

CIVIL GEOTECHNICAL SERVICES ABN 26 474 013 724

PO Box 678 Croydon Vic 3136 Telephone: 9723 0744 Facsimile: 9723 0799

27th January 2021

Our Reference: 19770:NB872

Winslow Constructors Pty Ltd 50 Barry Road CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING ARMSTRONG – STAGES 46A & 46B (MOUNT DUNEED)

Please find attached our Report No's 19770/R001 to 19770/R012 which relate to the field density testing that was conducted within the filled allotments at the above subdivision. The level 1 inspections and associated field density testing commenced in December 2019 and was completed in September 2020.

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 (1 of 2)

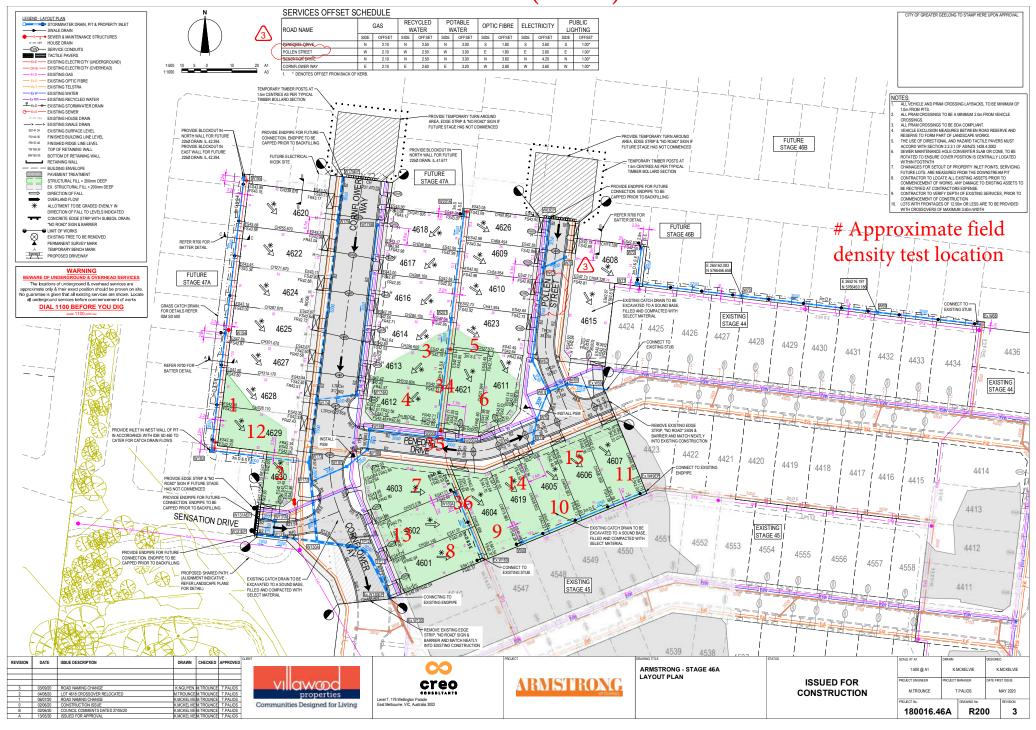
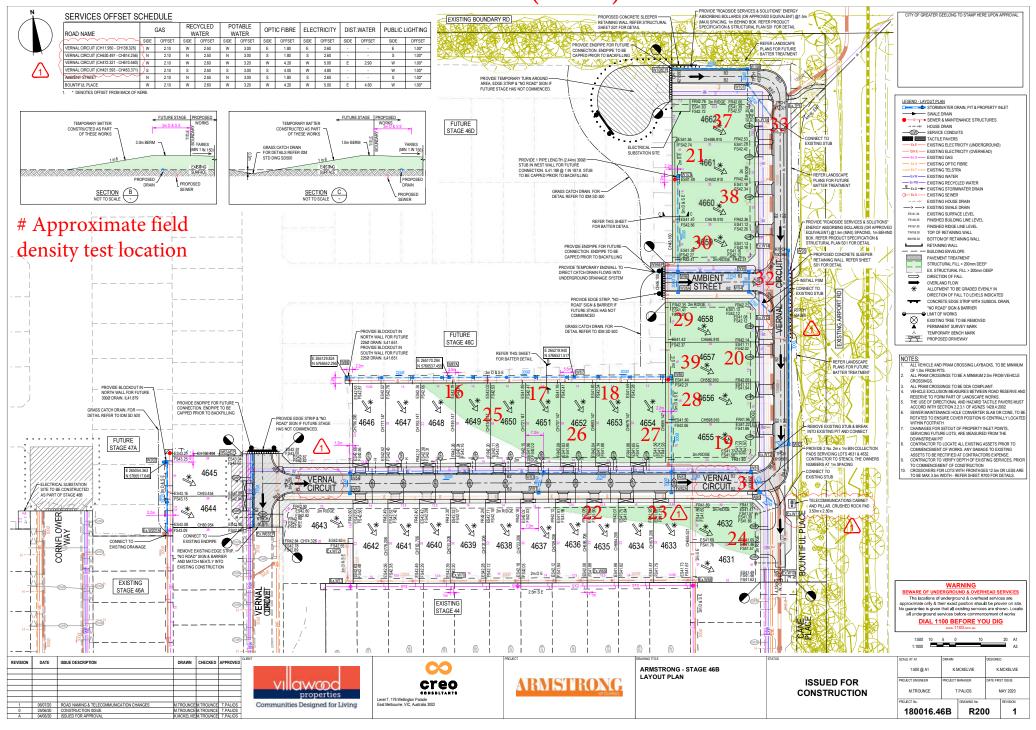


