



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

25th March 2013

Our Reference: 12380:JHF675

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
ASTON ESTATE (STAGE 7) – CRAIGIEBURN**

Please find attached our Report Nos 12380/R001 to 12380/R007 that relate to the field density testing that was conducted within the filled allotments and backfilled dams at the above subdivision. The level 1 inspections and associated field density testing was performed in early to mid November 2012.

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 inspections and testing was performed by an experienced geotechnician 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 allotment and within the backfilled dams 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 allotment and within the backfilled dams 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).

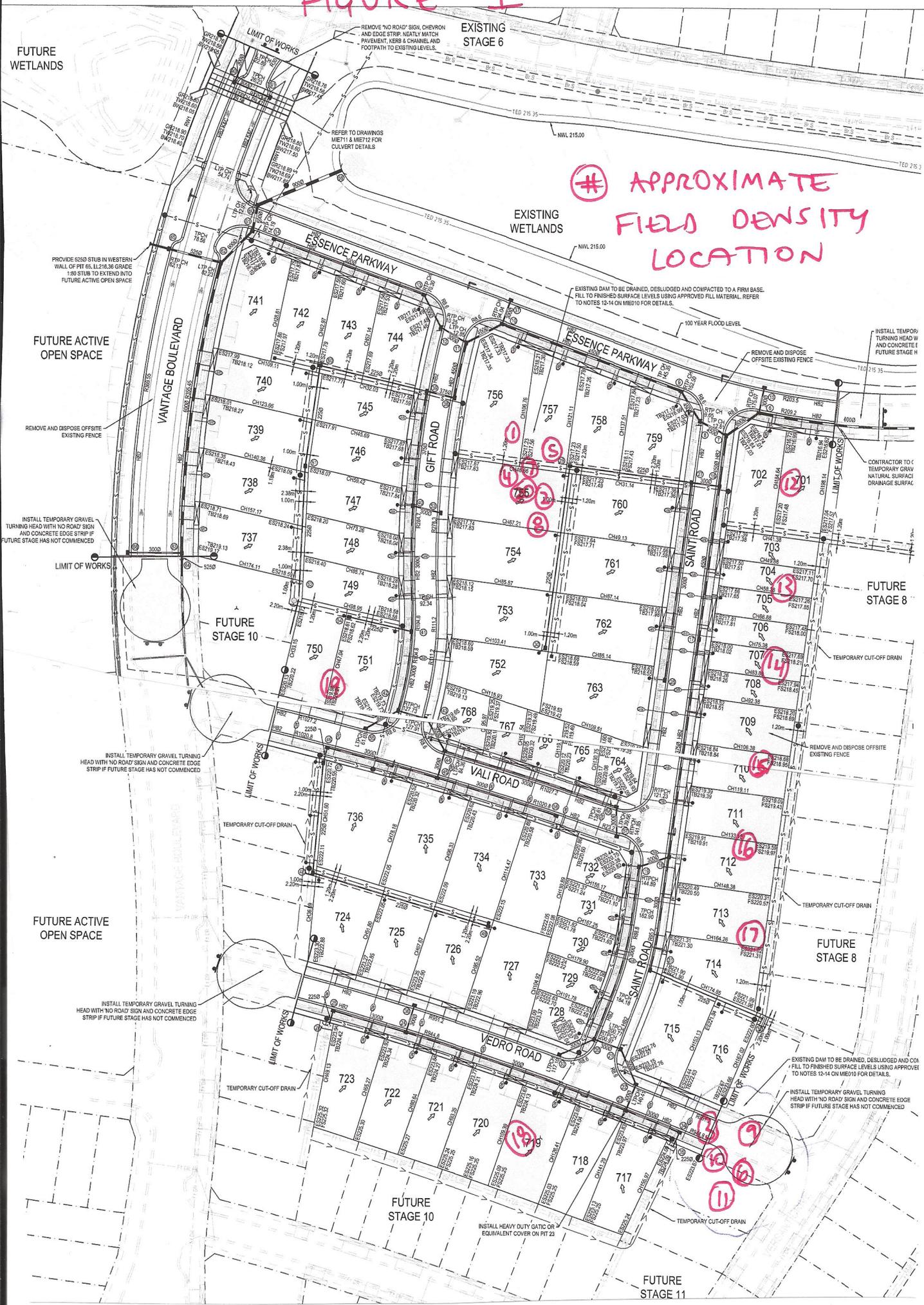
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in black ink, appearing to read 'Justin Fry', written in a cursive style.

Justin Fry

FIGURE 1



APPROXIMATE
FIELD DENSITY
LOCATION

FUTURE
WETLANDS

EXISTING
STAGE 6

EXISTING
WETLANDS

FUTURE ACTIVE
OPEN SPACE

FUTURE
STAGE 10

FUTURE
STAGE 8

FUTURE ACTIVE
OPEN SPACE

FUTURE
STAGE 8

FUTURE
STAGE 10

FUTURE
STAGE 11



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 12380
 Report No 12380/R001
 Date Issued 28/11/12
 Tested by TW
 Date tested 07/11/12
 Checked by JHF

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	TW
Project	ASTON - STAGE 7	Date tested	07/11/12
Location	CRAIGIEBURN	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:05
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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	2.05	-	-	-
Field moisture content %	23.9	21.0	22.6	-	-	-

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	2.02	2.03	2.03	-	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	21.5	19.5	21.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% wet	1.5% wet	1.5% wet	-	-	-
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Density Ratio (R_{HD})	%	99.5	96.5	101.0	-	-	-
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Material description

No 1 - 3 Clay Fill

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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 12380
 Report No 12380/R002
 Date Issued 28/11/12

