



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

15th May 2023

Our Reference: 22692:NB1545

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
MARIGOLD – STAGE 11 (TARNEIT)**

Please find attached our Report No's 22692/R001 to 22692/R005 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 May 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).

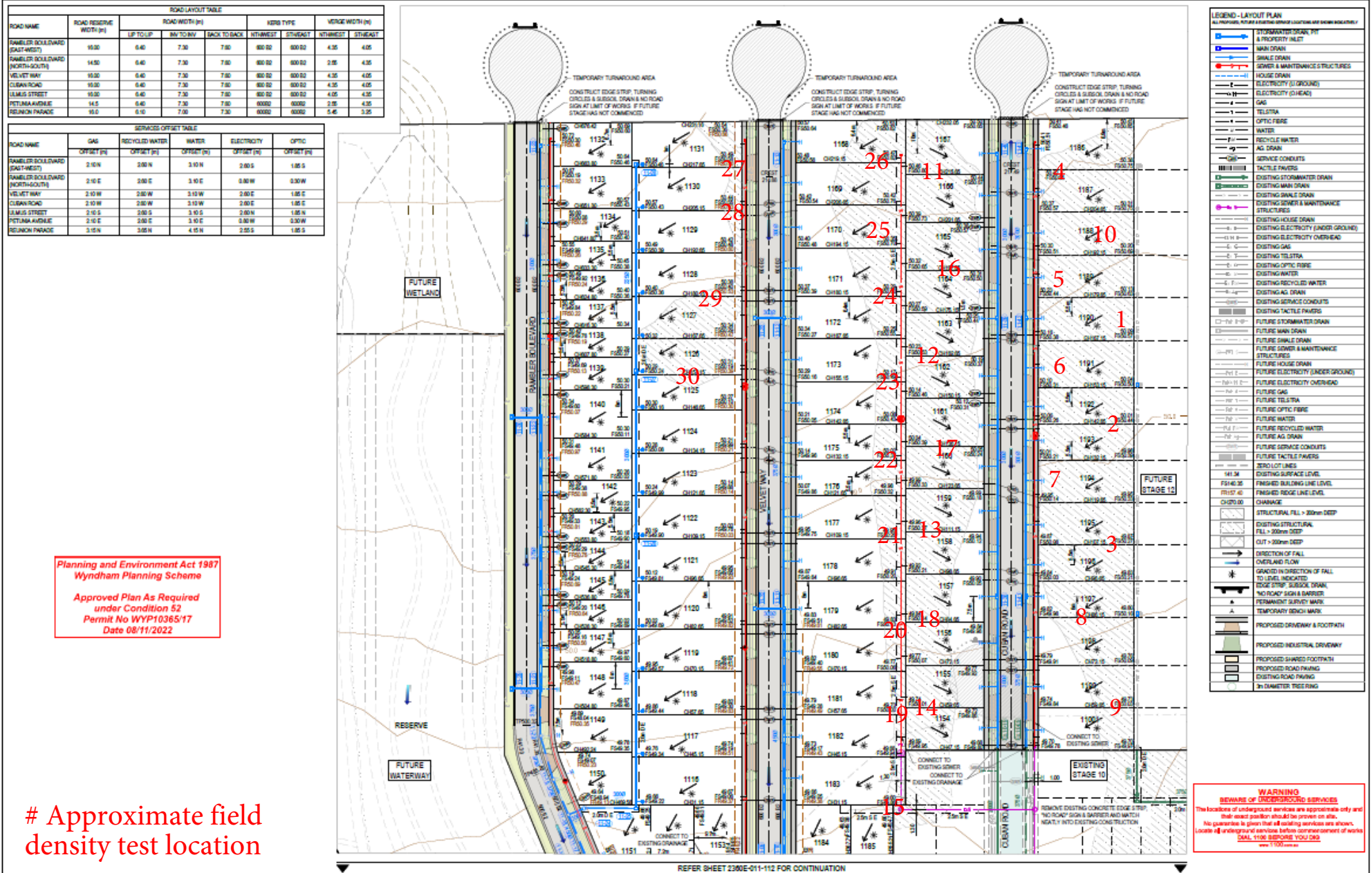
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

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

Nick Brock

FIGURE 1 (1 of 2)



Planning and Environment Act 1987
Wynham Planning Scheme

Approved Plan As Required
under Condition 52
Permit No WYP1036517
Date 08/11/2022