FIGURE 1 (2 of 2)





Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R001 Date Issued 04/04/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Client Tested by BGG Project **ARMSTRONG - STAGE 46** Date tested 04/12/19 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 10:00

Test No		1	2	3	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	-	-	-
Field wet density	t/m³	1.97	1.94	2.01	-	-	ı
Field moisture content	%	17.5	9.4	13.6	-	-	-
Test procedure AS 1289.5.7.1 Test No		1	2	3	-	-	-
		100	40.0	Stan	dard		
· · · · · · · · · · · · · · · · · · ·			10/1	19.0	-	-	
Oversize rock retained on sieve	mm	19.0	19.0				
Oversize rock retained on sieve Percent of oversize material	wet	0	0	0	-	-	-
Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet t/m³	0 2.01	0 2.00	0 2.00	-	-	- - -
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	0 2.01 -	0 2.00 -	0 2.00 -		-	- - -
Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density Optimum Moisture Content	wet t/m³	0 2.01 - 17.0	0 2.00 - 12.0	0 2.00 - 16.0	-	- - -	-
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	0 2.01 - 17.0	0 2.00 - 12.0	0 2.00 - 16.0	-	-	-
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	0 2.01 - 17.0	0 2.00 - 12.0	0 2.00 - 16.0	-	-	
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	0 2.01 - 17.0	0 2.00 - 12.0	0 2.00 - 16.0	-	-	-

Material description

No 1 - 3 Clay Fill



AVRLOT HILF V1.10 MAR 13



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R002 Date Issued 08/05/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Client Tested by BGG Project **ARMSTRONG - STAGE 46** Date tested 03/12/19 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 09:05

