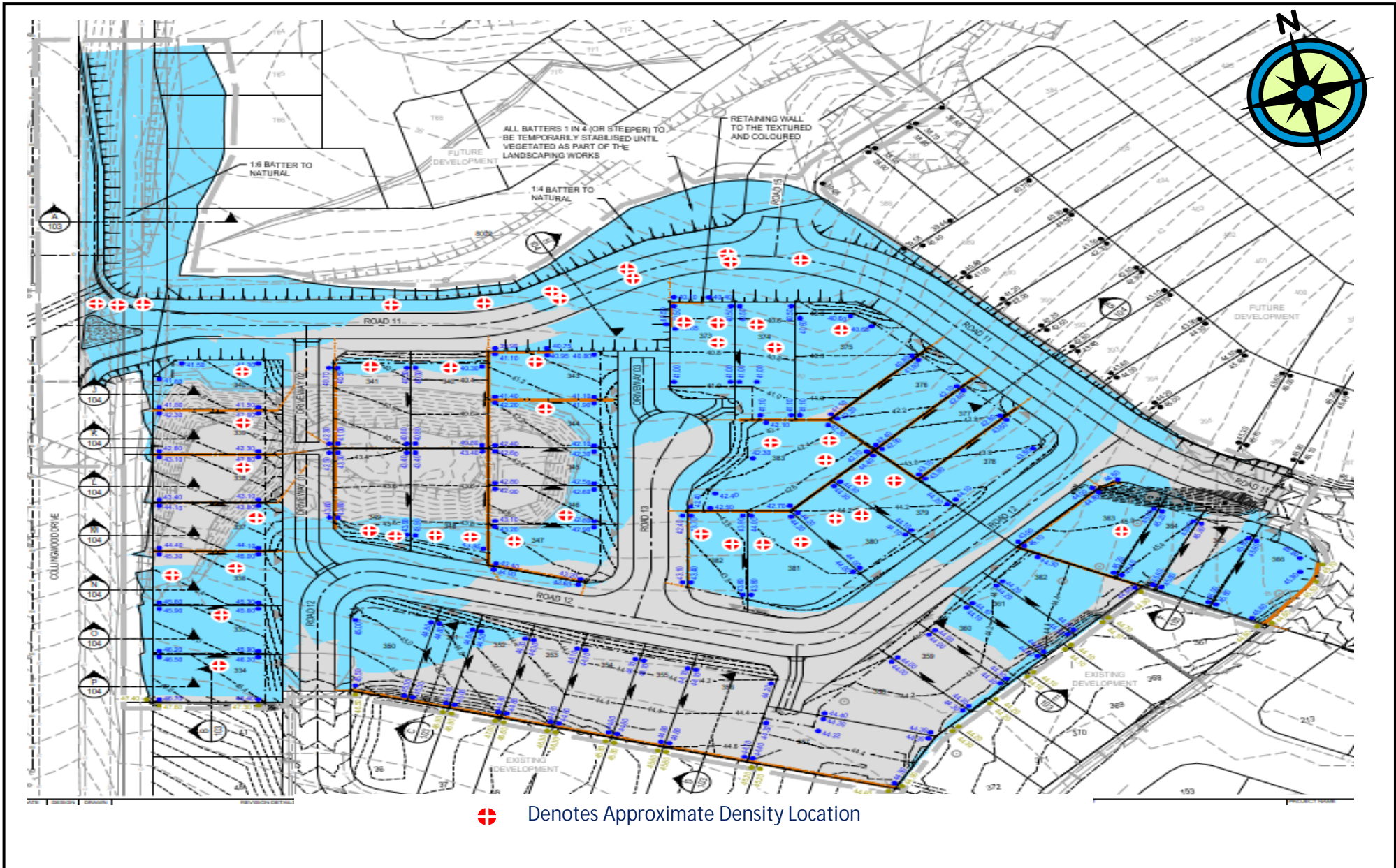
TABLE 1

APPENDIX

A

BULK EARTHWORKS
FILL







WET DENSITY RATIO REPORT

Client: Shadforth's Civil Contractors	Report Number: 1979/R/58096-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number: 18/05/2021
Location: Collingwood Park	Internal Test Request: 1979/T/31363
Component: Compaction testing	Client Reference/s: WR4813
Area Description: Bulk Fill	Report Date / Page: 9/06/2021 Page 1 of 1