Approximate field density test location

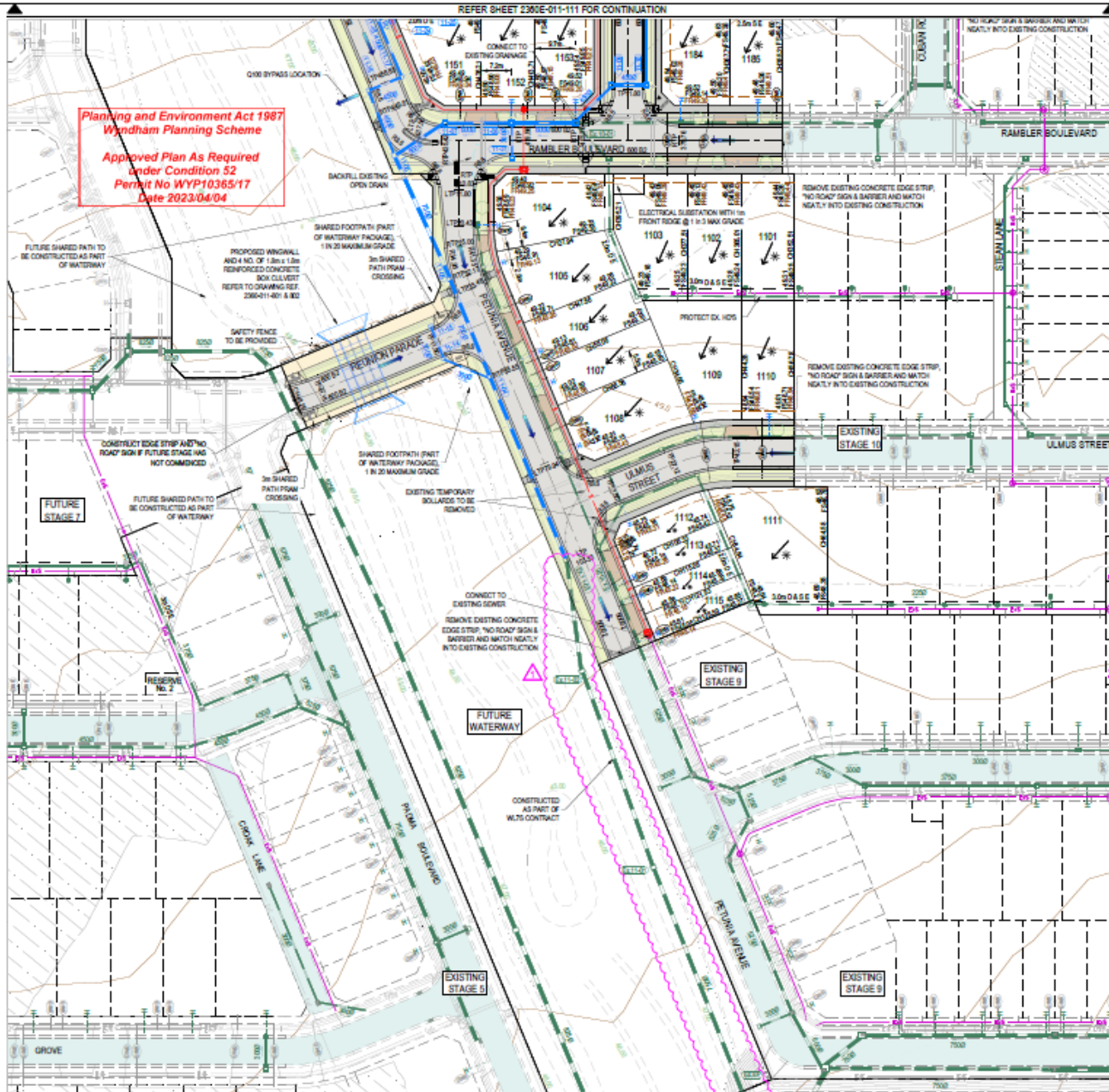
WARNING
UNDERGROUND SERVICES
The locations of underground services are approximate only and their exact position should be proven on site.
No guarantee is given that all existing services are shown.
Locate all underground services before commencement of works
DIAL 1100 BEFORE YOU DIG
www.1100.com.au

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DRAFTER	DESIGNER	CHECKER	APPROVER	PLAN OF SUB NO.					Marigold - Stage 11 Wynham City Council Road and Drainage Layout Plan - 1	SHEET NO. 359 F9	PROJECT DRAWING NO. 2360E-011-111	SHEET 02 of 30	REVISION 0
A	08.05.23	ISSUED TO COUNCIL FOR APPROVAL	D. NARANJANG	C. BARTOLAGA	C. SEXTON	M. BOWMEISTER	PS30088									
B	30.07.23	REVISED LOT LEVELS AND CONDUITS AMENDMENTS	D. NARANJANG	C. BARTOLAGA	C. SEXTON	M. BOWMEISTER	PERMIT REF NO. WYP1036517									