Test No		4	5	6	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
··	mm	175	175	175	-	-	-
Measurement depth	mm t/m³	175 1.95	175 1.97	175 2.04	-	-	-
Measurement depth Field wet density				_	-	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1	t/m³	1.95	1.97	2.04	-		-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No	t/m³	1.95 12.5	1.97 13.3	2.04 12.2	-		
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort	t/m³	1.95 12.5	1.97 13.3	2.04	-		
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve	t/m³ %	1.95 12.5	1.97 13.3 5	2.04 12.2 6 Stan	- dard	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	t/m³ % mm	1.95 12.5 4 19.0	1.97 13.3 5	2.04 12.2 6 Stan 19.0	- dard	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1	t/m³ % mm wet	1.95 12.5 4 19.0 0	1.97 13.3 5 19.0 0	2.04 12.2 6 Stan 19.0 0	- dard - -	- -	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	t/m³ % mm wet t/m³	1.95 12.5 4 19.0 0	1.97 13.3 5 19.0 0 2.07	2.04 12.2 6 Stan 19.0 0	- dard - - -	- - -	- - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 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	mm wet t/m³	1.95 12.5 4 19.0 0 2.02 - 14.5	1.97 13.3 5 19.0 0 2.07 - 14.5	2.04 12.2 6 Stan 19.0 0 2.07 - 14.5	- dard - - -	- - - -	- - - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³	1.95 12.5 4 19.0 0 2.02	1.97 13.3 5 19.0 0 2.07	2.04 12.2 6 Stan 19.0 0 2.07	- dard - - -	- - - -	- - - -

Material description

No 4 - 6 Clay Fill



AVRLOT HILF V1.10 MAR 13



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R003 Date Issued 12/05/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) BGG Client Tested by Project **ARMSTRONG - STAGE 46** Date tested 04/12/19 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 10:00

Test No		7	8	9	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	-	-	-
Field wet density	t/m³	2.02	1.94	1.99	-	-	-
Field moisture content	%	14.9	14.0	15.9	-		_
TIOM MORALE COMETIL	/0	14.9	14.0	13.9		-	
Test procedure AS 1289.5.7.1	/0	7	8	9	-	<u>-</u>	-
Test procedure AS 1289.5.7.1 Test No	/0				-	-	-
Test procedure AS 1289.5.7.1 Test No Compactive effort	mm			9	-	-	-
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve		7	8	9 Stan	- dard	<u> </u>	-
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	mm	7	8	9 Stan 19.0	- dard	<u> </u>	- -
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	mm wet	7 19.0 0	8 19.0 0	9 Stan 19.0	- dard - -	-	- - -
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³	7 19.0 0	8 19.0 0	9 Stan 19.0	- dard - - -	- - -	
Test procedure AS 1289.5.7.1 Test No Compactive effort	mm wet t/m³	7 19.0 0 2.05	8 19.0 0 2.05	9 Stan 19.0 0 2.02	- dard - - -	- - -	

Material description

No 7 - 9 Clay Fill

NATA

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

Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation No 9909



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R004 Date Issued 08/05/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Client Tested by BGG Project **ARMSTRONG - STAGE 46** Date tested 05/12/19 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 14:23

Test No		10	11	12	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Annyayimata danth halaw FCI							
Арргохіттате аертті ретом FSL							
	mm	175	175	175	-	-	-
Measurement depth	mm t/m³	175 1.94	175 1.98	175 1.99	-	-	-
Measurement depth Field wet density		_	_	_	-	-	
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1	t/m³	1.94 10.5	1.98 12.4	1.99 11.3	-		-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No	t/m³	1.94	1.98	1.99 11.3	-		
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort	t/m³ %	1.94 10.5	1.98 12.4	1.99 11.3 12 Stan	- dard	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve	t/m³ % mm	1.94 10.5 10	1.98 12.4 11 19.0	1.99 11.3 12 Stan 19.0	- dard -		-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	t/m³ % mm wet	1.94 10.5 10 19.0 0	1.98 12.4 11 19.0 0	1.99 11.3 12 Stand 19.0 0	- dard	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	t/m³ % mm wet t/m³	1.94 10.5 10	1.98 12.4 11 19.0	1.99 11.3 12 Stan 19.0	- dard -	-	-
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	t/m³ % mm wet t/m³ t/m³	1.94 10.5 10 19.0 0 2.01	1.98 12.4 11 19.0 0 2.01	1.99 11.3 12 Stan 19.0 0 2.07	- dard -	-	- - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	t/m³ % mm wet t/m³	1.94 10.5 10 19.0 0	1.98 12.4 11 19.0 0 2.01	1.99 11.3 12 Stan 19.0 0 2.07	- dard -	- - -	- - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	t/m³ % mm wet t/m³ t/m³	1.94 10.5 10 19.0 0 2.01	1.98 12.4 11 19.0 0 2.01	1.99 11.3 12 Stan 19.0 0 2.07	- dard - - -	- - - -	- - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	t/m³ % mm wet t/m³ t/m³	1.94 10.5 10 19.0 0 2.01	1.98 12.4 11 19.0 0 2.01	1.99 11.3 12 Stan 19.0 0 2.07	- dard - - -	- - - -	- - -