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	TW
Project	ASTON - STAGE 7	Date tested	08/11/12
Location	CRAIGIEBURN	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	4	5	6	-	-	-
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	1.92	1.90	2.10	-	-
Field moisture content	%	16.7	14.0	20.2	-	-

Test procedure AS 1289.5.7.1

Test No	4	5	6	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-
Percent of oversize material	wet	0	0	6	-	-
Peak Converted Wet Density	t/m ³	1.95	1.95	2.05	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	2.07	-	-
Optimum Moisture Content	%	20.0	17.5	20.0	-	-

Moisture Variation From Optimum Moisture Content	3.0% dry	3.5% dry	0.0%	-	-	-
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Density Ratio (R _{HD})	%	98.5	97.5	101.5	-	-
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Material description

No 4 - 6 Clay Fill

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COMPACTION ASSESSMENT

Job No 12380
 Report No 12380/R003
 Date Issued 28/11/12

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	TW
Project	ASTON - STAGE 7	Date tested	08/11/12
Location	CRAIGIEBURN	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:33
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	-	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL	-	-	-	-	-	-
Measurement depth mm	175	175	-	-	-	-
Field wet density t/m ³	1.90	1.97	-	-	-	-
Field moisture content %	15.9	19.1	-	-	-	-

Test procedure AS 1289.5.7.1

Test No	7	8	-	-	-	-
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	1.98	2.05	-	-	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	18.0	18.5	-	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	0.5% wet	-	-	-	-
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Density Ratio (R _{HD})	%	95.5	95.5	-	-	-	-
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Material description

No 7 - 8 Clay Fill

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COMPACTION ASSESSMENT

Job No 12380
 Report No 12380/R004
 Date Issued 28/11/12
 Tested by TW
 Date tested 09/11/12
 Checked by JHF

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)
Project	ASTON - STAGE 7
Location	CRAIGIEBURN

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	08:36
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	9	10	11	-	-	-
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	2.08	2.08	1.97	-	-	-
Field moisture content %	20.7	18.1	17.0	-	-	-

Test procedure AS 1289.5.7.1

Test No	9	10	11	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve mm	19.0	19.0	19.0	-	-	-
Percent of oversize material wet	5	0	0	-	-	-
Peak Converted Wet Density t/m ³	2.09	2.10	2.04	-	-	-
Adjusted Peak Converted Wet Density t/m ³	2.11	-	-	-	-	-
Optimum Moisture Content %	19.0	18.0	18.5	-	-	-

Moisture Variation From Optimum Moisture Content	1.5% wet	0.0%	1.5% dry	-	-	-
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Density Ratio (R _{HD})	%	99.0	99.0	96.5	-	-	-
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Material description

No 9 - 11 Clay Fill

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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 12380
 Report No 12380/R005
 Date Issued 28/11/12
 Tested by TW
 Date tested 09/11/12
 Checked by JHF

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	TW
Project	ASTON - STAGE 7	Date tested	09/11/12
Location	CRAIGIEBURN	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:33
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	12	13	14	-	-	-
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/m³	2.06	2.06	2.08	-	-	-
Field moisture content %	26.1	21.5	22.4	-	-	-

Test procedure AS 1289.5.7.1

Test No	12	13	14	-	-	-
Compactive effort	Standard					
Override rock retained on sieve mm	19.0	19.0	19.0	-	-	-
Percent of oversize material wet	0	0	3	-	-	-
Peak Converted Wet Density t/m³	1.99	2.06	2.05	-	-	-
Adjusted Peak Converted Wet Density t/m³	-	-	2.06	-	-	-
Optimum Moisture Content %	24.0	16.5	21.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% wet	5.0% wet	1.5% wet	-	-	-
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Density Ratio (R_{HD}) %	103.5	100.0	101.0	-	-	-
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Material description

No 12 - 14 Clay Fill

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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 12380
Report No 12380/R006
Date Issued 28/11/12

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	TW
Project	ASTON - STAGE 7	Date tested	12/11/12
Location	CRAIGIEBURN	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:33
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	15	16	17	-	-	-
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 2.07	1.93	2.05	-	-	-
Field moisture content	% 24.6	14.5	21.0	-	-	-

Test procedure AS 1289.5.7.1

Test No	15	16	17	-	-	-
Compactive effort	Standard					
Override 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 2.07	1.99	2.12	-	-	-
Adjusted Peak Converted Wet Density	t/m ³ -	-	-	-	-	-
Optimum Moisture Content	% 20.5	17.5	19.0	-	-	-

Moisture Variation From Optimum Moisture Content	4.0% wet	3.0% dry	2.0% wet	-	-	-
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Density Ratio (R _{HD})	% 100.0	97.5	97.0	-	-	-
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Material description

No 15 - 17 Clay Fill

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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 12380
 Report No 12380/R007
 Date Issued 28/11/12
 Tested by TW
 Date tested 13/11/12
 Checked by JHF

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	TW
Project	ASTON - STAGE 7	Date tested	13/11/12
Location	CRAIGIEBURN	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	18	19	20	-	-	-
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/m³	1.99	1.99	2.06	-	-	-
Field moisture content %	20.6	19.1	11.4	-	-	-

Test procedure AS 1289.5.7.1

Test No	18	19	20	-	-	-
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/m³	2.07	2.07	2.06	-	-	-
Adjusted Peak Converted Wet Density t/m³	-	-	-	-	-	-
Optimum Moisture Content %	19.5	18.0	12.0	-	-	-

Moisture Variation From Optimum Moisture Content	1.0% wet	1.0% wet	0.5% dry	-	-	-
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Density Ratio (R _{HD}) %	96.0	96.5	100.5	-	-	-
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Material description

No 18 - 20 Clay Fill						
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