ISSUED FOR CONSTRUCTION

FIGURE 1 (2 of 2)

Planning and Environment Act 1987
Wyndham Planning Scheme
Approved Plan As Required
under Condition 52
Permit No WYP10355/17
Date 2023/04/04



LEGEND - LAYOUT PLAN
 All Proposed, Refer to existing drawing location and show modification

[Symbol]	STORMWATER DRAIN, FIT & TIGHTEN INLET
[Symbol]	MAN DRAIN
[Symbol]	SHALE DRAIN
[Symbol]	SEWER & MAINTENANCE STRUCTURES
[Symbol]	HOUSE DRAIN
[Symbol]	ELECTRICITY (E GROUND)
[Symbol]	ELECTRICITY (E HEAD)
[Symbol]	GAS
[Symbol]	TELSTRA
[Symbol]	OPTIC FIBRE
[Symbol]	WATER
[Symbol]	AG DRAIN
[Symbol]	RECYCLE WATER
[Symbol]	SERVICE CONDUITS
[Symbol]	TACTILE PAVERS
[Symbol]	EXISTING STORMWATER DRAIN
[Symbol]	EXISTING MAN DRAIN
[Symbol]	EXISTING SHALE DRAIN
[Symbol]	EXISTING SEWER & MAINTENANCE STRUCTURES
[Symbol]	EXISTING HOUSE DRAIN
[Symbol]	EXISTING ELECTRICITY (UNDER GROUND)
[Symbol]	EXISTING ELECTRICITY OVERHEAD
[Symbol]	EXISTING GAS
[Symbol]	EXISTING TELSTRA
[Symbol]	EXISTING OPTIC FIBRE
[Symbol]	EXISTING WATER
[Symbol]	EXISTING RECYCLED WATER
[Symbol]	EXISTING AG DRAIN
[Symbol]	EXISTING SERVICE CONDUITS
[Symbol]	EXISTING TACTILE PAVERS
[Symbol]	FUTURE STORMWATER DRAIN
[Symbol]	FUTURE MAN DRAIN
[Symbol]	FUTURE SHALE DRAIN
[Symbol]	FUTURE SEWER & MAINTENANCE STRUCTURES
[Symbol]	FUTURE HOUSE DRAIN
[Symbol]	FUTURE ELECTRICITY (UNDER GROUND)
[Symbol]	FUTURE ELECTRICITY OVERHEAD
[Symbol]	FUTURE GAS
[Symbol]	FUTURE TELSTRA
[Symbol]	FUTURE OPTIC FIBRE
[Symbol]	FUTURE WATER
[Symbol]	FUTURE RECYCLED WATER
[Symbol]	FUTURE AG DRAIN
[Symbol]	FUTURE SERVICE CONDUITS
[Symbol]	FUTURE TACTILE PAVERS
[Symbol]	ZERO LOT LINES
[Symbol]	EXISTING SURFACE LEVEL
[Symbol]	FINISHED BUILDING LINE LEVEL
[Symbol]	FINISHED EDGE LINE LEVEL
[Symbol]	CHANGING
[Symbol]	STRUCTURAL FILL > 300mm DEEP
[Symbol]	CLUT > 300mm DEEP
[Symbol]	DIRECTION OF FILL
[Symbol]	OVERLAND FLOW
[Symbol]	GRAVEL IN DIRECTION OF FILL TO LEVEL INDICATED
[Symbol]	EDGE OF SUBSIDIARY DRAIN NO ROAD SIGN & BARRIER
[Symbol]	PERMANENT SURVEY MARK
[Symbol]	TEMPORARY BENCH MARK
[Symbol]	PROPOSED DRIVEWAY & FOOTPATH
[Symbol]	PROPOSED INDUSTRIAL DRIVEWAY
[Symbol]	PROPOSED SHARED FOOTPATH
[Symbol]	PROPOSED ROAD PAVING
[Symbol]	EXISTING ROAD PAVING
[Symbol]	3m DIAMETER TREE PANG

Approximate field density test location

WARNING
BEWARE OF UNDERGROUND SERVICES
 The locations of underground services are approximate only and 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. www.1100.com.au

REV	DATE	AMENDMENT / REVISION DESCRIPTION	DRAWN	DESIGNED	CHECKED	APPROVED
A	06.05.24	ISSUED TO COUNCIL FOR APPROVAL	D. MARIANO	C. BARTOLAGA	C. CROFTON	M. BOURMESTER
B	26.07.22	CHANGES, CONTOURS AND LOT LEVELS AMENDMENTS	C. BARTOLAGA	C. BARTOLAGA	C. CROFTON	M. BOURMESTER
C	03.11.22	ISSUED FOR CONSTRUCTION	K. KING	C. BARTOLAGA	C. CROFTON	M. BOURMESTER
1	17.03.23	DRAINAGE CONSTRUCTED AS PART OF W/LS CONTRACT	C. PIRRE	C. CROFTON	C. CROFTON	M. BOURMESTER