Material description

No 10 - 12 Clay Fill



AVRLOT HILF V1.10 MAR 13

Julia J



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R005 Date Issued 17/08/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) BGG Client Tested by Project **ARMSTRONG - STAGE 46** Date tested 06/12/19 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 14:44

Test No		13	14	15		-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
approximate aeptir below FOL							
Measurement depth	mm	175	175	175	-	-	-
··	mm t/m³	175 2.00	175 1.94	175 1.94	-	-	-
Measurement depth Field wet density					-	- - -	- -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1	t/m³	2.00	1.94	1.94	-	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No	t/m³	2.00 13.5	1.94 14.3	1.94 14.3			1
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort	t/m³	2.00 13.5	1.94 14.3	1.94 14.3			1
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve	t/m³ %	2.00	1.94 14.3	1.94 14.3 15 Stan	- - dard	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	t/m³ % mm	2.00 13.5 13	1.94 14.3 14 19.0	1.94 14.3 15 Stan 19.0	- - dard	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	t/m³ % mm wet	2.00 13.5 13 19.0 0	1.94 14.3 14 19.0 0	1.94 14.3 15 Stan 19.0 0	- - dard -	- -	-
Measurement depth	t/m³ % mm wet t/m³	2.00 13.5 13 19.0 0	1.94 14.3 14 19.0 0	1.94 14.3 15 Stan 19.0 0 1.97	- - dard - -	- - -	- - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³ t/m³	2.00 13.5 13 19.0 0 2.03	1.94 14.3 14 19.0 0 2.04	1.94 14.3 15 Stan 19.0 0 1.97	- - dard - - -	- - - -	- - - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³ t/m³	2.00 13.5 13 19.0 0 2.03	1.94 14.3 14 19.0 0 2.04	1.94 14.3 15 Stan 19.0 0 1.97	- - dard - - -	- - - -	- - - -

Material description

No 13 - 15 Clay Fill



AVRLOT HILF V1.10 MAR 13

Juliu J



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R006 Date Issued 08/05/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Client Tested by BGG Project **ARMSTRONG - STAGE 46** Date tested 09/12/19 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 15:00

Test No		16	17	18	-	-	-
Location							
		REFER	REFER	REFER			
		TO	TO	ТО			
		FIGURE 1	FIGURE 1	FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	_	_	_
Field wet density	t/m³	1.94	2.06	2.06	-	-	-
Field moisture content	%	12.9	9.8	14.1	-	_	
		16	17	18	-	-	_
Test No		16	17	18 Stan		-	-
Test No Compactive effort	mm	16 19.0	17			-	-
Test No Compactive effort Oversize rock retained on sieve	mm wet	19.0		Stan	dard		- -
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material		19.0	19.0	Stan 19.0	dard	- - -	- - -
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet	19.0	19.0	Stan 19.0 0	dard - -		-
Test procedure AS 1289.5.7.1 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	19.0 0 1.97	19.0	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 1.97	19.0 0 2.09 - 12.0	Stand 19.0 0 2.09	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 1.97	19.0 0 2.09	Stand 19.0 0 2.09	dard - - - -	- - -	- - -
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 1.97 - 15.5	19.0 0 2.09 - 12.0	Stand 19.0 0 2.09 - 16.5	dard	- - -	- - -
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 1.97 - 15.5	19.0 0 2.09 - 12.0	Stand 19.0 0 2.09 - 16.5	dard	- - -	- - -

