



16 Kane Road, Wodonga - Postal Address P.O Box 876, Wodonga 3689
Telephone 0260 243960 Email: jesse.hill@awgeo.com.au

12 December 2019
Ref: 19CT1519

Pioneer One Pty Ltd
C/o Nordcon Land
PO Box 107
Wodonga, Vic, 3689

Re: Heritage Park, Stage 1, Jindera, NSW.

Attention: Mr Eric Pietila

Civiltest Albury/Wodonga carried out site supervision and density testing at the above mentioned location in October and November 2019 during the civil construction works. The intention of Civiltest Albury/Wodonga through this process was to independently oversee the stripping, removal and replacement of materials to form a consistent and solid working platform for the future residential development.



Civiltest Albury/Wodonga was assigned to supervise the excavation and filling process. During the excavation process if any areas of concern (soft spots) were found they were addressed by the civil contractors in consultation with Civiltest. Any material that was of concern has been removed from the site and replaced by suitable fill material. Proof rolls were conducted as necessary onsite to confirm base suitability.

Density testing of the fill material was carried out onsite. The fill material was compacted in layers to achieve optimum results.

Testing was carried out as required by AS3798-2007. Density testing was performed onsite with the results of any testing included in this certification.

The equipment used for the earthworks onsite to achieve the specified compaction included an excavator, grader, scraper, roller and watercart. The equipment was used to move, place and compact the fill materials as required. After the review of field monitoring records and analysis of field density results it has been established that the required standards on this site have been achieved through these works.

The density results have exceeded the required 95% of Standard Compaction (AS1289.5.7.1). The fill material placed during these works has achieved a mean density ratio of 99.0% and a mean moisture variation of 1.6% dry of optimum.

The summary of the field density test results is shown in the below table:

Report No.	Test No.	Easting	Northing	DBFSL mm	Density Ratio (%)	Moisture Variation (%)	Lot
19CT1383	1	489615	6020095	300	98.0	0.0	102
19CT1383	2	489616	6020077	300	98.0	0.5	103
19CT1384	3	489623	6020027	FSL	96.0	0.0	105
19CT1384	4	489624	6020047	FSL	99.0	0.5	104
19CT1384	5	489614	6020105	FSL	101.0	0.0	102
19CT1394	6	489629	6020137	500	100.5	2.5	101
19CT1394	7	489639	6020077	300	101.5	2.5	103
19CT1394	8	489634	6020037	FSL	98.5	1.5	105
19CT1394	9	489633	6020049	200	98.0	4.0	104
19CT1394	10	489636	6020082	200	99.0	0.5	103
19CT1397	11	489634	6020132	400	99.5	0.0	101
19CT1397	12	489639	6020107	200	97.5	4.0	102
19CT1397	13	489641	6020084	FSL	97.5	3.0	103
19CT1397	14	489630	6020140	200	102.5	4.0	101
19CT1448	15	489666	6020129	FSL	95.0	2.5	101
19CT1448	16	489661	6020114	FSL	99.0	3.0	102
19CT1448	17	489662	6020095	FSL	103.5	0.5	103
19CT1519	18	489568	6020129	200	101.0	0.5	122
19CT1519	19	489567	6020119	FSL	100.0	0.5	122
19CT1519	20	489565	6020085	FSL	95.5	2.5	121
Mean Density Ratio (%)					99.0	1.6	
Mean Moisture Variation (%)							
*** moisture variation (%) 1 = 1% DRY -1 = 1 % WET							

As the appointed Geotechnical testing authority on this project, it is stated that the above mentioned site supervision and testing has exceeded the required standards to achieve Level 1 Certification, defined in AS3798-2007, Guidelines on Earthworks for Commercial and Residential Developments.

The fill materials that have been placed as fill across the site is therefore certified as level 1 controlled fill in accordance with the requirements of AS2870-2011.

For further information or clarification on issues raised in the above mentioned report, please contact the undersigned.

