



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

29<sup>th</sup> June 2012

Our Reference: 11421:JHF614

Peet Cranbourne Central Sydicate Limited  
Level 3, 492 St Kilda Road  
MELBOURNE VIC 3004

Dear Sirs,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
LIVINGSTON ESTATE (STAGE 2) – CRANBOURNE EAST**

Please find attached our Report Nos 11421AA to 11421AC that 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 mid to late November 2011.

The inspection 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 supervision 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 allotments by Georgiou during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

When interpreting the requirements of AS 2870 - Residential Slabs and Footings (2011), we are of the view that the bulk fill materials that have been placed across the filled allotments by Georgiou 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'.

Justin Fry

# FIGURE 1



- INSTRUCTION TO BE REMOVED
- UN
- DRINKING WATER
- SEWER
- R
- PT
- INLET
- 75 INLET
- ITEMS TO BE REMOVED
- CONNECTION
- INVERT AND
- FLOW
- SURVEY MARK (SBM)
- BENCH MARK (BM)
- SPACE LEVEL
- SPACE LEVEL
- OF WATER LEVEL
- R
- PT NO.
- RETAINING WALL
- TREATMENT
- D
- SURFACE CONTOUR
- SPACE CONTOUR
- EDGE STRIP
- UR
- INLET & BARRIER
- R
- S
- ELECTRICITY
- S
- SEWER
- SEWER
- ELSTRA
- WATER
- ION-DRINKING WATER
- OPTIC FIBRE
- S
- SEWER
- SEWER
- SEWER
- NON-DRINKING WATER
- OPTIC FIBRE
- SE
- TO BE REMOVED

**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITIONS SHOULD BE PROVEN ON SITE. NO GUARANTEE GIVEN THAT ALL

**WARNING**  
UNDERGROUND SERVICES  
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND THEIR EXACT POSITIONS SHOULD BE PROVEN ON SITE. NO GUARANTEE GIVEN THAT ALL

**APPROXIMATE FIELD DENSITY LOCATION**





# COMPACTION ASSESSMENT

Job No 11421  
 Report No 11421AA  
 Date Issued 28/11/11

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	PEET CRANBOURNE CENTRAL SYNDICATE LIMITED (MELBOURNE)	Tested by	KC
Project	CRANBOURNE CENTRAL - STAGE 2	Date tested	16/11/11
Location	CRANBOURNE EAST	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	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 <sup>3</sup>	1.69	1.71	1.73	-	-	-
Field moisture content %	49.1	46.9	45.2	-	-	-

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 <sup>3</sup>	1.78	1.80	1.80	-	-	-
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content %	37.0	35.0	33.5	-	-	-

Moisture Variation From Optimum Moisture Content	15.5% wet	14.5% wet	14.0% wet	-	-	-
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Density Ratio ( R <sub>HD</sub> )	%	95.0	95.0	96.0	-	-	-
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Material description

Test No 1 - 3 Clay Fill
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A581HILF V1.10 OCT 09



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Accreditation No 9909

Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

Job No 11421  
 Report No 11421AB  
 Date Issued 12/12/11

### CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	PEET CRANBOURNE CENTRAL SYNDICATE LIMITED (MELBOURNE)	Tested by	KC
Project	CRANBOURNE CENTRAL - STAGE 2	Date tested	17/11/11
Location	CRANBOURNE EAST	Checked by	JHF

<b>Feature</b>	<b>EARTHWORKS</b>	Layer thickness	200 mm	Time: 12:28
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	4	5	-	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL	-	-	-	-	-	-
Measurement depth <span style="float: right;">mm</span>	175	175	-	-	-	-
Field wet density <span style="float: right;">t/m<sup>3</sup></span>	1.80	1.73	-	-	-	-
Field moisture content <span style="float: right;">%</span>	36.0	45.5	-	-	-	-

Test procedure AS 1289.5.7.1

Test No	4	5	-	-	-	-
Compactive effort	Standard					
Override rock retained on sieve <span style="float: right;">mm</span>	19.0	19.0	-	-	-	-
Percent of oversize material <span style="float: right;">wet</span>	0	0	-	-	-	-
Peak Converted Wet Density <span style="float: right;">t/m<sup>3</sup></span>	1.89	1.83	-	-	-	-
Adjusted Peak Converted Wet Density <span style="float: right;">t/m<sup>3</sup></span>	-	-	-	-	-	-
Optimum Moisture Content <span style="float: right;">%</span>	29.5	35.5	-	-	-	-

Moisture Variation From Optimum Moisture Content	6.5% wet	10.5% wet	-	-	-	-
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>95.0</b>	<b>95.0</b>	-	-	-
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Material description

Test No 4 - 5 Clay Fill
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Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

Job No 11421  
 Report No 11421AC  
 Date Issued 15/12/11

### CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	PEET CRANBOURNE CENTRAL SYNDICATE LIMITED (MELBOURNE)	Tested by	KC
Project	CRANBOURNE CENTRAL - STAGE 2	Date tested	22/11/11
Location	CRANBOURNE EAST	Checked by	JHF

<b>Feature</b>	<b>EARTHWORKS</b>	Layer thickness	200 mm	Time: 14:08
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	6	7	8	9	10	-
Location	REFER TO FIGURE 1					
Approximate depth below FSL	-	-	-	-	-	-
Measurement depth <i>mm</i>	175	175	175	175	175	-
Field wet density <i>t/m<sup>3</sup></i>	1.79	1.76	1.72	1.75	1.75	-
Field moisture content %	56.9	49.8	49.8	46.9	45.6	-

Test procedure AS 1289.5.7.1

Test No	6	7	8	9	10	-
Compactive effort	Standard					
Override rock retained on sieve <i>mm</i>	19.0	19.0	19.0	19.0	19.0	-
Percent of oversize material <i>wet</i>	0	0	0	0	0	-
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.88	1.85	1.80	1.84	1.78	-
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	-	-	-	-	-
Optimum Moisture Content %	47.0	37.5	37.5	34.5	34.5	-

Moisture Variation From Optimum Moisture Content	9.0% wet	13.5% wet	15.0% wet	14.0% wet	14.0% wet	-
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Density Ratio ( $R_{HD}$ ) %	95.5	95.0	96.0	95.0	98.5	-
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Material description

Test No 6 - 10 Clay Fill
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