Material description

No 16 - 18 Clay Fill



AVRLOT HILF V1.10 MAR 13



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R007 Date Issued 08/05/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Client Tested by BGG Project **ARMSTRONG - STAGE 46** Date tested 10/12/19 **MOUNT DUNEED** Location Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 15:55

Test No		19	20	21	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
			4	475			
· · · · · · · · · · · · · · · · · · ·	mm	175	175	175	-	_	I -
Measurement depth	mm t/m³	175 1.98	2.00	2.04	-	-	-
Measurement depth Field wet density				_	-	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1	t/m³	1.98 13.2	2.00 12.6	2.04	-	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No	t/m³	1.98	2.00	2.04 13.0	-		
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort	t/m³	1.98 13.2	2.00 12.6	2.04	-		
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve	t/m³ %	1.98 13.2	2.00 12.6 20	2.04 13.0 21 Stan	- dard	-	
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	t/m³ % mm	1.98 13.2 19	2.00 12.6 20 19.0	2.04 13.0 21 Stan 19.0	- dard	-	
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	t/m³ % mm wet	1.98 13.2 19 19.0 0	2.00 12.6 20 19.0 0	2.04 13.0 21 Stan 19.0 0	- dard - -	- -	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 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	mm wet t/m³	1.98 13.2 19 19.0 0 2.01	2.00 12.6 20 19.0 0 2.04	2.04 13.0 21 Stan 19.0 0	- dard - - -	- - -	- - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 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	mm wet t/m³ t/m³	1.98 13.2 19 19.0 0 2.01 - 15.5	2.00 12.6 20 19.0 0 2.04 - 15.0	2.04 13.0 21 Stan 19.0 0 2.07 - 15.5	- dard - - -	- - - -	- - - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³ t/m³	1.98 13.2 19 19.0 0 2.01	2.00 12.6 20 19.0 0 2.04	2.04 13.0 21 Stan 19.0 0 2.07	- dard - - -	- - - -	- - - -

Material description

No 19 - 21 Clay Fill

NATA

AVRLOT HILF V1.10 MAR 13

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

Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation No 9909

Approved Sign



	Job No	19770
CIVIL GEOTECHNICAL SERVICES	Report No	19770/R008
6 - 8 Rose Avenue, Croydon 3136	Date Issued	19/02/2020
Client WINSLOW CONSTRUCTORS BTV LTD (CAMPRELLEIELD)	Tastad hy	BCC

ClientWINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)Tested byBGGProjectARMSTRONG - STAGE 46Date tested12/12/19LocationMOUNT DUNEEDChecked byJHF

Feature EARTHWORKS Layer thickness 200 mm Time: 13:14

Test procedure AS 1	1289.2.1.1	& 5.8.1
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Test No		22	23	24	25	26	27
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		TO	TO	TO	TO	TO	TO
		FIGURE 1					
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m³	1.92	1.92	1.91	1.91	1.92	1.92
Field moisture content	%	17.2	16.2	13.8	16.6	17.3	18.9

Test procedure AS 1289.5.7.1

Test No		22	23	24	25	26	27	
Compactive effort	Standard							
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	1.95	1.95	1.94	1.95	1.95	1.94	
Adjusted Peak Converted Wet Density	t/m³	1	-	-	-	-	-	
Optimum Moisture Content	%	19.5	15.0	15.0	15.5	15.0	16.5	

Moisture Variation From	2.5%	1.5%	1.0%	1.5%	2.5%	2.5%
Optimum Moisture Content	dry	wet	dry	wet	wet	wet

Density Ratio (R _{HD})	%	98.5	98.5	98.0	97.5	99.0	99.5

Material description

No 22 - 27 Clay Fill

NATA

AVRLOT HILF V1.10 MAR 13

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Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R009 Date Issued 30/01/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Client Tested by BGG Project **ARMSTRONG - STAGE 46** Date tested 13/12/19 **MOUNT DUNEED** Location Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 00:22