Yours Faithfully

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

Peter Vella

Civil Test Albury Wodonga

SOILS ENGINEERING LABORATORY

16 Kane Road Wodonga-Postal Address P.O Box 876 Wodonga 3689 Telephone 0260243960

FIELD DENSITY TEST RESULTS

CLIENT: Pioneer One Pty Ltd	REPORT NO: 19CT1383	
	DATE TESTED: 22.10.2019	TIME: 8.30
JOB CONTRACTOR: Nordcon Pty Ltd	MATERIAL DESCRIPTION: Sandy Clay Onsite	
JOB LOCATION: Heritage Park Stage 1 Jindera		
LOCATION/CHAINAGE BOUNDS:	LAYER TESTED: Fill	
	DEPTH BELOW FSL: See Below	
	DEPTH TESTED: 150mm	

TEST PROCEDURES IN ACCORDANCE WITH AS 1289:

Sections .1.1, .5.1.1, .5.4.1, .5.7.1, .5.8.1

SITE NO	1	2				
AREA TESTED	Lot 102	Lot 103				
EASTING	489615	489616				
NORTHING	6020095	6020077				
DBFSL mm	300	300				
OVERSIZE SIEVE mm	19	19				
OVERSIZE(WET/DRY)%	0/0	0/0				
COMPACTION METHOD	STD	STD				
FIELD WET DENSITY t/m ³	1.94	1.94				
FIELD DRY DENSITY t/m ³						
MOISTURE CONTENT %						
LAB PCWD t/m ³	1.98	1.97				
ADJUSTED PCWD t/m ³						
LAB MDD t/m ³						
ADJUSTED MDD t/m ³						
OMC %						
ADJUSTED OMC %						
MOISTURE VARIATION %	0.0	0.5 DRY				
MOISTURE RATIO %						
DENSITY RATIO %	98.0	98.0				

ABBREVIATIONS: PCWD = Peak Converted Wet Density MDD = Maximum Dry Density OMC = Optimum Moisture Content

DENSITY METHOD: **Nuclear Transmission**
SAMPLING: **AS1289.1.2.1 Clause 6.4b**

MEAN DENSITY RATIO:
STANDARD DEVIATION:
CHARACTERISTIC DENSITY RATIO:

The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

MANAGER: **P. VELLA**

DATE: 28.10.2019

Form CT148-V1.10-Mar 16-PV-Page 1 of 1



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FIELD DENSITY TEST RESULTS

CLIENT: Pioneer One Pty Ltd	REPORT NO: 19CT1384	
	DATE TESTED: 23.10.2019	TIME: 8.00
JOB CONTRACTOR: Nordcon Pty Ltd	MATERIAL DESCRIPTION: Sandy Clay Onsite	
JOB LOCATION: Heritage Park Stage 1 Jindera		
LOCATION/CHAINAGE BOUNDS:	LAYER TESTED: Fill	
	DEPTH BELOW FSL: See Below	
	DEPTH TESTED: 150mm	

TEST PROCEDURES IN ACCORDANCE WITH AS 1289:

Sections .1.1, .5.1.1, .5.4.1, .5.7.1, .5.8.1

SITE NO	3	4	5			
AREA TESTED	Lot 105	Lot 104	Lot 102			
EASTING	489623	489624	489614			
NORTHING	6020027	6020047	6020105			
DBFSL mm	Final Layer	Final Layer	Final Layer			
OVERSIZE SIEVE mm	19	19	19			
OVERSIZE(WET/DRY)%	0/0	0/0	0/0			
COMPACTION METHOD	STD	STD	STD			
FIELD WET DENSITY t/m ³	1.95	1.93	2.02			
FIELD DRY DENSITY t/m ³						
MOISTURE CONTENT %						
LAB PCWD t/m ³	2.02	1.95	2.00			
ADJUSTED PCWD t/m ³						
LAB MDD t/m ³						
ADJUSTED MDD t/m ³						
OMC %						
ADJUSTED OMC %						
MOISTURE VARIATION %	0.0	0.5 DRY	0.0			
MOISTURE RATIO %						
DENSITY RATIO %	96.0	99.0	101.0			

