



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

28th April 2021

Our Reference: 20705:NB942

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
ARMSTRONG – STAGE 47A / 65A (MOUNT DUNEED)

Please find attached our Report No's 20705/R001 to 20705/R008 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 commenced in December 2020 and was completed in January 2021.

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).

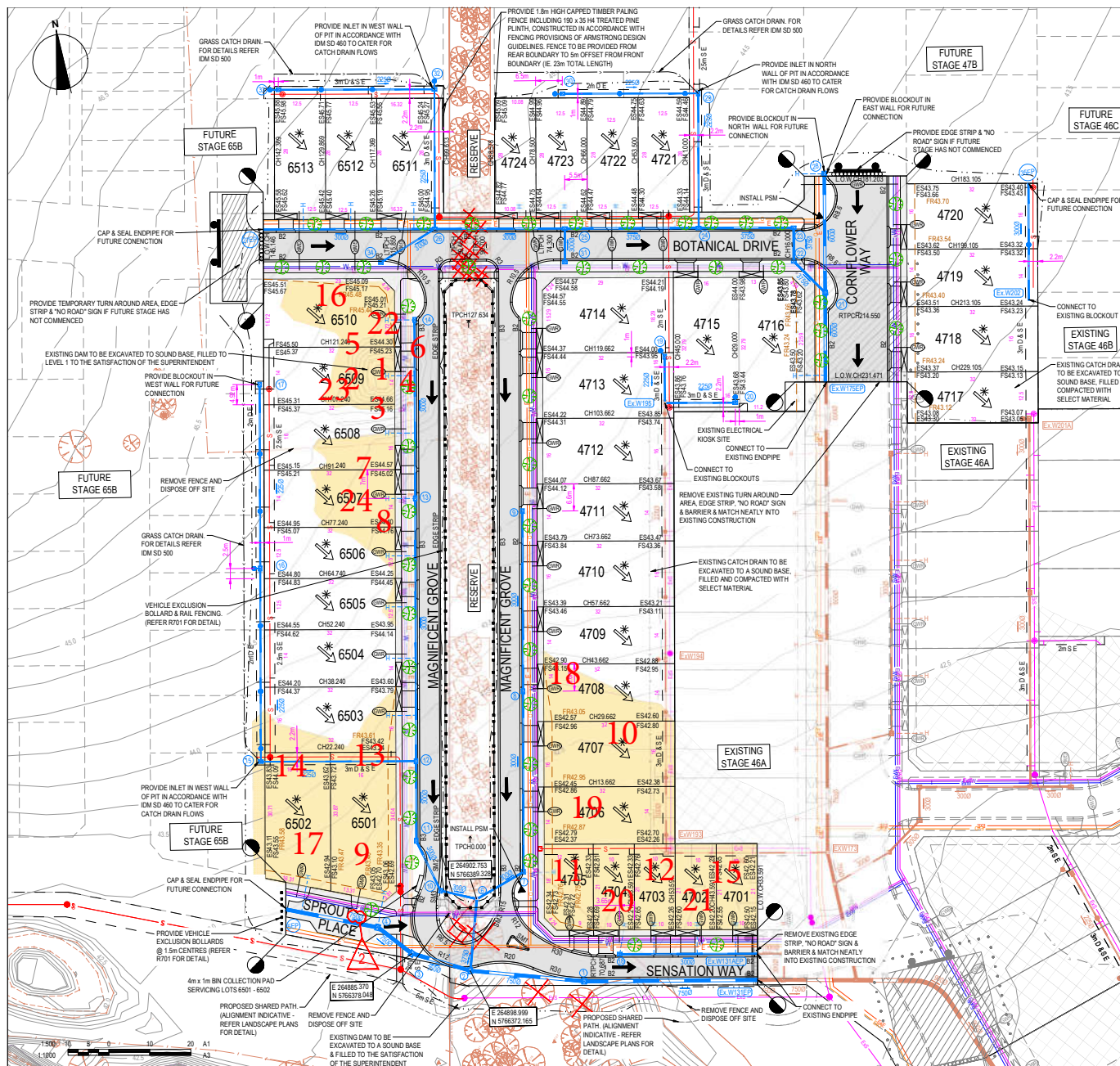
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