Test No		28	29	30	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	-	-	-
Field wet density	t/m³	1.95	1.95	1.95	-	-	-
Field moisture content	%	18.2	14.6	19.7	-	-	-
Test procedure AS 1289.5.7.1							
		28	29	30	-	-	-
Test No		28	29	30 Stan		-	-
Test No Compactive effort	mm	28 19.0	29 19.0			-	-
Test No Compactive effort Oversize rock retained on sieve	mm wet			Stan		l I	-
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material		19.0	19.0	Stan 19.0		-	-
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	wet	19.0	19.0 0	Stan 19.0 0		-	-
Test procedure AS 1269.3.7.1 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	19.0	19.0 0	Stan 19.0 0		- - -	-
Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	wet t/m³ t/m³	19.0 0 1.96	19.0 0 1.98	Stan 19.0 0 1.93	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 1.96	19.0 0 1.98	Stan 19.0 0 1.93	dard - - - -	- - -	- - -
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 1.96 - 20.0	19.0 0 1.98 - 17.0	Stan 19.0 0 1.93 - 21.5	dard - - - -	- - -	- - -
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 1.96 - 20.0	19.0 0 1.98 - 17.0	Stan 19.0 0 1.93 - 21.5	dard - - - -	- - -	- - -

Material description

No 28 - 30 Clay Fill



AVRLOT HILF V1.10 MAR 13



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R010 Date Issued 13/10/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) BGG Client Tested by Project **ARMSTRONG - STAGE 46** Date tested 04/03/20 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 11:12

Test No		31	32	33	-	-	-
Location							
		REFER	REFER	REFER			
		TO	TO	ТО			
		FIGURE 1	FIGURE 1	FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	-	-	-
Field wet density	t/m³	1.93	1.98	1.98	-	-	-
Field moisture content	%	14.3	15.1	13.8	-	_	_
riela moistare content	/0	14.5	13.1	10.0		_	<u> </u>
Test procedure AS 1289.5.7.1	76						I -
Test procedure AS 1289.5.7.1 Test No	70	31	32	33	-	-	-
Test procedure AS 1289.5.7.1 Test No Compactive effort		31	32	33 Stan	-	-	-
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve	mm wet			33	- dard	I	-
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	mm	31 19.0	32 19.0	33 Stan 19.0	- dard -	-	-
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	mm wet	31 19.0 0	32 19.0 0	33 Stan 19.0 0	- dard -	-	-
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³	31 19.0 0	32 19.0 0	33 Stan 19.0 0	- dard -	- - -	-
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³	31 19.0 0 1.90	32 19.0 0 2.00	33 Stan 19.0 0 2.02	- dard - - -	- - -	
Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³	31 19.0 0 1.90	32 19.0 0 2.00	33 Stan 19.0 0 2.02	- dard - - -	- - -	
Test procedure AS 1289.5.7.1 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	mm wet t/m³	31 19.0 0 1.90 - 16.5	32 19.0 0 2.00 - 17.5	33 Stan 19.0 0 2.02 - 15.5	- dard - - -	- - -	
Test procedure AS 1289.5.7.1 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	mm wet t/m³	31 19.0 0 1.90 - 16.5	32 19.0 0 2.00 - 17.5	33 Stan 19.0 0 2.02 - 15.5	- dard - - -	- - -	

Material description

No 31 - 33 Clay Fill

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Julia Jo



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R011 Date Issued 17/08/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) BGG Client Tested by Project **ARMSTRONG - STAGE 46** Date tested 11/08/20 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 11:07