ABBREVIATIONS: PCWD = Peak Converted Wet Density MDD = Maximum Dry Density OMC = Optimum Moisture Content

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Form CT148-V1.10-Mar 16-PV-Page 1 of 1



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FIELD DENSITY TEST RESULTS

CLIENT: Pioneer One Pty Ltd	REPORT NO: 19CT1394	
	DATE TESTED: 24.10.2019	TIME: 8.30
JOB CONTRACTOR: Nordcon Pty Ltd	MATERIAL DESCRIPTION: Sandy Clay Site Cut	
JOB LOCATION: Heritage Park Stage 1 Jindera		
LOCATION/CHAINAGE BOUNDS:	LAYER TESTED: Fill	
	DEPTH BELOW FSL: See Below	
	DEPTH TESTED: 150mm	

TEST PROCEDURES IN ACCORDANCE WITH AS 1289:

Sections .1.1, .5.1.1, .5.4.1, .5.7.1, .5.8.1

SITE NO	6	7	8	9	10	
AREA TESTED	Lot 101	Lot 103	Lot 105	Lot 104	Lot 103	
EASTING	489629	489639	489634	489633	489636	
NORTHING	6020137	6020077	6020037	6020049	6020082	
DBFSL mm	500	300	Final Layer	200	200	
OVERSIZE SIEVE mm	19	19	19	19	19	
OVERSIZE(WET/DRY)%	0/0	0/0	0/0	0/0	0/0	
COMPACTION METHOD	STD	STD	STD	STD	STD	
FIELD WET DENSITY t/m ³	1.99	2.04	1.99	2.00	1.95	
FIELD DRY DENSITY t/m ³						
MOISTURE CONTENT %						
LAB PCWD t/m ³	1.98	2.01	2.02	2.04	1.97	
ADJUSTED PCWD t/m ³						
LAB MDD t/m ³						
ADJUSTED MDD t/m ³						
OMC %						
ADJUSTED OMC %						
MOISTURE VARIATION %	2.5 DRY	2.5 DRY	1.5 DRY	4.0 DRY	0.5 DRY	
MOISTURE RATIO %						
DENSITY RATIO %	100.5	101.5	98.5	98.0	99.0	

ABBREVIATIONS: PCWD = Peak Converted Wet Density MDD = Maximum Dry Density OMC = Optimum Moisture Content

DENSITY METHOD: **Nuclear Transmission**
SAMPLING: **AS1289.1.2.1 Clause 6.4b**

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Form CT148-V1.10-Mar 16-PV-Page 1 of 1



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FIELD DENSITY TEST RESULTS

CLIENT: Pioneer One Pty Ltd	REPORT NO: 19CT1397	
	DATE TESTED: 25.10.2019	TIME: 8.30
JOB CONTRACTOR: Nordcon Pty Ltd	MATERIAL DESCRIPTION: Sandy Clay Onsite	
JOB LOCATION: Heritage Park Stage 1 Jindera		
LOCATION/CHAINAGE BOUNDS:	LAYER TESTED: Fill	
	DEPTH BELOW FSL: See Below	
	DEPTH TESTED: 150mm	

TEST PROCEDURES IN ACCORDANCE WITH AS 1289:

Sections .1.1, .5.1.1, .5.4.1, .5.7.1, .5.8.1

SITE NO	11	12	13	14		
AREA TESTED	Lot 101	Lot 102	Lot 103	Lot 101		
EASTING	489634	489639	489641	489630		
NORTHING	6020132	6020107	6020084	6020140		
DBFSL mm	400	200	Final Layer	200		
OVERSIZE SIEVE mm	19	19	19	19		
OVERSIZE(WET/DRY)%	0/0	0/0	0/0	0/0		
COMPACTION METHOD	STD	STD	STD	STD		
FIELD WET DENSITY t/m ³	1.98	1.98	2.00	2.01		
FIELD DRY DENSITY t/m ³						
MOISTURE CONTENT %						
LAB PCWD t/m ³	1.99	2.03	2.05	1.96		
ADJUSTED PCWD t/m ³						
LAB MDD t/m ³						
ADJUSTED MDD t/m ³						
OMC %						
ADJUSTED OMC %						
MOISTURE VARIATION %	0.0	4.0 DRY	3.0 DRY	4.0 DRY		
MOISTURE RATIO %						
DENSITY RATIO %	99.5	97.5	97.5	102.5		

