



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

3rd September 2024

Our Reference: 24313:NB1986

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
OFFICER CENTRAL – STAGE 12 (OFFICER)**

Please find attached our Report No's 24313/R001 to 24313/R007 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 was performed in July 2024.

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



FILL GREATER THAN 200mm
 CUT GREATER THAN 200mm

Approximate field density test location



WARNING
 BEAWARE OF UNDERGROUND/OVERHEAD SERVICES
 THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES UNDER OVERHEAD ELECTRICITY TRANSMISSION LINES.

File Name: 310311CR20.dwg, Plot Size: A1, Date: 07/02/24, 11:45:00 AM, User: P.W.H., File Location: G:\310311CR20\110724\2100 PM Sheet 4 of 15 Sheets

Scale	H 1500 SCALE @ A1	
Rev	Amendments	Date
A	PRELIMINARY ISSUE	07/02/24
B.W	Approved	

System Certified

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YourLand
 Developments

Designed
D.PRATT

Checked
B.IBBS - PE0007167

Authorised
B.WAREHAM

Date
FEBRUARY 2024

**OFFICER CENTRAL
 STAGE 12
 ROAD AND DRAINAGE
 ROAD LAYOUT PLANS - EARTHWORKS PLAN**
 CARDINIA SHIRE COUNCIL
 YOURLAND PTY LTD

PRELIMINARY 310311CR20

Dwg No 310311CR20

Rev A



COMPACTION ASSESSMENT

Job No 24313
 Report No 24313/R001
 Date Issued 26/07/24

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CV
Project	OFFICER CENTRAL - STAGE 12	Date tested	22/07/24
Location	OFFICER	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:26
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	3	4	5	6
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
Field wet density	t/m ³	2.06	2.08	2.06	1.88	1.94
Field moisture content	%	18.0	17.0	21.6	21.1	15.8

Test procedure AS 1289.5.7.1

Test No	1	2	3	4	5	6
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0
Peak Converted Wet Density	t/m ³	2.09	2.14	2.09	1.98	1.97
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	18.0	19.5	21.0	24.0	15.5

Moisture Variation From Optimum Moisture Content	0.0%	2.5% dry	0.5% wet	2.5% dry	0.0%	2.5% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	99.0	97.5	99.0	95.0	98.5	97.0
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Material description

No 1 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 24313
 Report No 24313/R002
 Date Issued 26/07/24

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CV
Project	OFFICER CENTRAL - STAGE 12	Date tested	23/07/24
Location	OFFICER	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:35
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9	10	11	12	
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	
Field wet density	t/m ³	1.92	1.96	2.16	1.97	2.06	1.94
Field moisture content	%	24.6	19.7	15.9	23.6	18.1	18.3

Test procedure AS 1289.5.7.1

Test No	7	8	9	10	11	12	
Compactive effort	Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	
Percent of oversize material	wet	0	0	0	0	0	
Peak Converted Wet Density	t/m ³	1.95	2.01	2.20	2.01	2.09	1.99
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	24.5	22.5	16.0	26.0	18.0	21.0

Moisture Variation From Optimum Moisture Content	0.0%	2.5% dry	0.0%	2.0% dry	0.0%	2.5% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	98.5	97.5	98.5	98.0	98.5	97.5
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Material description

No 7 - 12 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 24313
 Report No 24313/R003
 Date Issued 30/07/24

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CV
Project	OFFICER CENTRAL - STAGE 12	Date tested	24/07/24
Location	OFFICER	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:43
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	13	14	15	16	17	18
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
Field wet density	t/m ³	2.00	1.92	2.07	2.10	2.05
Field moisture content	%	21.5	23.4	19.3	18.2	22.1

Test procedure AS 1289.5.7.1

Test No	13	14	15	16	17	18
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0
Peak Converted Wet Density	t/m ³	2.03	1.99	2.09	2.10	2.08
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	20.5	22.5	19.5	20.5	20.0

Moisture Variation From Optimum Moisture Content	1.0% wet	1.0% wet	0.5% dry	2.0% dry	2.0% wet	2.5% wet
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	99.0	96.0	99.5	100.0	98.0	96.0
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Material description

No 13 - 18 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 24313
 Report No 24313/R004
 Date Issued 29/07/24

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CV
Project	OFFICER CENTRAL - STAGE 12	Date tested	25/07/24
Location	OFFICER	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 14:45
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	19	20	21	22	23	24	
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	
Field wet density	t/m ³	2.01	2.05	2.06	1.91	2.10	2.03
Field moisture content	%	18.8	21.8	21.8	23.1	18.8	23.4

Test procedure AS 1289.5.7.1

Test No	19	20	21	22	23	24	
Compactive effort	Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	
Percent of oversize material	wet	0	0	0	0	0	
Peak Converted Wet Density	t/m ³	2.04	2.08	2.07	1.97	2.14	2.01
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	21.5	21.0	21.5	23.5	20.5	25.5

Moisture Variation From Optimum Moisture Content	2.5% dry	1.0% wet	0.0%	0.0%	1.5% dry	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	98.5	98.5	99.0	97.5	98.5	101.0
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Material description

No 19 - 24 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 24313
 Report No 24313/R005
 Date Issued 30/07/24

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CV
Project	OFFICER CENTRAL - STAGE 12	Date tested	26/07/24
Location	OFFICER	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:32
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	25	26	27	28	29	30
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
Field wet density	t/m ³	2.07	1.93	1.98	1.93	1.91
Field moisture content	%	21.7	27.2	27.2	27.8	26.0

Test procedure AS 1289.5.7.1

Test No	25	26	27	28	29	30
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0
Peak Converted Wet Density	t/m ³	2.10	1.93	2.01	1.97	1.94
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	24.0	29.0	30.0	28.0	26.5

Moisture Variation From Optimum Moisture Content	2.0% dry	1.5% dry	2.5% dry	0.0%	0.0%	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	98.5	100.0	98.5	98.5	98.0	98.0
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Material description

No 25 - 30 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 24313
 Report No 24313/R006
 Date Issued 30/07/24

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CV
Project	OFFICER CENTRAL - STAGE 12	Date tested	29/07/24
Location	OFFICER	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:53
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	31	32	33	-	-	-
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	1.98	2.03	1.96	-	-
Field moisture content	%	23.0	26.7	22.3	-	-

Test procedure AS 1289.5.7.1

Test No	31	32	33	-	-	-
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	2.02	2.06	1.98	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	23.0	29.0	24.5	-	-

Moisture Variation From Optimum Moisture Content	0.0%	2.0% dry	2.0% dry	-	-	-
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	98.0	98.5	99.0	-	-
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Material description

No 31 - 33 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 24313
 Report No 24313/R007
 Date Issued 31/07/24

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CV
Project	OFFICER CENTRAL - STAGE 12	Date tested	30/07/24
Location	OFFICER	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:22
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	34	35	36	-	-	-
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	1.99	2.00	1.99	-	-
Field moisture content	%	22.0	21.0	20.6	-	-

Test procedure AS 1289.5.7.1

Test No	34	35	36	-	-	-
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	2.03	2.03	2.02	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	23.0	23.5	23.0	-	-

Moisture Variation From Optimum Moisture Content	1.0% dry	2.0% dry	2.0% dry	-	-	-
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	98.0	99.0	98.5	-	-
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Material description

No 34 - 36 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry