

# CIVIL GEOTECHNICAL SERVICES ABN 26 474 013 724 PO Box 678 Croydon Vic 3136 Telephone: 9723 0744 Facsimile: 9723 0799

30<sup>th</sup> March 2020

Our Reference: 18727:NB711

Winslow Constructors Pty Ltd 50 Barry Road CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

#### RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING GRACE – STAGE 5 (TARNEIT)

Please find attached our Report No's 18727/R001 to 18727/R010 which relate to the field density testing that was conducted within the filled allotments of the above subdivision. The level 1 inspections and associated field density testing commenced in November 2018 and was completed in January 2019.

The inspections and testing of the earthworks was undertaken in general accordance with the Level 1 requirements of AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments.

The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. The attached compaction results, which were located randomly throughout the fill profile, are considered to be representative of the bulk fill materials that were placed across the reported allotments by Winslow Constructors during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

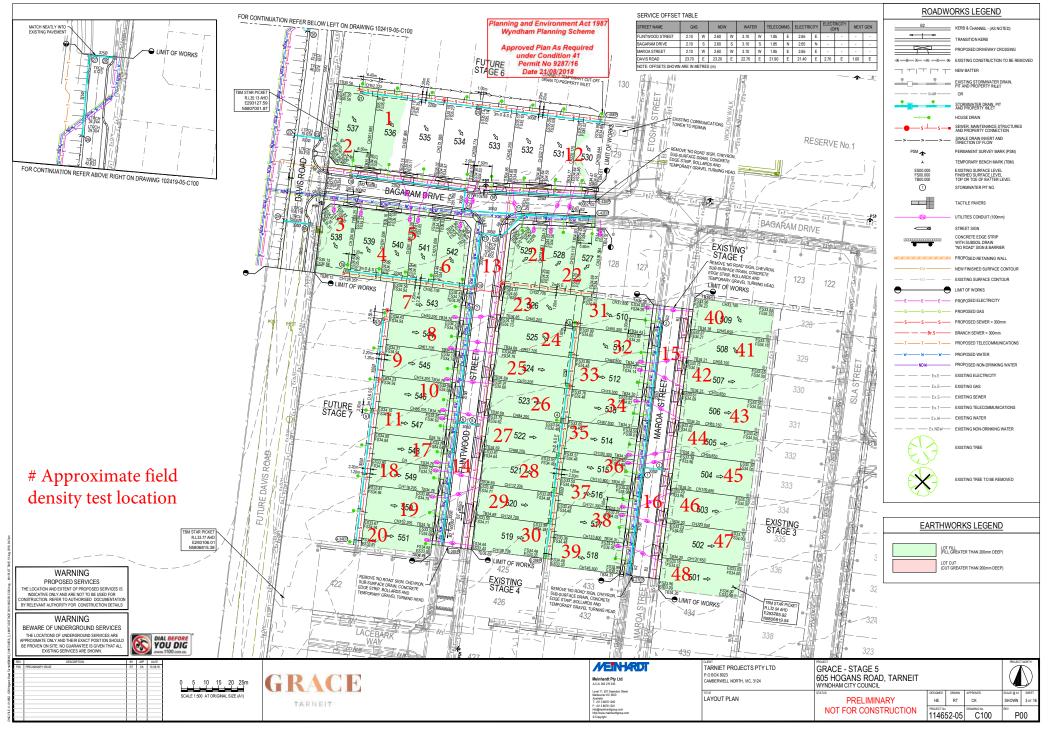
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

# FIGURE 1





	CHNICAL SERVICES nue, Croydon 3136				R	ob No eport No ate Issued	18727 18727/R00 26/03/2019
Client	WINSLOW CONSTRUCTORS	PTY LTD (C/	AMPBELLFIE	ELD)	Te	ested by	JB
Project	GRACE - STAGE 5					ate tested	09/11/18
Location	TARNEIT				C	hecked by	JHF
Feature	EARTHWORKS	Lay	er thickness	200	mm	Time:	10:00
	dure AS 1289.2.1.1 & 5.8.1	1	2	3	4	5	6
Test No	dure AS 1289.2.1.1 & 5.8.1	1	2	3	4	5	6
-	dure AS 1289.2.1.1 & 5.8.1	1 REFER	2 REFER	3 REFER	<b>4</b> REFER	5 REFER	6 REFER
Test No	dure AS 1289.2.1.1 & 5.8.1	_		_	_	_	
Test No	dure AS 1289.2.1.1 & 5.8.1	REFER	REFER	REFER	REFER TO	REFER TO	REFER
Test No	dure AS 1289.2.1.1 & 5.8.1	REFER TO	REFER TO	REFER TO	REFER TO	REFER TO	REFER TO
Test No Location		REFER TO	REFER TO	REFER TO	REFER TO	REFER TO	REFER TO
Test No Location	e depth below FSL	REFER TO	REFER TO	REFER TO	REFER TO	REFER TO	REFER TO