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/159181	1979/S/159182	
ID / Client ID	EW01	EW02	
Lot Number	18/05/2021	18/05/2021	
Date / Time Tested	18/05/2021 08:00	18/05/2021 08:10	
Material Source	On-Site	On-Site	
Material Type	Bulk Fill	Bulk Fill	
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	
Depths: Test / Nom / Actual (mm)	175 / 200 / 200	175 / 200 / 200	
Standard or Modified	Standard	Standard	
Location	Lot 373	Lot 375	
	4m Off North Boundary	2m Off North Boundary	
	6m Off East Boundary	3m Off East Boundary	
Level	1st Lift	1st Lift	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	
Compaction Sample Number	1979/S/159181	1979/S/159182	
Sample Description	Sandy CLAY - Brown	Sandy CLAY - Brown	
Moisture Test Results:			
Field Moisture Content (%)	12.2	11.6	
Adjusted / Moisture Variation (%)	2.0	2.0	
Optimum Moisture Content (%)	14.5	13.5	
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	
Moisture Ratio (%)	85.5	86.0	
Density Test Results:			
Field Wet Density (t/m ³)	2.18	2.24	
Adj/Peak Conv Wet Density (t/m ³)	2.17	2.23	
Density Ratio Required (%)	95	95	
Hilf Density Ratio (%)	100.0	100.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing		
	Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Dean Stimpson Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors	Report Number: 1979/R/59840-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number: 18/06/2021
Location: Collingwood Park	Internal Test Request: 1979/T/31363
Component: Compaction testing	Client Reference/s: Earthworks WR 6519, WR 6524
Area Description: Bulk Fill	Report Date / Page: 16/07/2021 Page 1 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/161942	1979/S/161943	1979/S/161944	1979/S/161945
ID / Client ID	EW03	EW04	EW05	EW06
Lot Number	18/06/2021	18/06/2021	18/06/2021	18/06/2021
Date / Time Tested	18/06/2021 09:14	18/06/2021 09:32	18/06/2021 09:41	18/06/2021 09:45
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	Embankment 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)	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 334	Lot 335	Lot 336	Road 11
	4m Off North Boundary	3m Off North Boundary	3m Off North Boundary	CH 280
	3m Off West Boundary	3m Off West Boundary	3m Off West Boundary	1.1m L CL
Level	F.S.L	F.S.L	F.S.L	0.9m Below F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/161942	1979/S/161943	1979/S/161944	1979/S/161945
Sample Description	Brown Sandy Clay	Brown Sandy Clay	Brown Sandy Clay	Brown Sandy Clay
Moisture Test Results:				
Field Moisture Content (%)	16.2	18.7	19.2	22.8
Adjusted / Moisture Variation (%)	2.0	2.0	2.0	2.0
Optimum Moisture Content (%)	18.5	21.0	21.0	25.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	88.0	89.0	90.5	91.0
Density Test Results:				
Field Wet Density (t/m ³)	2.04	2.02	2.04	2.02
Adj/Peak Conv Wet Density (t/m ³)	2.08	2.06	2.06	2.02
Density Ratio Required (%)	95	95	95	100
Hilf Density Ratio (%)	98.0	98.0	99.0	100.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforth's Civil Contractors Client Address: 99 Sandalwood Lane, Forest Glen Project: Woodlinks Estate Stage 23A Location: Collingwood Park Component: Compaction testing Area Description: Bulk Fill	Report Number: 1979/R/59840-1 Project Number: 1979/P/2052 Lot Number: 18/06/2021 Internal Test Request: 1979/T/31363 Client Reference/s: Earthworks WR 6519, WR 6524 Report Date / Page: 16/07/2021 Page 2 of 2
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Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/161946	1979/S/161947	
ID / Client ID	EW07	EW08	
Lot Number	18/06/2021	18/06/2021	
Date / Time Tested	18/06/2021 09:51	18/06/2021 09:57	
Material Source	On-Site	On-Site	
Material Type	Embankment Fill	Embankment Fill	
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	
Depths: Test / Nom / Actual (mm)	175 / 200 / 200	175 / 200 / 200	
Standard or Modified	Standard	Standard	
Location	Road 11	Road 11	
	CH 240	CH 220	
	0.4m R CL	1.2m R CL	
Level	0.7m Below F.S.L	1.0m Below F.S.L	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	
Compaction Sample Number	1979/S/161946	1979/S/161947	
Sample Description	Brown Sandy Clay	Brown Sandy Clay	
Moisture Test Results:			
Field Moisture Content (%)	17.4	24.1	
Adjusted / Moisture Variation (%)	2.5	0.0	
Optimum Moisture Content (%)	20.0	24.0	
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	
Moisture Ratio (%)	87.5	99.5	
Density Test Results:			
Field Wet Density (t/m ³)	2.06	2.01	
Adj/Peak Conv Wet Density (t/m ³)	2.04	2.00	
Density Ratio Required (%)	100	100	
Hilf Density Ratio (%)	101.0	100.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2
Accreditation Number: 1986 Corporate Site Number: 1979	

WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors Client Address: 99 Sandalwood Lane, Forest Glen Project: Woodlinks Estate Stage 23A Location: Collingwood Park Component: Compaction testing Area Description: Bulk Fill	Report Number: 1979/R/59843-1 Project Number: 1979/P/2052 Lot Number: 22/06/2021 Internal Test Request: 1979/T/31363 Client Reference/s: Earthworks WR 6519, WR 6524 Report Date / Page: 16/07/2021 Page 1 of 2
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Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/162122	1979/S/162123	1979/S/162124	1979/S/162125
ID / Client ID	EW09	EW10	EW11	EW12
Lot Number	22/06/2021	22/06/2021	22/06/2021	22/06/2021
Date / Time Tested	22/06/2021 08:50	22/06/2021 08:50	22/06/2021 08:50	22/06/2021 08:50
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Embankment Fill	Embankment Fill	Embankment Fill	Embankment 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)	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Road:	Road 11	Road 11	Road 11	Road 11
Chainage	m CH 260	m CH 220	m CH 200	m CH 240
Offset	m 0.4m L CL	m 0.9m R CL	m 1.6m R CL	m CL
Level	m 0.5m Below F.S.L	m F.S.L	m F.S.L	m F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/162122	1979/S/162123	1979/S/162124	1979/S/162125
Sample Description	Gravelly Sandy Clay Brown	Gravelly Sandy Clay Brown	Gravelly Sandy Clay Brown	Gravelly Sandy Clay Brown
Moisture Test Results:				
Field Moisture Content (%)	11.2	11.5	14.0	11.1
Adjusted / Moisture Variation (%)	2.5	2.5	2.0	2.0
Optimum Moisture Content (%)	14.0	14.0	16.0	13.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	80.5	83.5	87.0	83.5
Density Test Results:				
Field Wet Density (t/m ³)	2.15	2.16	2.18	2.14
Adj/Peak Conv Wet Density (t/m ³)	2.13	2.13	2.13	2.12
Density Ratio Required (%)	100	100	100	100
Hilf Density Ratio (%)	101.0	101.5	102.0	101.0

Remarks

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 Accreditation Number: 1986
 Corporate Site Number: 1979



Approved Signatory: Wayne Gorman

Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors	Report Number: 1979/R/59843-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number: 22/06/2021
Location: Collingwood Park	Internal Test Request: 1979/T/31363
Component: Compaction testing	Client Reference/s: Earthworks WR 6519, WR 6524
Area Description: Bulk Fill	Report Date / Page: 16/07/2021 Page 2 of 2

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/162126	1979/S/162127	
ID / Client ID	EW13	EW14	
Lot Number	22/06/2021	22/06/2021	
Date / Time Tested	22/06/2021 08:50	22/06/2021 08:50	
Material Source	On-Site	On-Site	
Material Type	Embankment Fill	Embankment Fill	
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	
Depths: Test / Nom / Actual (mm)	175 / 200 / 200	175 / 200 / 200	
Standard or Modified	Standard	Standard	
Road:	Road 11	Road 11	
Chainage	m CH 180	m CH 200	
Offset	m 1.1m R CL	m 2.4m L CL	
Level	m F.S.L	m F.S.L	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	
Compaction Sample Number	1979/S/162126	1979/S/162127	
Sample Description	Gravelly Sandy Clay Brown	Gravelly Sandy Clay Brown	
Moisture Test Results:			
Field Moisture Content (%)	12.3	12.2	
Adjusted / Moisture Variation (%)	1.5	2.5	
Optimum Moisture Content (%)	14.0	15.0	
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	
Moisture Ratio (%)	88.5	82.5	
Density Test Results:			
Field Wet Density (t/m ³)	2.19	2.19	
Adj/Peak Conv Wet Density (t/m ³)	2.14	2.13	
Density Ratio Required (%)	100	100	
Hilf Density Ratio (%)	102.0	103.0	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2

WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors Client Address: 99 Sandalwood Lane, Forest Glen Project: Woodlinks Estate Stage 23A Location: Collingwood Park Component: Compaction testing Area Description: Bulk Fill	Report Number: 1979/R/59845-1 Project Number: 1979/P/2052 Lot Number: 23/06/2021 Internal Test Request: 1979/T/31363 Client Reference/s: Earthworks WR 6519, WR 6524 Report Date / Page: 16/07/2021 Page 1 of 2
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Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/162237	1979/S/162238	1979/S/162239	1979/S/162240
ID / Client ID	EW15	EW16	EW17	EW18
Lot Number	23/06/2021	23/06/2021	23/06/2021	23/06/2021
Date / Time Tested	23/06/2021 12:34	23/06/2021 12:39	23/06/2021 12:46	23/06/2021 12:49
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	Bulk 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)	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 341	Lot 342	Lot 343	Lot 344
	6m Off North Boundary	6m Off North Boundary	3m Off North Boundary	3m Off North Boundary
	4m Off West Boundary	4m Off West Boundary	6m Off West Boundary	6m Off West Boundary
Level	0.4m Below F.S.L	0.4m Below F.S.L	F.S.L	0.5m Below F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/162237	1979/S/162238	1979/S/162239	1979/S/162240
Sample Description	Brown Sandy Clay	Brown Sandy Clay	Brown Sandy Clay	Brown Sandy Clay
Moisture Test Results:				
Field Moisture Content (%)	20.8	22.1	20.1	21.6
Adjusted / Moisture Variation (%)	2.5	0.5	2.5	2.0
Optimum Moisture Content (%)	23.5	22.5	23.0	24.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	89.5	98.0	88.0	91.0
Density Test Results:				
Field Wet Density (t/m ³)	2.05	1.92	2.12	2.11
Adj/Peak Conv Wet Density (t/m ³)	2.09	1.99	2.15	2.13
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	98.0	96.5	98.5	99.0

Remarks

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 Accreditation Number: 1986
 Corporate Site Number: 1979



Approved Signatory: Wayne Gorman

Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors Client Address: 99 Sandalwood Lane, Forest Glen Project: Woodlinks Estate Stage 23A Location: Collingwood Park Component: Compaction testing Area Description: Bulk Fill	Report Number: 1979/R/59845-1 Project Number: 1979/P/2052 Lot Number: 23/06/2021 Internal Test Request: 1979/T/31363 Client Reference/s: Earthworks WR 6519,WR 6524 Report Date / Page: 16/07/2021 Page 2 of 2
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Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/162241	1979/S/162242	
ID / Client ID	EW19	EW20	
Lot Number	23/06/2021	23/06/2021	
Date / Time Tested	23/06/2021 12:53	23/06/2021 13:04	
Material Source	On-Site	On-Site	
Material Type	Bulk Fill	Bulk Fill	
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	
Depths: Test / Nom / Actual (mm)	175 / 200 / 200	175 / 200 / 200	
Standard or Modified	Standard	Standard	
Location	Lot 348	Lot 349	
	2m Off North Boundary	2m Off North Boundary	
	3m Off West Boundary	3m Off West Boundary	
Level	0.5m Below F.S.L	0.5m Below F.S.L	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	
Compaction Sample Number	1979/S/162241	1979/S/162242	
Sample Description	Brown Sandy Clay	Brown Sandy Clay	
Moisture Test Results:			
Field Moisture Content (%)	23.3	24.9	
Adjusted / Moisture Variation (%)	0.5	0.0	
Optimum Moisture Content (%)	24.0	25.0	
Moisture Variation from OMC	(Drier than OMC)	(at OMC)	
Moisture Ratio (%)	98.0	100.0	
Density Test Results:			
Field Wet Density (t/m ³)	1.97	1.90	
Adj/Peak Conv Wet Density (t/m ³)	2.05	1.92	
Density Ratio Required (%)	95	95	
Hilf Density Ratio (%)	96.0	98.5	

Remarks

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 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors Client Address: 99 Sandalwood Lane, Forest Glen Project: Woodlinks Estate Stage 23A Location: Collingwood Park Component: Compaction testing Area Description: Bulk Fill	Report Number: 1979/R/59909-1 Project Number: 1979/P/2052 Lot Number: 29/06/2021 Internal Test Request: 1979/T/31363 Client Reference/s: Earthworks WR 6519, WR 6524, Report Date / Page: 20/07/2021 Page 1 of 3
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Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/162733	1979/S/162734	1979/S/162735	1979/S/162736
ID / Client ID	EW21	EW22	EW23	EW24
Lot Number	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Date / Time Tested	29/06/2021 10:09	29/06/2021 10:14	29/06/2021 10:19	29/06/2021 10:24
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	Bulk 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)	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 340	Lot 339	Lot 338	Lot 337
	4m Off North Boundary	4m Off North Boundary	4m Off North Boundary	4m Off North Boundary
	3m Off East Boundary	6m Off East Boundary	6m Off East Boundary	6m Off East Boundary
Level	F.S.L	F.S.L	F.S.L	F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/162733	1979/S/162734	1979/S/162735	1979/S/162736
Sample Description	Sandy Silty Clay Brown	Sandy Silty Clay Brown	Sandy Silty Clay Brown	Sandy Silty Clay Brown
Moisture Test Results:				
Field Moisture Content (%)	14.6	13.2	12.0	15.0
Adjusted / Moisture Variation (%)	2.5	2.0	2.0	1.5
Optimum Moisture Content (%)	17.0	15.0	14.0	16.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	85.5	87.5	85.5	90.0
Density Test Results:				
Field Wet Density (t/m ³)	2.17	2.14	2.14	2.18
Adj/Peak Conv Wet Density (t/m ³)	2.22	2.16	2.17	2.20
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	97.5	99.0	98.5	99.0

Remarks

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WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors Client Address: 99 Sandalwood Lane, Forest Glen Project: Woodlinks Estate Stage 23A Location: Collingwood Park Component: Compaction testing Area Description: Bulk Fill	Report Number: 1979/R/59909-1 Project Number: 1979/P/2052 Lot Number: 29/06/2021 Internal Test Request: 1979/T/31363 Client Reference/s: Earthworks WR 6519, WR 6524, Report Date / Page: 20/07/2021 Page 2 of 3
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Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/162737	1979/S/162738	1979/S/162739	1979/S/162740
ID / Client ID	EW25	EW26	EW27	EW28
Lot Number	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Date / Time Tested	29/06/2021 10:29	29/06/2021 10:36	29/06/2021 10:44	29/06/2021 10:54
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	Bulk 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)	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 336 4m Off North Boundary 6m Off East Boundary	Lot 349 4m Off South Boundary 4m Off East Boundary	Lot 348 2m Off North Boundary 4m Off West Boundary	Lot 347 6m Off North Boundary 6m Off West Boundary
Level	F.S.L	F.S.L	F.S.L	F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/162737	1979/S/162738	1979/S/162739	1979/S/162740
Sample Description	Sandy Silty Clay Brown	Sandy Silty Clay Brown	Sandy Silty Clay Brown	Sandy Silty Clay Brown
Moisture Test Results:				
Field Moisture Content (%)	12.4	13.1	12.0	11.4
Adjusted / Moisture Variation (%)	2.5	2.0	2.0	1.5
Optimum Moisture Content (%)	15.0	15.0	14.0	13.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	83.0	87.0	85.5	87.5
Density Test Results:				
Field Wet Density (t/m ³)	2.15	2.15	2.14	2.15
Adj/Peak Conv Wet Density (t/m ³)	2.14	2.19	2.19	2.16
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	100.0	98.0	97.5	100.0

Remarks

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WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors	Report Number: 1979/R/59909-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number: 29/06/2021
Location: Collingwood Park	Internal Test Request: 1979/T/31363
Component: Compaction testing	Client Reference/s: Earthworks WR 6519, WR 6524,
Area Description: Bulk Fill	Report Date / Page: 20/07/2021 Page 3 of 3

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/162741	1979/S/162742	1979/S/162743	1979/S/162744
ID / Client ID	EW29	EW30	EW31	EW32
Lot Number	29/06/2021	29/06/2021	29/06/2021	29/06/2021
Date / Time Tested	29/06/2021 11:06	29/06/2021 11:40	29/06/2021 11:50	29/06/2021 12:00
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	Bulk 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)	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200	175 / 200 / 200
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 346	Lot 373	Lot 374	Lot 383
	5m Off North Boundary	5m Off North Boundary	3m Off North Boundary	6m Off North Boundary
	6m Off West Boundary	6m Off West Boundary	6m Off West Boundary	6m Off West Boundary
Level	F.S.L	0.5m Below F.S.L	0.5m Below F.S.L	0.5m Below F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/162741	1979/S/162742	1979/S/162743	1979/S/162744
Sample Description	Sandy Silty Clay Brown	Sandy Silty Clay Brown	Sandy Silty Clay Brown	Sandy Silty Clay Brown
Moisture Test Results:				
Field Moisture Content (%)	10.5	16.6	15.9	17.1
Adjusted / Moisture Variation (%)	2.5	0.0	-0.5	0.0
Optimum Moisture Content (%)	13.0	16.5	15.0	17.0
Moisture Variation from OMC	(Drier than OMC)	(at OMC)	(Wetter than OMC)	(Drier than OMC)
Moisture Ratio (%)	82.0	100.0	104.5	99.5
Density Test Results:				
Field Wet Density (t/m ³)	2.14	2.01	2.20	2.18
Adj/Peak Conv Wet Density (t/m ³)	2.17	2.09	2.20	2.16
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	98.5	96.5	100.0	101.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors	Report Number: 1979/R/60503-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number: 13/07/2021
Location: Collingwood Park	Internal Test Request: 1979/T/31363
Component: Compaction testing	Client Reference/s: Earthworks WR 6519, WR 6524
Area Description: Bulk Fill	Report Date / Page: 6/08/2021 Page 1 of 3