						`
	REFER	REFER	REFER			
	TO	TO	TO			
	FIGURE 1	FIGURE 1	FIGURE 1			
mm	175	175	175	-	-	-
t/m³	1.89	1.88	1.89	-	-	-
%	27.1	28.7	23.6	-	-	-
	34	35	36	-	_	_
	_			dard		
mm	19.0	19.0	19.0	-	-	-
wet	0	0	0	-	-	-
t/m³	1.92	1.90	1.92	-	-	-
t/m³	-	-	-	-	-	-
%	29.5	31.5	26.0	-	-	-
	2.5%	2.5%	2.5%	-	-	-
			dry			
	mm wet t/m³	mm 175 t/m³ 1.89 % 27.1 34 mm 19.0 wet 0 t/m³ 1.92 t/m³ - % 29.5	mm 175 175 t/m³ 1.89 1.88 % 27.1 28.7 mm 19.0 19.0 wet 0 0 t/m³ 1.92 1.90 t/m³ - - % 29.5 31.5	mm 175 175 175 t/m³ 1.89 1.88 1.89 % 27.1 28.7 23.6 34 35 36 Standard Standard mm 19.0 19.0 19.0 wet 0 0 0 t/m³ 1.92 1.90 1.92 t/m³ - - - % 29.5 31.5 26.0	mm 175 175 175 - t/m³ 1.89 1.88 1.89 - % 27.1 28.7 23.6 - Standard mm 19.0 19.0 19.0 - wet 0 0 0 - t/m³ 1.92 1.90 1.92 - t/m³ - - - % 29.5 31.5 26.0 -	mm 175 175 175 - - t/m³ 1.89 1.88 1.89 - - % 27.1 28.7 23.6 - - Standard mm 19.0 19.0 19.0 - - wet 0 0 0 - - t/m³ 1.92 1.90 1.92 - - t/m³ - - - - % 29.5 31.5 26.0 - -

Material description

No 34 - 36 Clay Fill

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Julia J



Job No 19770 **CIVIL GEOTECHNICAL SERVICES** Report No 19770/R012 Date Issued 24/08/2020 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Client Tested by BGG Project **ARMSTRONG - STAGE 46** Date tested 12/08/20 Location MOUNT DUNEED Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 08:54

Test No		37	38	39	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL							
ippioninate depth below i CL							
• • • • • • • • • • • • • • • • • • • •	mm	175	175	175	-	-	-
Measurement depth	mm t/m³	175 1.91	175 1.90	175 1.87	-	-	-
Measurement depth Field wet density		_	_	_	-	-	- -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1	t/m³	1.91	1.90	1.87	-	-	-
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No	t/m³	1.91 19.1	1.90 24.5	1.87 14.7	-		
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort	t/m³	1.91 19.1	1.90 24.5	1.87 14.7	-		
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve	<i>t/m</i> ³	1.91 19.1 37	1.90 24.5 38	1.87 14.7 39 Stan	- dard	-	
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material	t/m³ % mm	1.91 19.1 37	1.90 24.5 38 19.0	1.87 14.7 39 Stan 19.0	- dard	-	
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density	t/m³ % mm wet	1.91 19.1 37 19.0 0	1.90 24.5 38 19.0 0	1.87 14.7 39 Stan 19.0 0	- dard	-	
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 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	t/m³ % mm wet t/m³	1.91 19.1 37 19.0 0	1.90 24.5 38 19.0 0 1.97	1.87 14.7 39 Stan 19.0 0	- dard - - -	- - -	- - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³	1.91 19.1 37 19.0 0 1.96	1.90 24.5 38 19.0 0 1.97	1.87 14.7 39 Stan 19.0 0 1.96	- dard - - -	- - -	- - -
Measurement depth Field wet density Field moisture content Test procedure AS 1289.5.7.1 Test No Compactive effort Oversize rock retained on sieve Percent of oversize material Peak Converted Wet Density Adjusted Peak Converted Wet Density	mm wet t/m³	1.91 19.1 37 19.0 0 1.96	1.90 24.5 38 19.0 0 1.97	1.87 14.7 39 Stan 19.0 0 1.96	- dard - - -	- - -	- - -

Material description

No 37 - 39 Clay Fill

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