#### Test procedure AS 1289.5.7.1

Field wet density

Field moisture content

	1	2	3	4	5	6
			Star	ndard		
mm	19.0	19.0	19.0	19.0	19.0	19.0
wet	0	0	0	0	0	0
t∕m³	1.88	1.85	1.83	1.83	1.86	1.86
t∕m³	-	-	-	-	-	-
%	26.0	25.0	26.0	26.0	29.0	29.5
	2.0%	2.5%	2.0%	2.0%	2.5%	2.5%
	wet t/m³ t/m³	wet         0           t/m³         1.88           t/m³         -           %         26.0	mm         19.0         19.0           wet         0         0           t/m³         1.88         1.85           t/m³         -         -           %         26.0         25.0	mm         19.0         19.0         19.0         19.0           wet         0         0         0         0           t/m³         1.88         1.85         1.83           t/m³         -         -         -           %         26.0         25.0         26.0	Image: Standard         Standard           mm         19.0         19.0         19.0           wet         0         0         0         0           t/m³         1.88         1.85         1.83         1.83           t/m³         -         -         -         -           %         26.0         25.0         26.0         26.0	Standard           mm         19.0         19.0         19.0         19.0           wet         0         0         0         0         0           t/m³         1.88         1.85         1.83         1.83         1.86           t/m³         -         -         -         -         -           %         26.0         25.0         26.0         26.0         29.0

1.77

22.5

1.77

24.0

1.79

23.8

1.77

26.6

1.79

27.1

t∕m³

%

1.88

23.9

#### Material description

No 1 - 6 Clay Fill



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



Data laguad	
Date Issued	28/05/2019
Tested by	BS
Date tested	10/11/18
Checked by	JHF
	Date tested

 Feature
 EARTHWORKS
 Layer thickness
 200 mm
 Time: 14:26

Test procedure AS 1289.2.1.1 & 5.8.1

Test No	,	7	8	9	10	11	12
Location		·	·	· · · · · · · · · · · · · · · · · · ·	·	†	
	ļ	REFER	REFER	REFER	REFER	REFER	REFER
	ļ	то	то	то	то	то	то
	ļ	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1
	ļ		'''''''''''''''''''''''''''''''''''''				
	ļ	1 '	1 '	1	1	'	
	!	'	1'	'	'	'	
Approximate depth below FSL							
Measurement depth	тт	175	175	175	175	175	175
Field wet density	t∕m³	1.85	1.81	1.92	1.89	1.80	1.92
Field moisture content	%	26.9	26.5	27.4	30.8	21.1	19.4
Test procedure AS 1289.5.7.1							
Test No		7	8	9	10	11	12
Compactive effort	!			Star	ndard		
Oversize rock retained on sieve	тт	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t∕m³	1.82	1.78	1.90	1.86	1.89	1.89
Adjusted Peak Converted Wet Density	t∕m³	<u> </u>	-	<u> </u>	<u> </u>	-	-
Optimum Moisture Content	%	29.0	29.0	29.5	33.0	23.0	22.0
Moisture Variation From		2.0%	2.5%	2.0%	2.0%	2.0%	2.5%
Optimum Moisture Content	ļ	dry	dry	dry	dry	dry	dry
Optimum Molecure Content		Gry					
Density Ratio (R <sub>HD</sub> )	%	101.5	101.5	101.5	101.5	95.5	101.5
Density ratio ( r HD )	/0 -	101.0			101.0	30.0	101.0

Accreditation No 9909

AVRLOT HILF V1.10 MAR 13

Approved Signatory : Justin Fry



CIVIL GEOTEC	CHNICAL SERVICES	Job No Report No	18727 18727/R003
6 - 8 Rose Avenu	ie, Croydon 3136	Date Issued	23/05/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 5	Date tested	13/11/18
Location	TARNEIT	Checked by	JHF

Feature

EARTHWORKS

Layer thickness

200 mm

*Time:* 08:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		13	14	15	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
Measurement depth	тт	175	175	175	-	-	-
Field wet density	t∕m³	1.78	1.79	1.87	-	-	-
Field moisture content	%	28.2	29.7	29.1	-	-	-
Test No		13	14	15		-	_
Compactive effort Oversize rock retained on sieve Percent of oversize material	mm wet	19.0 0	19.0 0	Stan 19.0 0	-	-	-
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0	19.0	Stan 19.0	-		
Compactive effort Oversize rock retained on sieve Percent of oversize material	wet	19.0 0	19.0 0	Stan 19.0 0	-	-	-
Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.81 -	19.0 0 1.82 -	Stan 19.0 0 1.91 -	- - - -	- - - -	- - -

No 13 - 15 Clay Fill



AVRLOT HILF V1.10 MAR 13

Approved Signatory : Justin Fry



CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	18727 18727/R004
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	19/12/2018
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	GRACE - STAGE 5	Date tested	13/11/18
Location	TARNEIT	Checked by	JHF

Feature

EARTHWORKS

Layer thickness

200 mm

Time: 14:07

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		16	17	18	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
Measurement depth	тт	175	175	175	-	-	-
Field wet density	t∕m³	1.89	1.84	1.80	-	-	-
Field moisture content	%	25.4	24.6	23.7	-	-	-
Test procedure AS 1289.5.7.1		10				r	r
Test No		16	17	18 Stor	-	-	-
Test No Compactive effort	mm			Stan	- dard -	-	-
Test No Compactive effort Oversize rock retained on sieve	mm wet	19.0	17 19.0 0	Stan 19.0	dard		
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	wet	19.0 0	19.0 0	Stan 19.0 0	dard		
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0	19.0	Stan 19.0	dard - -	-	-
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	wet	19.0 0	19.0 0	Stan 19.0 0	dard - - -	-	
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.90	19.0 0 1.90 -	Stan 19.0 0 1.85 -	dard - - - -	- - - -	

No 16 - 18 Clay Fill



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

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CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	18727 18727/R005
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	21/05/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 5	Date tested	15/11/18
Location	TARNEIT	Checked by	JHF

 Feature
 EARTHWORKS
 Layer thickness
 200 mm
 Time: 08:00

Test procedure AS 1289.2.1.1 & 5.8.1

		19	20	21	22	23	24
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		то	то	то	то	то	то
		FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t∕m³	1.85	1.79	1.86	1.80	1.75	1.84
Field moisture content	%	29.9	28.4	24.0	24.6	25.0	23.0
Tast procedure AS 1280 5 7 1							
Test procedure AS 1289.5.7.1 Test No		19	20	21 Stop	22	23	24
Test No Compactive effort				Stan	ndard		
Test No Compactive effort Oversize rock retained on sieve	mm	19.0	19.0	Stan 19.0	ndard 19.0	19.0	19.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	wet	19.0 0	19.0 0	Stan 19.0 0	ndard 19.0 0	19.0 0	19.0 0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0	19.0	Stan 19.0	ndard 19.0	19.0	19.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.86 -	19.0 0 1.80	Stan 19.0 0 1.90 -	ndard 19.0 0 1.86 -	19.0 0 1.80	19.0 0 1.90 -
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0 0	19.0 0	Stan 19.0 0	ndard 19.0 0	19.0 0	19.0 0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.86 -	19.0 0 1.80	Stan 19.0 0 1.90 -	ndard 19.0 0 1.86 -	19.0 0 1.80	19.0 0 1.90
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content Moisture Variation From	wet t/m³ t/m³	19.0 0 1.86 - 32.5 2.5%	19.0 0 1.80 - 31.0 2.5%	Stan 19.0 0 1.90 - 26.5 2.5%	dard 19.0 0 1.86 - 26.5 2.0%	19.0 0 1.80 - 27.0 2.0%	19.0 0 1.90 - 25.0 2.0%
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content	wet t/m³ t/m³	19.0 0 1.86 - 32.5	19.0 0 1.80 - 31.0	Stan 19.0 0 1.90 - 26.5	dard 19.0 0 1.86 - 26.5	19.0 0 1.80 - 27.0	19.0 0 1.90 - 25.0

No 19 - 24 Clay Fill



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CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	18727 18727/R006
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	29/03/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 5	Date tested	15/11/18
Location	TARNEIT	Checked by	JHF

FeatureEARTHWORKSLayer thickness200 mm

*Time:* 14:04

Test procedure AS 1289.2.1.1 & 5.8.1

Test No	ļ	25	26	27	28	29	30
Location		· · · · · ·					
	I	REFER	REFER	REFER	REFER	REFER	REFER
	P	то	то	то	то	то	то
	P	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE <sup>2</sup>
	ł						
	I	1		1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t∕m³	1.82	1.89	1.86	1.83	1.82	1.81
Field moisture content	%	24.6	21.6	23.1	23.6	24.6	24.1
Test procedure AS 1289.5.7.1							
Test No		25	26	27	28	29	30
Compactive effort		<u>[</u>		Stan	ndard		
Oversize rock retained on sieve	тт	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t∕m³	1.84	1.89	1.90	1.87	1.84	1.86
Adjusted Peak Converted Wet Density	t∕m³		-	<u> </u>	-	-	-
Optimum Moisture Content	%	26.5	24.0	25.0	26.0	26.5	26.5
Moisture Variation From		2.0%	2.5%	2.0%	2.5%	2.0%	2.5%
Optimum Moisture Content	I	dry	dry	dry	dry	dry	dry
		,	,	,	,	,	5
Density Ratio (R <sub>HD</sub> )	%	98.5	100.0	98.0	98.0	99.0	97.0
				,			



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	18727 18727/R007
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	28/05/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 5	Date tested	16/11/18
Location	TARNEIT	Checked by	JHF

 Feature
 EARTHWORKS
 Layer thickness
 200 mm
 Time: 10:30

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		31	32	33	34	35	36
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		то	то	то	то	то	то
		FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1
Approximate depth below FSL							
Measurement depth	тт	175	175	175	175	175	175
Field wet density	t∕m³	1.91	1.92	2.00	1.97	1.89	1.87
Field moisture content	%	28.2	26.4	31.6	29.9	29.1	27.3
Test procedure AS 1289.5.7.1							
		24	22	22	24	25	20
Test No		31	32	33 Stan	34 dard	35	36
Test No Compactive effort	mm			Stan	dard		
Test No	mm wet	31 19.0 0	32 19.0 0	Stan 19.0		35 19.0 0	19.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	wet	19.0 0	19.0 0	Stan 19.0 0	dard 19.0 0	19.0 0	19.0 0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0	19.0	Stan 19.0	dard 19.0	19.0	19.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	wet	19.0 0	19.0 0	Stan 19.0 0	dard 19.0 0	19.0 0	19.0 0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.94	19.0 0 1.96 -	Stan 19.0 0 2.03 -	dard 19.0 0 2.01	19.0 0 1.92	19.0 0 1.90 -
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content	wet t/m³ t/m³	19.0 0 1.94 - 30.5	19.0 0 1.96 - 29.0	Stan 19.0 0 2.03 - 33.5	dard 19.0 0 2.01 - 32.5	19.0 0 1.92 - 31.0	19.0 0 1.90 - 30.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content Moisture Variation From	wet t/m³ t/m³	19.0 0 1.94 - 30.5 2.5%	19.0 0 1.96 - 29.0 2.5%	Stan 19.0 0 2.03 - 33.5 2.0%	dard 19.0 0 2.01 - 32.5 2.5%	19.0 0 1.92 - 31.0 2.0%	19.0 0 1.90 - 30.0 2.5%
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content	wet t/m³ t/m³	19.0 0 1.94 - 30.5	19.0 0 1.96 - 29.0	Stan 19.0 0 2.03 - 33.5	dard 19.0 0 2.01 - 32.5	19.0 0 1.92 - 31.0	19.0 0 1.90 - 30.0

No 31 - 36 Clay Fill



AVRLOT HILF V1.10 MAR 13

Approved Signatory : Justin Fry



CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	18727 18727/R008
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	09/01/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 5	Date tested	17/11/18
Location	TARNEIT	Checked by	JHF

 Feature
 EARTHWORKS
 Layer thickness
 200 mm
 Time: 11:30

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		37	38	39	40	41	42
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		TO	TO	TO	TO	TO	ТО
		FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1	FIGURE 1
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t∕m³	1.89	1.91	1.85	1.82	1.91	1.89
Field moisture content	%	19.9	20.4	21.0	19.2	21.1	20.9
Test procedure AS 1289.5.7.1		07			40		40
Test procedure AS 1289.5.7.1 Test No		37	38	39	40	41	42
•		37	38		40 dard	41	42
Test No Compactive effort Oversize rock retained on sieve	mm	37	38 19.0	Stan 19.0		41 19.0	19.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	wet	19.0 0		Stan	dard		19.0 0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0	19.0	Stan 19.0	dard 19.0	19.0	19.0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.95 -	19.0 0 1.96	Stan 19.0 0	dard 19.0 0 1.95 -	19.0 0	19.0 0 1.95 -
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	19.0 0	19.0 0	Stan 19.0 0	dard 19.0 0	19.0 0	19.0 0
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.95 -	19.0 0 1.96	Stan 19.0 0 1.90 -	dard 19.0 0 1.95 -	19.0 0 1.95 -	19.0 0 1.95 -
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.95 -	19.0 0 1.96	Stan 19.0 0 1.90 -	dard 19.0 0 1.95 -	19.0 0 1.95 -	19.0 0 1.95 -
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content	wet t/m³ t/m³	19.0 0 1.95 - 22.5	19.0 0 1.96 - 23.0	Stan 19.0 0 1.90 - 23.5	dard 19.0 0 1.95 - 21.5	19.0 0 1.95 - 23.5	19.0 0 1.95 - 23.5
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content Moisture Variation From	wet t/m³ t/m³	19.0 0 1.95 - 22.5 2.5%	19.0 0 1.96 - 23.0 2.5%	Stan 19.0 0 1.90 - 23.5 2.5%	dard 19.0 0 1.95 - 21.5 2.5%	19.0 0 1.95 - 23.5 2.5%	19.0 0 1.95 - 23.5 2.5%

No 37 - 42 Clay Fill



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Approved Signatory : Justin Fry



CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	18727 18727/R009
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	09/01/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 5	Date tested	19/11/18
Location	TARNEIT	Checked by	JHF