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/163909	1979/S/163910	1979/S/163911	1979/S/163912
ID / Client ID	EW33	EW34	EW35	EW36
Lot Number	13/07/2021	13/07/2021	13/07/2021	13/07/2021
Date / Time Tested	13/07/2021 10:40	13/07/2021 10:50	13/07/2021 11:00	13/07/2021 11:10
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	Bulk 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)	175 / 200 / -	175 / 200 / -	175 / 200 / -	175 / 200 / -
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 382	Lot 382	Lot 381	Lot 381
	2m Off North Boundary	3m Off North Boundary	4m Off North Boundary	9m Off North Boundary
	2m Off East Boundary	8m Off East Boundary	4m Off East Boundary	10m Off East Boundary
Level	0.5m Below F.S.L	F.S.L	0.5m Below F.S.L	F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/163909	1979/S/163910	1979/S/163911	1979/S/163912
Sample Description	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown
Moisture Test Results:				
Field Moisture Content (%)	21.9	22.5	19.5	22.6
Adjusted / Moisture Variation (%)	2.0	2.0	2.5	2.0
Optimum Moisture Content (%)	24.0	24.5	22.0	24.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	90.5	92.0	88.5	92.0
Density Test Results:				
Field Wet Density (t/m ³)	2.09	2.07	2.03	2.07
Adj/Peak Conv Wet Density (t/m ³)	2.14	2.10	2.12	2.14
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	97.5	98.0	95.5	97.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors	Report Number: 1979/R/60503-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number: 13/07/2021
Location: Collingwood Park	Internal Test Request: 1979/T/31363
Component: Compaction testing	Client Reference/s: Earthworks WR 6519, WR 6524
Area Description: Bulk Fill	Report Date / Page: 6/08/2021 Page 2 of 3

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/163913	1979/S/163914	1979/S/163915	1979/S/163916
ID / Client ID	EW37	EW38	EW39	EW40
Lot Number	13/07/2021	13/07/2021	13/07/2021	13/07/2021
Date / Time Tested	13/07/2021 11:19	13/07/2021 11:24	13/07/2021 11:34	13/07/2021 11:49
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	Bulk 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)	175 / 200 / -	175 / 200 / -	175 / 200 / -	175 / 200 / -
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 383	Lot 383	Lot 380	Lot 380
	4m Off North Boundary	8m Off North Boundary	4m Off North Boundary	9m Off North Boundary
	3m Off East Boundary	6m Off East Boundary	3m Off East Boundary	6m Off East Boundary
Level	0.5m Below F.S.L	F.S.L	0.5m Below F.S.L	F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/163913	1979/S/163914	1979/S/163915	1979/S/163916
Sample Description	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown
Moisture Test Results:				
Field Moisture Content (%)	21.5	24.1	16.8	22.5
Adjusted / Moisture Variation (%)	2.5	0.5	3.0	2.0
Optimum Moisture Content (%)	24.0	24.5	20.0	24.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	89.0	97.5	84.0	91.5
Density Test Results:				
Field Wet Density (t/m ³)	2.07	2.05	2.04	2.05
Adj/Peak Conv Wet Density (t/m ³)	2.14	2.12	2.12	2.14
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	96.5	96.5	96.0	95.5

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors	Report Number: 1979/R/60503-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number: 13/07/2021
Location: Collingwood Park	Internal Test Request: 1979/T/31363
Component: Compaction testing	Client Reference/s: Earthworks WR 6519, WR 6524
Area Description: Bulk Fill	Report Date / Page: 6/08/2021 Page 3 of 3

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/163917	1979/S/163918	1979/S/163919	1979/S/163920
ID / Client ID	EW41	EW42	EW43	EW44
Lot Number	13/07/2021	13/07/2021	13/07/2021	13/07/2021
Date / Time Tested	13/07/2021 11:55	13/07/2021 12:01	13/07/2021 12:24	13/07/2021 12:30
Material Source	On-Site	On-Site	On-Site	On-Site
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	Bulk 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)	175 / 200 / -	175 / 200 / -	175 / 200 / -	175 / 200 / -
Standard or Modified	Standard	Standard	Standard	Standard
Location	Lot 379 3m Off North Boundary 3m Off East Boundary	Lot 379 8m Off North Boundary 6m Off East Boundary	Lot 373 6m Off North Boundary 3m Off East Boundary	Lot 374 6m Off North Boundary 3m Off East Boundary
Level	0.5m Below F.S.L	F.S.L	0.5m Below F.S.L	0.5m Below F.S.L
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	1979/S/163917	1979/S/163918	1979/S/163919	1979/S/163920
Sample Description	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown
Moisture Test Results:				
Field Moisture Content (%)	17.8	22.8	18.5	22.0
Adjusted / Moisture Variation (%)	2.5	1.5	2.5	2.0
Optimum Moisture Content (%)	20.5	24.5	21.0	24.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	86.5	93.0	88.0	91.0
Density Test Results:				
Field Wet Density (t/m ³)	2.03	2.06	2.02	2.07
Adj/Peak Conv Wet Density (t/m ³)	2.12	2.14	2.10	2.12
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	95.5	96.0	96.5	98.0

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors	Report Number: 1979/R/60550-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number:
Location: Collingwood Park	Internal Test Request: 1979/T/32744
Component: Compaction Testing	Client Reference/s: WR: 6543
Area Description: Bulk Fill	Report Date / Page: 10/08/2021 Page 1 of 1

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/166156	1979/S/166157	1979/S/166158	
ID / Client ID	-	-	-	
Lot Number	-	-	-	
Date / Time Tested	23/07/2021 08:20	23/07/2021 08:30	23/07/2021 08:40	
Material Source	On-Site	On-Site	On-Site	
Material Type	Bulk Fill	Bulk Fill	Bulk Fill	
Sampling Method	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)	175 / 175 / -	175 / 175 / -	175 / 175 / -	
Standard or Modified	Standard	Standard	Standard	
Road:	Rd 11 - Colwd. Dr Tie - In	Rd 11 - Colwd. Dr Tie - In	Rd 11 - Colwd. Dr Tie - In	
Chainage	m 60	m 50	m 40	
Offset	m 2m off rd	m 1.6m off rd	m 2.4m off rd	
Level	m FSL	m FSL	m FSL	
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	
Sample Oversize (%)	0	0	0	
Compaction Sample Number	1979/S/166156	1979/S/166157	1979/S/166158	
Sample Description	Sandy Clay - Brown	Sandy Clay - Brown	Sandy Clay - Brown	
Moisture Test Results:				
Field Moisture Content (%)	-	-	-	
Adjusted / Moisture Variation (%)	2.5	1.5	2.5	
Optimum Moisture Content (%)	-	-	-	
Moisture Variation from OMC	-	-	-	
Moisture Ratio (%)	-	-	-	
Density Test Results:				
Field Wet Density (t/m ³)	2.24	2.25	2.22	
Adj/Peak Conv Wet Density (t/m ³)	2.28	2.29	2.26	
Density Ratio Required (%)	95	95	95	
Hilf Density Ratio (%)	98.5	98.5	98.5	

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2



WET DENSITY RATIO REPORT

Client: Shadforths Civil Contractors	Report Number: 1979/R/60557-1
Client Address: 99 Sandalwood Lane, Forest Glen	Project Number: 1979/P/2052
Project: Woodlinks Estate Stage 23A	Lot Number: -
Location: Collingwood Park	Internal Test Request: 1979/T/32571
Component: Bulk Earthworks	Client Reference/s: 28/07/2021
Area Description: Stage 23A	Report Date / Page: 10/08/2021 Page 1 of 1

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
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Sample Number	1979/S/165220		
ID / Client ID	-		
Lot Number	-		
Date / Time Tested	28/07/2021 14:10		
Material Source	On-Site		
Material Type	Bulk Fill		
Sampling Method	AS1289.1.2.1 CI 6.4b		
Depths: Test / Nom / Actual (mm)	300 / 300 / 300		
Standard or Modified	Standard		
Location	Lot 363 Offset South/West Corner 10m Nth, 15m East		
Level	RL: 44.7		
Test Fraction (mm)	< 19.0 mm		
Sample Oversize (%)	0		
Compaction Sample Number	1979/S/165220		
Sample Description	Sandy Clay - Brown		
Moisture Test Results:			
Field Moisture Content (%)	11.8		
Adjusted / Moisture Variation (%)	2.0		
Optimum Moisture Content (%)	14.0		
Moisture Variation from OMC	(Drier than OMC)		
Moisture Ratio (%)	85.5		
Density Test Results:			
Field Wet Density (t/m ³)	2.03		
Adj/Peak Conv Wet Density (t/m ³)	2.06		
Density Ratio Required (%)	95		
Hilf Density Ratio (%)	98.5		

Remarks

Accredited for compliance with ISO/IEC 17025 – Testing	
 Accreditation Number: 1986 Corporate Site Number: 1979	Approved Signatory: Wayne Gorman Form ID: W5ASRep Rev 2

APPENDIX

B

LOT LETTERS



Ref: 1979/L/334

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 334, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

It may be that non-structural topsoil was placed on the block after completion of the structural fill. This would need to be removed as part of the site preparation for building and driveway construction.