PLAN OF SUB. NO. PS60888R
 PERMITS REF. NO. WYP10355/17
 ISSUED FOR CONSTRUCTION

SMC
 Member of the Starbuck Juring Group
 1000 Lakeside Drive, Level 20, 727 Collins St
 Melbourne, VIC 3008
 PH: 03 9514 1100

GROWLAND

Margold - Stage 11
 Wyndham City Council
 Road and Drainage
 Layout Plan - 2

W/LS REF: 359 F9	PROJECT DRAWING NO: 2360E-011-112	SHEET: 03 of 30	REVISION: 1
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COMPACTION ASSESSMENT

Job No 22692
 Report No 22692/R001
 Date Issued 01/03/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	MARIGOLD - STAGE 11	Date tested	20/02/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	13:00
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Test procedure AS 1289.2.1.1 & 5.8.1

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/m ³	2.01	1.96	1.98	-	-
Field moisture content	%	22.3	24.6	24.1	-	-

Test procedure AS 1289.5.7.1

Test No	1	2	3	-	-	-
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	1.98	2.02	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	24.0	26.5	26.0	-	-

Moisture Variation From Optimum Moisture Content	1.5% dry	2.0% dry	1.5% 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	99.5	98.0	-	-
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Material description

No 1 - 3 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 22692
 Report No 22692/R002
 Date Issued 11/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	MARIGOLD - STAGE 11	Date tested	03/05/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	4	5	6	7	8	9
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	1.86	1.89	1.88	1.83
Field moisture content	%	25.1	24.2	30.7	31.4	24.4

Test procedure AS 1289.5.7.1

Test No	4	5	6	7	8	9
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	1.86	1.93	1.91	1.87
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	27.5	26.0	30.5	34.0	24.5

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	0.0%	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})	%	100.0	100.0	98.0	98.5	98.5	99.5
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Material description

No 4 - 9 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 22692
 Report No 22692/R003
 Date Issued 11/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	MARIGOLD - STAGE 11	Date tested	04/05/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	13	14	15
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	1.89	1.87	1.83	1.80	1.83
Field moisture content	%	26.7	25.4	25.4	25.0	23.1

Test procedure AS 1289.5.7.1

Test No	10	11	12	13	14	15
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	1.92	1.88	1.87	1.87	1.85
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	29.0	26.0	27.5	25.0	25.5

Moisture Variation From Optimum Moisture Content	2.0% dry	0.5% dry	2.0% dry	0.0%	2.5% dry	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	99.5	98.5	96.5	98.5	99.0
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Material description

No 10 - 15 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 22692
 Report No 22692/R004
 Date Issued 11/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	MARIGOLD - STAGE 11	Date tested	05/05/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	16	17	18	-	-	-
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	1.86	1.87	1.91	-	-
Field moisture content	%	29.9	27.2	28.6	-	-

Test procedure AS 1289.5.7.1

Test No	16	17	18	-	-	-
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	1.91	1.94	1.90	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	32.0	29.5	31.0	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% 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})	%	97.0	96.5	100.5	-	-
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Material description

No 16 - 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 22692
 Report No 22692/R005
 Date Issued 15/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	MARIGOLD - STAGE 11	Date tested	10/05/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:00
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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	1.96	1.90	1.95	1.89	1.88	1.91
Field moisture content	%	30.0	26.9	25.4	27.2	30.1	30.0

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	2.01	1.92	2.02	1.91	1.95	1.94
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	32.5	27.0	27.0	30.0	30.0	32.5

Moisture Variation From Optimum Moisture Content	2.0% dry	0.0%	1.5% dry	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})	%	97.0	98.5	96.5	99.0	96.5	98.5
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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 22692
 Report No 22692/R006
 Date Issued 15/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	MARIGOLD - STAGE 11	Date tested	11/05/23
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:00
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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	1.91	1.87	1.93	1.92	1.87
Field moisture content	%	27.0	26.5	25.3	32.4	27.2

Test procedure AS 1289.5.7.1

Test No	25	26	27	28	29	30
Compactive effort	Standard					
Override 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	1.97	1.91	1.97	1.96	1.91
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	29.0	29.0	27.5	32.0	29.0

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.0% dry	0.5% wet	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})	%	97.0	97.5	98.0	98.0	98.0	98.5
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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