Feature

EARTHWORKS

Layer thickness

200 mm

Time: 12:30

Test procedure AS 1289.2.1.1 & 5.8.1

Test No	ļ	43	44	45	-	-	-
Location							1
	I	REFER	REFER	REFER			
	ł	то	то	то			
	I	FIGURE 1	FIGURE 1	FIGURE 1			
	I	-		-			
	I						
	!				l		
Approximate depth below FSL							
Measurement depth	тт	175	175	175	-	-	-
Field wet density	t∕m³	1.88	1.88	1.90	-	-	-
Field moisture content	%	18.6	18.0	17.9	-	-	-
Test procedure AS 1289.5.7.1							
Test No		43	44	45	-	-	-
Compactive effort		<u>[</u>		Stan	ndard		
Oversize rock retained on sieve	тт	19.0	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	0	-		-
Peak Converted Wet Density	t∕m³	1.91	1.90	1.90	-	-	-
Adjusted Peak Converted Wet Density	t∕m³	-	-	-	-	-	-
Optimum Moisture Content	%	21.0	20.0	20.0	-	-	-
Moisture Variation From		2.5%	2.5%	2.0%	<b>_</b>	_	<u> </u>
Optimum Moisture Content	I	dry	dry	dry			
		<u></u>	ر.ب	<u></u>			
Density Ratio (R <sub>HD</sub> )	%	98.5	99.0	99.5	_	-	Τ_



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Approved Signatory : Justin Fry



CIVIL GEOTE	CHNICAL SERVICES	Job No Report No	18727 18727/R010
6 - 8 Rose Aven	ue, Croydon 3136	Date Issued	12/02/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 5	Date tested	15/01/19
Location	TARNEIT	Checked by	JHF

Feature

EARTHWORKS

Layer thickness

200 mm

Time: 07:30

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		46	47	48	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
Measurement depth	тт	175	175	175	-	-	-
Field wet density	t∕m³	1.70	1.64	1.68	-	-	-
Field moisture content	%	13.1	12.3	11.3	-	-	-
Test procedure AS 1289.5.7.1 Test No Compactive effort		46	47	48 Stan	- dard	-	-
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	0	-	-	-
Peak Converted Wet Density	t/m³	1.73	1.70	1.73	-	-	-
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	14.5	14.0	13.0	-	-	-
Moisture Variation From		2.0%	2.5%	2.5%	-	-	-
Optimum Moisture Content		dry	dry	dry			
				97.5			

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Approved Signatory : Justin Fry



		Job No	19457
CIVIL GEOTE	ECHNICAL SERVICES	Report No	19457/R001
6 - 8 Rose Ave	nue, Croydon, Vic 3136	Date Issued	15/07/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Client Project	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) GRACE - STAGE 5	Tested by Date tested	JB 09/07/19

AS 12892.1.1 & 5.8.1 <b>Test No</b>		1	2	3	4	5	6
Location		•	∠ m Drive	_	d Street	_	Street
Location		Dayala	III DIIve	FIIIIWOC	u Slieel	iviai 0a	Slieel
	Chainage	240	290	50	100	60	110
	Offset	1.4	2	1.8	2.2	1.5	1.8
		south	north	east	west	east	west
		of kerb	of kerb	of kerb	of kerb	of kerb	of kerb
Approximate depth from F.S.L.	т						
Measurement depth	mm	125	125	125	125	125	125
Field wet density	t∕m³	2.22	2.18	2.17	2.16	2.15	2.17
Field dry density	t∕m³	1.96	1.91	1.89	1.89	1.88	1.90
Field moisture content	%	12.0	13.0	13.0	13.0	13.0	12.5
Material source and location Compactive effort Maximum Dry Density	<i>t/m</i> ³ %		40mm	Capping - M STAN 1.9	DARD 95	m Vale	
Optimum Moisture Content Test procedure AS 1289.5.4.1	%			14			
Oversize rock retained on sieve	mm	37.5	37.5	37.5	37.5	37.5	37.5
Percent of oversize material	wet	-	-	-	-	-	-
Percent of oversize material	dry	-	-	-	-	-	-
Adjusted Maximum Dry Density	t/m³	-	-	-	-	-	-
Adjusted Optimum Moisture Conter	nt %	-	-	-	-	-	-
Moisture Variation From		1.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Optimum Moisture Conte</b>	nt	dry	wet	wet	wet	dry	dry
Moisture Ratio(R <sub>m</sub> )	%	94.5	101.0	101.0	101.5	100.0	99.0
Density Ratio (R <sub>D</sub> )	%	100.0	98.0	97.0	96.5	96.5	97.5
Defisity Ratio $(R_D)$	70	100.0	90.0	97.0	30.5	30.5	97.J



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		Job No	19457
CIVIL GEOTE	ECHNICAL SERVICES	Report No	19457/R002
6 - 8 Rose Ave	nue, Croydon, Vic 3136	Date Issued	15/07/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Client Project	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) GRACE - STAGE 5	Tested by Date tested	JB 09/07/19

Feature DRAINAGE		Layer thickness		200 mm		Time:	08:38:18
AS 12892.1.1 & 5.8.1							
Test No		7	8	9	10	11	
Location	Pit	22 - 23	24 - 25	17 - 16	6 - 8	1 - 3	
Approximate depth from F.S.L.	m						
Measurement depth	mm	175	175	175	175	175	
Field wet density	t/m³	2.46	2.41	2.46	2.44	2.47	
Field dry density	t/m³	2.31	2.30	2.32	2.31	2.34	
Field moisture content	%	6.5	5.0	6.0	6.0	5.5	
Date of assignment Material source and location			20mm	Class 3 - M		ım Vale	
Compactive effort				_	IFIED		
Maximum Dry Density	t∕m³			2.3			
Optimum Moisture Content	%			7.	5		
Test procedure AS 1289.5.4.1		40.0	40.0	40.0	40.0	40.0	
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	
Percent of oversize material Percent of oversize material	wet	-	-	-	-	-	
	dry t/m³	-	-	-	-	-	
Adjusted Maximum Dry Density Adjusted Optimum Moisture Content	<i>011</i> %	-	-	-	-	-	
Adjusted Optimum Moisture Content	70	-	-	-	-	-	
Moisture Variation From		1.0%	2.5%	1.5%	1.5%	2.0%	
<b>Optimum Moisture Content</b>		dry	dry	dry	dry	dry	
Moisture Ratio (R <sub>m</sub> )	%	87.0	67.0	78.5	79.0	75.5	
Density Ratio $(R_D)$	%	98.5	98.0	99.0	98.5	100.0	



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#### **COMPACTION ASSESSMENT**

		Job No	19457
CIVIL GEOTE	ECHNICAL SERVICES	Report No	19457/R003
6 - 8 Rose Ave	nue, Croydon, Vic 3136	Date Issued	05/08/2019
-			1
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Client Project	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) GRACE - STAGE 5	Tested by Date tested	JB 05/08/19

Feature CAPPING		Layer thickn	ess	150	mm	Time:	10:00:02
AS 12892.1.1 & 5.8.1							
Test No		12	13	14			
Location			Davis Road				
Cha	ainage	20	65	110			
	Offset	1.8	2.5	2			
		east	west	east			
		of kerb	of kerb	of kerb			
Approximate depth from F.S.L.	т						
Measurement depth	тт	125	125	125			
Field wet density	t∕m³	2.18	2.21	2.17			
Field dry density	t∕m³	1.95	1.97	1.94			
Field moisture content	%	11.5	12.0	11.5			
Material source and location Compactive effort Maximum Dry Density	t∕m³		40mm	Capping - M STAN 1.9	DARD	ham Vale	
Optimum Moisture Content	%			14			
Test procedure AS 1289.5.4.1 Oversize rock retained on sieve	mm	37.5	37.5	37.5			
Percent of oversize material	wet	-	-	-			
	ding						
Percent of oversize material	dry	-	-	-			
Adjusted Maximum Dry Density	t/m³	-	-	-			
	,	-	- - -	- - -			
Adjusted Maximum Dry Density Adjusted Optimum Moisture Content	t/m³	-		-			
Adjusted Maximum Dry Density Adjusted Optimum Moisture Content <b>Moisture Variation From</b>	t/m³	- - 2.5%	2.5%	- 2.5%			
Adjusted Maximum Dry Density Adjusted Optimum Moisture Content	t/m³	-		-			
Adjusted Maximum Dry Density Adjusted Optimum Moisture Content <b>Moisture Variation From</b>	t/m³	- - 2.5%	2.5%	- 2.5%			



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		Job No	19457
CIVIL GEOTE	ECHNICAL SERVICES	Report No	19457/R004
6 - 8 Rose Ave	enue, Croydon, Vic 3136	Date Issued	06/08/2019
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Client Project	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) GRACE - STAGE 5	Tested by Date tested	JB 06/08/19

Feature CLASS 3		Layer thickn	iess	100	mm	Time:	08:00:18
AS 12892.1.1 & 5.8.1							
Test No		15	16	17	18	<u> </u>	<u> </u>
Location	1	Bagara	am Drive	Flintwoo	od Street	+	·
	Chainage	240	290	50	100		
	Offset	1.4	2.1	1.8	1.5		
		south	north	east	west		
		of kerb	of kerb	of kerb	of kerb		
Approximate depth from F.S.L.	т	,					
Measurement depth	mm	75	75	75	75		
Field wet density	t∕m³	2.41	2.43	2.39	2.42		
Field dry density	t∕m³	2.30	2.31	2.29	2.29		
Field moisture content	%	4.5	5.5	4.5	5.5		
Laboratory Compaction AS 1289.	.5.2.1 & 5.4.2	2 Assigned \	Values (See F				
Date of assignment	ł	·			7/2019		
Material source and location	ł		2000	Class 3 - M	VQ, Wyndha	am vale	
Compactive effort	±/m3			2.3			
Maximum Dry Density	t/m³				- ·		
Optimum Moisture Content	%			7.	5		
Test procedure AS 1289.5.4.1							
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0		
	+		t'	r'	<u> </u>		

Oversize rock retained on sieve	тт	19.0	19.0	19.0	19.0		
Percent of oversize material	wet	-	-	-	-		
Percent of oversize material	dry	-	-	-	-		
Adjusted Maximum Dry Density	t∕m³	-	-	-	-		
Adjusted Optimum Moisture Content	%	-	-	-	-		
				-	-		
Moisture Variation From		2.5%	2.0%	3.0%	2.0%		
Optimum Moisture Content		dry	dry	dry	dry		
Maiatura Datia (D.)	0(	60 F	74.0	50 F	745	T T	
Moisture Ratio $(R_m)$	%	63.5	74.0	59.5	74.5		
Density Ratio $(R_D)$	%	98.0	98.5	98.0	98.0		



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8 Rose Avenue, Croydon 3136         Client       YARRA VALLEY EXCAN         Project       GRACE - STAGES 4 & 5         Location       TARNEIT		S (SEWERS	8)			Date Issued Tested by Date tested Checked by	04/03/201 JB 22/02/19 JHF
Feature EARTHWORKS		Lay	er thickness	200	mm	Time	: 08:30
Test procedure AS 1289.2.1.1 & 5.8.	1	1	2	3	4		
<b>Test No</b> Location		1	2	3	4	5	6
Localion		Lot	544	Lot	534	Lo	t 524
Approximate depth below FSL (m)		fsl	0.4	fsl	0.4	fsl	0.4
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t∕m³	1.71	1.83	1.73	1.75	1.77	1.78
Field moisture content	%	27.3	22.9	23.7	29.1	30.2	30.0
Test procedure AS 1289.5.7.1							
Test No		1	2	3	4	5	6
Compactive effort			- 1		ndard		-
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t∕m³	1.80	1.90	1.80	1.82	1.81	1.85
Adjusted Peak Converted Wet Density	t∕m³	-	-	-	-	-	-
Optimum Moisture Content	%	30.0	25.0	25.5	31.5	32.0	32.5
Moisture Variation From	T	2.5%	2.0%	2.0%	2.5%	2.0%	2.5%
Optimum Moisture Content		dry	dry	dry	dry	dry	dry
opinian Nostare Content		ury	ury	ary	ury	ury	ury
Density Ratio (R <sub>HD</sub> )	%	95.0	96.0	96.0	96.0	98.5	96.0
Material description No 1 - 6 Clay Fill							



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Approved Signatory : Justin Fry



		Job No	19140
CIVIL GEOTE	ECHNICAL SERVICES	Report No	19140/R002
6 - 8 Rose Ave	enue, Croydon, Vic 3136	Date Issued	25/02/2019
Client	YARRA VALLEY EXCAVATIONS (SEWERS)	Tested by	JB
Client Project	YARRA VALLEY EXCAVATIONS (SEWERS) GRACE - STAGES 4 & 5	Tested by Date tested	JB 22/02/19

Feature TRENCH FILL		Layer thickn	iess	200	mm	Time:	09:30:32
AS 12892.1.1 & 5.8.1							
Test No		7					
Location	Lot	Flintwood Street					
Approximate depth from F.S.L.	m						
Measurement depth	m mm	175	<u> </u>	ļ			
Field wet density	t/m³	2.37					
Field dry density	t/m³	2.37					
Field moisture content	<i>witte</i> %	5.0					
Compactive effort Maximum Dry Density	t/m³			2.	IFIED 30		
Optimum Moisture Content Test procedure AS 1289.5.4.1 Oversize rock retained on sieve	% mm	19.0		/	.5		
Percent of oversize material	wet	-					
Percent of oversize material	dry	-					
	t/m <sup>3</sup>	-					
Adjusted Maximum Dry Density		,					
Adjusted Maximum Dry Density Adjusted Optimum Moisture Content	%	-					
Moisture Variation From		- 2.5%					
Adjusted Optimum Moisture Content		- 2.5% dry					
Adjusted Optimum Moisture Content Moisture Variation From							