FIGURE 1



CITY OF GREATER GEELONG TO STAMP HERE UPON APPROVAL

- | NOTES | |
|-------|--|
| 1. | ALL VEHICLE AND PRAM CROSSING LAYBACKS, TO BE MINIMUM OF 1.0m FROM PITTS. |
| 2. | ALL PRAM CROSSINGS TO BE A MINIMUM 2.0m FROM VEHICLE CROSSINGS. |
| 3. | ALL PRAM CROSSINGS TO BE DDA COMPLIANT. |
| 4. | VEHICLE EXCLUSION MEASURES BETWEEN ROAD RESERVE AND RESERVE TO FORM PART OF LANDSCAPE WORKS. |
| 5. | THESE ARE DIRECTIONAL, AND HAZARDOUS WASTE PLUMBERS MUST ACCORD WITH SECTION 2.3.1 OF AS/NZS 4428.4:2002 |
| 6. | SEWER MAINTENANCE HOLE CONVERTER SLAB OR CONE, TO BE ROTATED TO ENSURE COVER POSITION IS CENTRALLY LOCATED. |
| 7. | FOR NORTH |
| 8. | CHANGES FOR SETUP OF PRIORITY INLET POINTS. |
| 9. | SERVICING FUTURE LOTS, ARE MEASURED FROM THE DOWNSTREAM PIT. |
| 10. | CONTRACTOR TO LOCATE ALL EXISTING ASSETS PRIOR TO COMMENCEMENT OF WORKS, ANY DAMAGE TO EXISTING ASSETS TO BE RECTIFIED AT CONTRACTORS EXPENSE. |
| 11. | CONTRACTOR TO VERIFY LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION. |

LEGEND - Layout Plans

- STORMWATER DRAIN, PIT & PROPERTY INLET
- SEWER DRAIN
- SWALE
- SWALE & MAINTENANCE STRUCTURES
- SERVICE DRAIN
- SERVICE CONDUITS
- - - - - EXISTING ELECTRICITY (UNDERGROUND)
- - - - - EXISTING ELECTRICITY (OVERHEAD)
- - - - - EXISTING GAS
- - - - - EXISTING OPTIC FIBRE
- - - - - EXISTING TELSTRA
- - - - - EXISTING WATER
- - - - - EXISTING RECYCLED WATER
- - - - - EXISTING STORMWATER DRAIN
- - - - - EXISTING SEWER
- ▭ EXISTING SURFACE LEVEL
- ▭ FINISHED BUILDING LEVEL
- ▭ FINISHED RIDGE LINE LEVEL
- ▭ PAVEMENT TREATMENT
- ▭ STRUCTURAL FILL > 200mm DEEP
- ▭ EXISTING STRUCTURAL FILL > 200mm DEEP
- DIRECTION OF FALL
- OVERLAND FLOW
- ★ ALLOTMENT TO BE GRADED EVENLY IN
DIRECTION OF FALL TO EXISTING
CONCRETE GRADE STRIP WITH SUBSOIL DRAIN
"NO ROAD" SIGN & BARRIER
- LIMIT OF WORKS
- EXISTING TREE TO BE REMOVED
- TEMPORARY SURVEY MARK
- TEMPORARY BENCH MARK
- PROPOSED DRIVEWAY
- STORM WATER PIT SETOUT POINT

NOTE: STREET TREE LOCATIONS SHOWN
ARE INDICATIVE ONLY. ULTIMATE LOCATION
IS TO BE PROVIDED/CONFIRMED BY
LANDSCAPE ARCHITECTS

WARNING
BEWARE OF UNDERGROUND & OVERHEAD SERVICES
The locations of underground & overhead services are approximate only & their exact position should be proven on site. No guarantee is given that all existing services are shown. Locate all underground services before commencement of works
DIAL 1100 BEFORE YOU DIG

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# Approximate field
density test location
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SERVICES OFFSET SCHEDULE

ROAD NAME	GAS		RECYCLED WATER		POTABLE WATER		OPTIC FIBRE		ELECTRICITY		PUBLIC LIGHTING	
	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET
SENSATION DRIVE	N 210	N 250	N 250	N 300	N 360	N 360	N 420	N 100'				
CORNIFOLIO WAY	E 210	E 260	E 320	E 320	W 360	W 360	W 100'					
BOTANICAL DRIVE	S 210	S 250	S 300	N 180	N 180	N 260	N 100'					
SPRING PLACE	N 210	N 250	S 300	S 300	W 180	W 180	W 100'					
MAGNIFICENT PARADE (SOUTHBOUND)	E 180	E 220	E 270	E 270	E 330	E 330	E 100'					
MAGNIFICENT PARADE (NORTHBOUND)	W 180	W 220	W 270	W 270	W 330	W 330	W 100'					

1. * DENOTES OFFSET FROM BACK OF KERB

REVISION	DATE	ISSUE DESCRIPTION	DRAWN	CHECKED	APPROVED
2	06/01/21	ALTERED DRAINAGE GRADE & SIZE (RUN 04 - 05EP)	C RHODE	M TROUNCE	T PALIOS
1	29/11/20	LOT 6508 CROSSOVER RELOCATION & ADDED BLOCKOUT	C RHODE	M TROUNCE	T PALIOS
0	02/11/20	CONSTRUCTION ISSUE	C RHODE	M TROUNCE	T PALIOS
8	26/10/20	AMENDED TO COUNCIL COMMENTS (23/10/20)	C RHODE	M TROUNCE	T PALIOS
	28/09/20	ISSUED FOR RAPPROVAL	C RHODE	M TROUNCE	T PALIOS



ARMSTRONG - STAGE 47A/65A
LAYOUT PLAN

	STATUS
1	STATUS

ISSUED FOR
CONSTRUCTION

SCALE AT A1	DRAWN	DESIGNED
1:500 @ A1	C.ROHDE	C.ROHDE
PROJECT ENGINEER	PROJECT MANAGER	DATE FIRST ISSUE
M.TROUNCE	T.PALIOS	APRIL 2020
PROJECT No:	DRAWING No:	REVISION
180016.47A	R200	2



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20705
Report No 20705/R001
Date Issued 23/03/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	ARMSTRONG - STAGE 47A / 65A	Date tested	15/12/20
Location	MOUNT DUNEED	Checked by	JHF

Feature	DAM FILL	Layer thickness	200 mm	Time: 15:13
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	-	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL	m	1.0	0.8			
Measurement depth	mm	175	175	-	-	-
Field wet density	t/m ³	1.87	1.87	-	-	-
Field moisture content	%	25.4	27.5	-	-	-

Test procedure AS 1289.5.7.1

Test No	1	2	-	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	-	-	-
Peak Converted Wet Density	t/m ³	1.97	1.97	-	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	25.5	25.0	-	-	-

Moisture Variation From Optimum Moisture Content	0.0%	2.5% wet	-	-	-	-
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Density Ratio (R_{HD})	%	95.0	95.5	-	-	-	-
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Material description

No 1 - 2 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20705
Report No 20705/R002
Date Issued 22/03/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	ARMSTRONG - STAGE 47A / 65A	Date tested	16/12/20
Location	MOUNT DUNEED	Checked by	JHF

Feature	DAM FILL	Layer thickness	200 mm	Time: 14:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No		3	4	-	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL	m	0.6	0.4				
Measurement depth	mm	175	175	-	-	-	-
Field wet density	t/m ³	1.79	1.79	-	-	-	-
Field moisture content	%	25.7	25.2	-	-	-	-

Test procedure AS 1289.5.7.1

Test No		3	4	-	-	-	-
Compactive effort		Standard					
Oversize rock retained on sieve	mm	19.0	19.0	-	-	-	-
Percent of oversize material	wet	0	0	-	-	-	-
Peak Converted Wet Density	t/m ³	1.80	1.79	-	-	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	28.0	27.0	-	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	-	-	-	-
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Density Ratio (R_{HD})	%	99.0	99.5	-	-	-	-
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Material description

No 3 - 4 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20705
Report No 20705/R003
Date Issued 13/04/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	ARMSTRONG - STAGE 47A / 65A	Date tested	17/12/20
Location	MOUNT DUNEED	Checked by	JHF

Feature	DAM FILL	Layer thickness	200 mm	Time: 13:38
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	5	6	-	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL	0.2	fsl				
Measurement depth	175	175	-	-	-	-
Field wet density	1.76	1.78	-	-	-	-
Field moisture content	26.1	23.7	-	-	-	-

