



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

28<sup>th</sup> October 2019

Our Reference: 19306:NB590

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
CORNERSTONE – STAGE 15 (WYNDHAM VALE)**

Please find attached our Report No's 19306/R001 and 19306/R002 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 was performed in May 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

A handwritten signature in blue ink, appearing to be 'Nick Brock', is written over a light blue circular stamp.

Nick Brock





## COMPACTION ASSESSMENT

Job No 19306  
 Report No 19306/R001  
 Date Issued 21/05/2019

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	MAMBOURIN - STAGE 1 (EXTERNAL)	Date tested	09/05/19
Location	MAMBOURIN	Checked by	JHF

<b>Feature</b>	EARTHWORKS	Layer thickness	200 mm	Time: 17:44
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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 <i>mm</i>	175	175	175	175	175	175
Field wet density <i>t/m<sup>3</sup></i>	1.88	1.90	1.87	1.88	1.88	1.88
Field moisture content <i>%</i>	33.8	30.4	32.6	30.7	34.8	31.4

Test procedure AS 1289.5.7.1

Test No	1	2	3	4	5	6
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material <i>wet</i>	0	0	0	0	0	0
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.90	1.89	1.90	1.91	1.90	1.89
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	34.0	30.5	32.5	30.5	32.5	31.5

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	0.0%	2.5% wet	0.0%
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<b>Density Ratio ( <math>R_{HD}</math> )</b>	<b>%</b>	<b>99.0</b>	<b>100.5</b>	<b>98.5</b>	<b>98.5</b>	<b>99.0</b>	<b>99.5</b>
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Material description

No 1 - 6 Clay Fill
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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 Signatory : Justin Fry



## COMPACTION ASSESSMENT

Job No 19306  
 Report No 19306/R002  
 Date Issued 26/10/2019

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	MAMBOURIN - STAGE 1 (EXTERNAL)	Date tested	21/05/19
Location	WYNDHAM VALE	Checked by	JHF

<b>Feature</b>	<b>EARTHWORKS</b>	Layer thickness	200 mm	Time: 12:52
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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 <span style="float: right;">mm</span>	175	175	175	175	175	175
Field wet density <span style="float: right;">t/m<sup>3</sup></span>	1.73	1.71	1.73	1.83	1.83	1.84
Field moisture content <span style="float: right;">%</span>	29.7	32.5	31.8	30.1	31.2	31.3

Test procedure AS 1289.5.7.1

Test No	7	8	9	10	11	12
Compactive effort	Standard					
Oversize rock retained on sieve <span style="float: right;">mm</span>	0.0	0.0	0.0	0.0	0.0	0.0
Percent of oversize material <span style="float: right;">wet</span>	19	19	19	19	19	19
Peak Converted Wet Density <span style="float: right;">t/m<sup>3</sup></span>	1.81	1.80	1.81	1.89	1.88	1.91
Adjusted Peak Converted Wet Density <span style="float: right;">t/m<sup>3</sup></span>	-	-	-	-	-	-
Optimum Moisture Content <span style="float: right;">%</span>	27.5	30.0	30.0	28.5	28.5	29.5

Moisture Variation From Optimum Moisture Content	2.0% wet	2.5% wet	2.0% wet	1.5% wet	2.5% wet	2.0% wet
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>95.5</b>	<b>95.0</b>	<b>95.5</b>	<b>97.0</b>	<b>97.5</b>	<b>96.5</b>
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Material description

No 7 - 12 Clay Fill
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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 Signatory : Justin Fry