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CH FILL 1289.2.1.1 & 5.8.1 Plow FSL (m)		Lay <b>8</b> Lot 418	9 Lot 413	200 <b>10</b> Lot	mm 11 Lot	Time	e: 10:00
		Lot	Lot			-	
low FSL (m)		Lot	Lot			-	-
low FSL (m)				Lot	Lot		
elow FSL (m)				451	425		
		0.2	0.2	0.2	0.2		
	nm	175	175	175	175	-	-
	m <sup>3</sup>	1.79	1.75	1.75	1.69	-	-
t S	%	27.4	23.0	29.6	26.5	-	-
1289.3.7.1		0	0	10	11		
		0	9			-	-
d on sieve m	m	10.0	10.0		ī		-
			-	-	-		-
			25.5	31.5	29.0	-	-
					1		
ation From		2.5%	2.5%	1.5%	2.5%	-	<u> </u>
		- •		- /			
)	%	97.0	97.5	96.0	96.0	-	- 1
	1289.5.7.1 d on sieve m paterial w Density t/ orted Wet Density t/ ontent ation From ture Content	1289.5.7.1 d on sieve mm material wet Density t/m <sup>3</sup> orted Wet Density t/m <sup>3</sup> ontent % ation From ture Content ) %	1289.5.7.1       8         d on sieve       mm       19.0         naterial       wet       0         Density       t/m³       1.85         rted Wet Density       t/m³       -         ontent       %       30.0         ation From       2.5%         ture Content       dry         )       %       97.0	1289.5.7.1         8       9         d on sieve       mm       19.0       19.0         naterial       wet       0       0         Density       t/m³       1.85       1.80         rted Wet Density       t/m³       -       -         ontent       %       30.0       25.5         ation From       2.5%       2.5%         ture Content       dry       dry         )       %       97.0       97.5	1289.5.7.1       8       9       10         d on sieve       mm       19.0       19.0       19.0         naterial       wet       0       0       0         Density       t/m³       1.85       1.80       1.83         rted Wet Density       t/m³       -       -       -         ontent       %       30.0       25.5       31.5         ation From       2.5%       2.5%       1.5%         ture Content       dry       dry       dry         )       %       97.0       97.5       96.0	1289.5.7.1       8       9       10       11         Standard       Standard         d on sieve       mm       19.0       19.0       19.0       19.0         naterial       wet       0       0       0       0       0         Density       t/m³       1.85       1.80       1.83       1.76         orted Wet Density       t/m³       -       -       -       -         ontent       %       30.0       25.5       31.5       29.0         ation From       2.5%       2.5%       1.5%       2.5%         ture Content       %       97.0       97.5       96.0       96.0	1289.5.7.1       8       9       10       11       -         d on sieve       mm       19.0       19.0       19.0       19.0       -         aterial       wet       0       0       0       0       -         Density       t/m³       1.85       1.80       1.83       1.76       -         rted Wet Density       t/m³       -       -       -       -       -         ontent       %       30.0       25.5       31.5       29.0       -         ation From       2.5%       2.5%       1.5%       2.5%       -         ure Content       4ry       dry       dry       dry       -         )       %       97.0       97.5       96.0       96.0       -



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		Job No	19140
CIVIL GEOTE	ECHNICAL SERVICES	Report No	19140/R004
6 - 8 Rose Ave	enue, Croydon, Vic 3136	Date Issued	25/02/2019
Client	YARRA VALLEY EXCAVATIONS (SEWERS)	Tested by	JB
Client Project	YARRA VALLEY EXCAVATIONS (SEWERS) GRACE - STAGES 4 & 5	Tested by Date tested	JB 22/02/19

Feature TRENCH FILL	L	ayer thickr	iess	200	mm	Time:	10:30:50
AS 12892.1.1 & 5.8.1							
AS 12892.1.1 & 5.8.1 Test No	<u>     т</u>	12	13	14	15	1	
Location		12	15	17	15		
Localion	Lot	425	444	408	436		
Approximate depth from F.S.L.	т						
Measurement depth	mm	175	175	175	175		
Field wet density	t∕m³	2.35	2.30	2.40	2.34		
Field dry density	t∕m³	2.24	2.24	2.28	2.25		
Field moisture content	%	5.0	2.5	5.5	4.0		
Material source and location Compactive effort Maximum Dry Density	t/m³		25/01/2019 20mm Class 3 - MVQ, Wyndham Vale MODIFIED				
· ·				2.1	29		
Optimum Moisture Content	%				29 .5		
·	%						
Test procedure AS 1289.5.4.1	% mm	19.0	19.0				
Test procedure AS 1289.5.4.1 Oversize rock retained on sieve		19.0	19.0 -	7.	.5		
Test procedure AS 1289.5.4.1 Oversize rock retained on sieve	mm	19.0 -	19.0 - -	7.	.5		
Test procedure AS 1289.5.4.1 Oversize rock retained on sieve Percent of oversize material Percent of oversize material	mm wet	19.0 - - -	19.0 - - -	7.	.5		
Test procedure AS 1289.5.4.1 Oversize rock retained on sieve Percent of oversize material Percent of oversize material Adjusted Maximum Dry Density	mm wet dry	-	-	7. 19.0 - -	.5 19.0 - -		
Test procedure AS 1289.5.4.1 Oversize rock retained on sieve Percent of oversize material	mm wet dry t/m <sup>3</sup>		-	7. 19.0 - - -	.5 19.0 - -		
Test procedure AS 1289.5.4.1 Oversize rock retained on sieve Percent of oversize material Percent of oversize material Adjusted Maximum Dry Density Adjusted Optimum Moisture Content	mm wet dry t/m <sup>3</sup>	-	- - - -	7. 19.0 - - - -	.5 19.0 - - - -		
Test procedure AS 1289.5.4.1 Oversize rock retained on sieve Percent of oversize material Percent of oversize material Adjusted Maximum Dry Density Adjusted Optimum Moisture Content Moisture Variation From	mm wet dry t/m <sup>3</sup>	- - - 3.0%	- - - - 5.5%	7. 19.0 - - - 2.0%	.5 19.0 - - - - 4.0%		



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