I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/335

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 335, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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It may be that non-structural topsoil was placed on the block after completion of the structural fill. This would need to be removed as part of the site preparation for building and driveway construction.

I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/336

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 336, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/337

Project Ref: 1979/P/2052

10/08/2021

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

Construction Sciences Pty Ltd
ABN 74 128 806 735

1 Fox Road
Acacia Ridge QLD 4110
Australia

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 337, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/338

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 338, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/339

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 339, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/340

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 340, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/341

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 341, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/342

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 342, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/343

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 343, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/344

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 344, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/345

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 345, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/346

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 346, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/347

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 347, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/348

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 348, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/349

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 349, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

It may be that non-structural topsoil was placed on the block after completion of the structural fill. This would need to be removed as part of the site preparation for building and driveway construction.

I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/350

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 350, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/351

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 351, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/352

Project Ref: 1979/P/2052

10/08/2021

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

Construction Sciences Pty Ltd
ABN 74 128 806 735

1 Fox Road
Acacia Ridge QLD 4110
Australia

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 352, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/357

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 357, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/358

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 358, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/359

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 359, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/360

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 360, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/361

Project Ref: 1979/P/2052

10/08/2021

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

Construction Sciences Pty Ltd
ABN 74 128 806 735

1 Fox Road
Acacia Ridge QLD 4110
Australia

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 361, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/362

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 362, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/363

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 363, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/364

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
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Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 364, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/365

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
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FOREST GLENN QLD 4556

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Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 365, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/366

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
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Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 366, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/368

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 368, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/369

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 369, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/370

Project Ref: 1979/P/2052

10/08/2021

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

Construction Sciences Pty Ltd
ABN 74 128 806 735

1 Fox Road
Acacia Ridge QLD 4110
Australia

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 370, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/371

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 371, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/372

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 372, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/373

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 373, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/374

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 374, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/375

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 375, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/376

Project Ref: 1979/P/2052

10/08/2021

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

Construction Sciences Pty Ltd
ABN 74 128 806 735

1 Fox Road
Acacia Ridge QLD 4110
Australia

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 376, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

It may be that non-structural topsoil was placed on the block after completion of the structural fill. This would need to be removed as part of the site preparation for building and driveway construction.

I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/377

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

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Acacia Ridge QLD 4110
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Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 377, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/378

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
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Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 378, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/379

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
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FOREST GLENN QLD 4556

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Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 379, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/380

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

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Acacia Ridge QLD 4110
Australia

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Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 380, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/381

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
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Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 381, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/382

Project Ref: 1979/P/2052

10/08/2021

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

Construction Sciences Pty Ltd
ABN 74 128 806 735

1 Fox Road
Acacia Ridge QLD 4110
Australia

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 382, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

This indicates that the fill was compacted to at least the minimum density ratio in accordance with the specification requirements and it is considered that the fill may be deemed to be "controlled fill" in accordance with AS2870-2011 "Residential Slabs & Footings".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Ref: 1979/L/383

Project Ref: 1979/P/2052

Construction Sciences Pty Ltd
ABN 74 128 806 735

10/08/2021

1 Fox Road
Acacia Ridge QLD 4110
Australia

Shadforths Civil Contractors
99 Sandalwood Lane
FOREST GLENN QLD 4556

PO Box 253
Acacia Ridge QLD 4110
Australia

Phone: 61 7 3320 8500
www.constructionsciences.net

Dear Sir/Madam,

**INSPECTION OF PLACEMENT AND COMPACTION OF ALLOTMENT FILL
LOT 383, WOODLINKS ESTATE STAGE 23A, COLLINGWOOD PARK**

This is to confirm that placement and compaction of the allotment fill for the above project and Lot was supervised by Construction Sciences Pty Ltd under Level 1 arrangements as described in AS3798-2007 "Guidelines on earthworks for commercial and residential developments".

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I trust this meets your requirements. Please do not hesitate to contact me if you have any queries.

Yours faithfully



Wayne Gorman
Lab Manager
For Brisbane South
Construction Sciences

Contact

1 Fox Road
Acacia Ridge, QLD 4110

Telephone: (07) 3320 8500
Facsimile: (07) 3320 8599

brisbane@constructionsciences.net
www.constructionsciences.net