



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

25th September 2023

Our Reference: 22779:NB1684

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
HARLOW - STAGE 2 (TARNEIT)**

Please find attached our Report No's 22779/R001 to 23779/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 in February 2023 and was completed in July 2023.

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 read 'Nick Brock', is written over a faint, light blue circular stamp.

Nick Brock

FIGURE 1



Planning and Environment Act 1987
Wyndham Planning Scheme
Approved Plan As Required
under Condition 51
Permit No WYP13135/21
Date 20/09/2022

Approximate field
density test location

LEGEND	
EXCAVATION GREATER THAN 0.2m	
FILLING GREATER THAN 0.2m	
BATTER	
EXISTING SURFACE LEVEL	E50.17
FINISHED SURFACE LEVEL	F54.9.89
TOP OF BATTER LEVEL	T4.9.59
LOT GRADE	
NOTES:	
1. DEPTHS OF CUT AND FILL AS MEASURED BETWEEN EXISTING AND FINISHED SURFACES.	
2. BATTER MAXIMUM IN FRONT OF LOT 4 METRES	
3. BATTER MAXIMUM TO SIDE OF LOT 2 METRES	

Rev	Amendments	Approved	Date
0	COUNCIL COMMENTS AMENDED, ISSUED FOR CONSTRUCTION	M.R	23/09/22



© Spiire Australia Pty Ltd All Rights Reserved
This document is produced by Spiire Australia Pty Ltd solely for the benefit of and use by the client in accordance with the terms of the contract. Spiire Australia Pty Ltd does not and shall not assume any responsibility or liability whatsoever to any third party relying on it or any use of reference to third party on the content of this document.

spiire
spiire.com.au
ABN 55 050 021 635

Harlow
TARNETT
Designed
R. WEINBER
Checked
M. READMAN
Date
04-07-2022

**HARLOW ESTATE
STAGE 2
ROAD & DRAINAGE FACE PLAN**
SIG GROUP
WYNDHAM CITY COUNCIL
CONSTRUCTION 309438R02
Drg No
309438R02
Rev
0



COMPACTION ASSESSMENT

Job No 22779
 Report No 22779/R001
 Date Issued 28/02/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	HARLOW - STAGE 2	Date tested	22/02/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:00
---------	------------	-----------------	--------	-------	-------

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	1.78	1.75	1.72	1.73	1.77
Field moisture content	%	21.0	25.4	19.6	20.6	18.2

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	1.81	1.79	1.77	1.80	1.83
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	23.0	27.0	21.5	23.0	20.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.0% dry	2.0% dry	2.0% dry	1.0% dry
--	----------	----------	----------	----------	----------	----------

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	97.5	97.0	96.0	96.5	95.5
-----------------------------------	---	------	------	------	------	------	------

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 22779
 Report No 22779/R002
 Date Issued 01/03/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	HARLOW - STAGE 2	Date tested	23/02/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:00
----------------	-------------------	------------------------	--------	--------------------

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	1.78	1.85	1.85	1.84	1.84
Field moisture content	%	19.2	23.5	21.9	18.7	23.0

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	1.83	1.87	1.88	1.88	1.85
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	19.0	25.5	24.0	21.5	23.5

Moisture Variation From Optimum Moisture Content	0.0%	2.0% dry	2.0% dry	2.5% dry	0.0%	0.5% dry
--	------	----------	----------	----------	------	----------

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})	%	97.5	99.0	98.5	98.0	97.5	98.5
---	---	-------------	-------------	-------------	-------------	-------------	-------------

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 22779
 Report No 22779/R003
 Date Issued 01/03/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	HARLOW - STAGE 2	Date tested	24/02/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:00
---------	------------	-----------------	--------	-------------

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	1.83	1.83	1.85	1.84	1.90
Field moisture content	%	21.0	20.0	16.9	19.2	15.8

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	1.84	1.87	1.88	1.86	1.92
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	23.5	20.5	18.0	21.0	16.5

Moisture Variation From Optimum Moisture Content	2.5% dry	0.5% dry	1.0% dry	2.0% dry	0.5% dry	1.5% dry
--	----------	----------	----------	----------	----------	----------

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})	%	100.0	98.0	98.5	99.0	99.0	97.5
-----------------------------------	---	-------	------	------	------	------	------

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 22779
 Report No 22779/R004
 Date Issued 30/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	HARLOW - STAGE 2	Date tested	19/05/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:00
---------	------------	-----------------	--------	-------------

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	1.94	1.94	2.02	1.97	1.99
Field moisture content	%	22.3	22.9	21.7	22.3	23.1

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	1.98	1.96	2.05	2.02	2.04
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	24.5	25.5	24.0	25.0	25.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.0% dry	2.5% dry	2.0% dry	2.0% dry
--	----------	----------	----------	----------	----------	----------

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	97.5	97.0	99.0
-----------------------------------	---	------	------	------	------	------	------

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 22779
 Report No 22779/R005
 Date Issued 30/08/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	HARLOW - STAGE 2	Date tested	25/07/23
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	25	26	27	-	-	-
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	2.06	2.07	2.02	-	-
Field moisture content	%	19.2	17.8	18.9	-	-

Test procedure AS 1289.5.7.1

Test No	25	26	27	-	-	-
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	2.10	2.09	2.06	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	21.5	20.0	21.0	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	2.0% dry	-	-	-
--	----------	----------	----------	---	---	---

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	99.5	98.0	-	-
-----------------------------------	---	------	------	------	---	---

Material description

No 25 - 27 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 22779
 Report No 22779/R006
 Date Issued 29/08/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	HARLOW - STAGE 2	Date tested	26/07/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:30
---------	------------	-----------------	--------	-------	-------

Test procedure AS 1289.2.1.1 & 5.8.1

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/m ³	1.93	1.92	1.91	-	-
Field moisture content	%	19.2	16.2	19.3	-	-

Test procedure AS 1289.5.7.1

Test No	28	29	30	-	-	-
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	1.99	1.96	1.95	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	22.0	19.0	22.0	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	-	-	-
--	----------	----------	----------	---	---	---

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})	%	97.0	98.0	98.0	-	-
-----------------------------------	---	------	------	------	---	---

Material description

No 28 - 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 22779
 Report No 22779/R007
 Date Issued 29/08/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	HARLOW - STAGE 2	Date tested	28/07/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:30
---------	------------	-----------------	--------	-------------

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	1.96	2.00	1.99	-	-
Field moisture content	%	22.8	26.5	26.1	-	-

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	1.97	2.02	2.03	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	25.5	27.0	28.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	0.0%	2.5% dry	-	-	-
--	----------	------	----------	---	---	---

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})	%	99.5	99.0	98.0	-	-
-----------------------------------	---	------	------	------	---	---

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