Test procedure AS 1289.5.7.1

Test No	5	6	-	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	19.0	19.0	-	-	-	-
Percent of oversize material	0	0	-	-	-	-
Peak Converted Wet Density	1.77	1.80	-	-	-	-
Adjusted Peak Converted Wet Density	-	-	-	-	-	-
Optimum Moisture Content	28.5	26.5	-	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	-	-	-	-
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Density Ratio (R_{HD})	%	99.5	99.0	-	-	-	-
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Material description

No 5 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20705
Report No 20705/R004
Date Issued 18/01/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	ARMSTRONG - STAGE 47A / 65A	Date tested	12/01/21
Location	MOUNT DUNEED	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:48
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Test procedure AS 1289.2.1.1 & 5.8.1

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/m ³	1.85	1.85	1.85	-	-	-
Field moisture content %	17.9	17.3	16.6	-	-	-

Test procedure AS 1289.5.7.1

Test No	7	8	9	-	-	-
Compactive effort	Standard					
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/m ³	1.89	1.85	1.95	-	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	17.5	20.0	18.5	-	-	-

Moisture Variation From Optimum Moisture Content	0.5% wet	2.5% dry	2.0% dry	-	-	-
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Density Ratio (R_{HD})	%	98.0	100.0	95.0	-	-	-
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Material description

No 7 - 9 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Justin Fry

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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20705
Report No 20705/R005
Date Issued 19/01/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	ARMSTRONG - STAGE 47A / 65A	Date tested	13/01/21
Location	MOUNT DUNEED	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:48
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	-	-	-
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/m ³	1.94	1.94	1.95	-	-	-
Field moisture content %	19.1	17.8	21.2	-	-	-

Test procedure AS 1289.5.7.1

Test No	10	11	12	-	-	-
Compactive effort	Standard					
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/m ³	1.97	1.98	2.00	-	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	21.5	20.0	23.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.0% dry	-	-	-
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Density Ratio (R_{HD})	%	98.5	98.0	97.5	-	-	-
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Material description

No 10 - 12 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20705
Report No 20705/R006
Date Issued 09/02/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	ARMSTRONG - STAGE 47A / 65A	Date tested	14/01/21
Location	MOUNT DUNEED	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:04
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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 mm	175	175	175	-	-	-
Field wet density t/m ³	1.94	1.94	1.95	-	-	-
Field moisture content %	26.1	20.3	19.7	-	-	-

Test procedure AS 1289.5.7.1

Test No	13	14	15	-	-	-
Compactive effort	Standard					
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/m ³	2.00	2.00	2.00	-	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	27.5	21.5	21.5	-	-	-

Moisture Variation From Optimum Moisture Content	1.5% dry	1.0% dry	2.0% dry	-	-	-
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Density Ratio (R_{HD})	%	97.0	97.0	97.5	-	-	-
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Material description

No 13 - 15 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Justin Fry

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20705
Report No 20705/R007
Date Issued 09/02/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	ARMSTRONG - STAGE 47A / 65A	Date tested	19/01/21
Location	MOUNT DUNEED	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:37
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	16	17	18	19	20	21
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Approximate depth below FSL						
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m ³	1.96	1.96	1.96	1.97	1.97	1.97
Field moisture content %	25.7	23.5	25.4	23.2	23.2	26.1

Test procedure AS 1289.5.7.1

Test No	16	17	18	19	20	21
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/m ³	2.00	2.02	2.04	2.03	2.02	2.06
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	28.0	26.0	27.5	25.5	21.0	27.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.0% dry	2.5% dry	2.0% wet	1.0% dry
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Density Ratio (R_{HD})	%	98.0	97.0	96.0	97.0	97.5	96.0
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Material description

No 16 - 21 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20705
Report No 20705/R008
Date Issued 01/02/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	ARMSTRONG - STAGE 47A / 65A	Date tested	20/01/21
Location	MOUNT DUNEED	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 14:41
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	22	23	24	-	-	-
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/m ³	2.04	2.04	2.04	-	-	-
Field moisture content %	12.9	12.7	14.1	-	-	-

Test procedure AS 1289.5.7.1

Test No	22	23	24	-	-	-
Compactive effort	Standard					
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/m ³	2.04	2.08	2.09	-	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	15.0	15.0	16.5	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	2.5% dry	-	-	-
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Density Ratio (R_{HD})	%	100.0	98.0	97.5	-	-	-
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Material description

No 22 - 24 Clay Fill

AVRLOT HILF V1.10 MAR 13



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