ABBREVIATIONS: PCWD = Peak Converted Wet Density MDD = Maximum Dry Density OMC = Optimum Moisture Content

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Form CT148-V1.10-Mar 16-PV-Page 1 of 1



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FIELD DENSITY TEST RESULTS

CLIENT: Pioneer One Pty Ltd	REPORT NO: 19CT1448	
	DATE TESTED: 06.11.2019	TIME: 10.45
JOB CONTRACTOR: Nordcon Pty Ltd	MATERIAL DESCRIPTION: Sandy Clay Onsite	
JOB LOCATION: Heritage Park Stage 1 Jindera		
LOCATION/CHAINAGE BOUNDS:	LAYER TESTED: Fill	
	DEPTH BELOW FSL: See Below	
	DEPTH TESTED: 150mm	

TEST PROCEDURES IN ACCORDANCE WITH AS 1289:

Sections .1.1, .5.1.1, .5.4.1, .5.7.1, .5.8.1

SITE NO	15	16	17			
AREA TESTED	Lot 101	Lot 102	Lot 103			
EASTING	489666	489661	489662			
NORTHING	6020129	6020114	6020095			
DBFSL mm	Final Layer	Final Layer	Final Layer			
OVERSIZE SIEVE mm	19	19	19			
OVERSIZE(WET/DRY)%	0/0	0/0	0/0			
COMPACTION METHOD	STD	STD	STD			
FIELD WET DENSITY t/m ³	1.84	1.96	2.09			
FIELD DRY DENSITY t/m ³						
MOISTURE CONTENT %						
LAB PCWD t/m ³	1.93	1.98	2.03			
ADJUSTED PCWD t/m ³						
LAB MDD t/m ³						
ADJUSTED MDD t/m ³						
OMC %						
ADJUSTED OMC %						
MOISTURE VARIATION %	2.5 DRY	3.0 DRY	0.5 DRY			
MOISTURE RATIO %						
DENSITY RATIO %	95.0	99.0	103.5			

ABBREVIATIONS: PCWD = Peak Converted Wet Density MDD = Maximum Dry Density OMC = Optimum Moisture Content

DENSITY METHOD: **Nuclear Transmission**
SAMPLING: **AS1289.1.2.1 Clause 6.4b**

MEAN DENSITY RATIO:
STANDARD DEVIATION:
CHARACTERISTIC DENSITY RATIO:

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MANAGER: **P. VELLA**

DATE: 12.11.2019

Form CT148-V1.10-Mar 16-PV-Page 1 of 1



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FIELD DENSITY TEST RESULTS

CLIENT: Pioneer One Pty Ltd	REPORT NO: 19CT1519	
	DATE TESTED: 20.11.2019	TIME: 10.00
JOB CONTRACTOR: Nordcon Pty Ltd	MATERIAL DESCRIPTION: Sandy Clay Onsite	
JOB LOCATION: Heritage Park Stage 1 Jindera		
LOCATION/CHAINAGE BOUNDS:	LAYER TESTED: Fill	
	DEPTH BELOW FSL: See Below	
	DEPTH TESTED: 150mm	

TEST PROCEDURES IN ACCORDANCE WITH AS 1289:

Sections .1.1, .5.1.1, .5.4.1, .5.7.1, .5.8.1

SITE NO	18	19	20			
AREA TESTED	Lot 122	Lot 122	Lot 121			
EASTING	489568	489567	489565			
NORTHING	6020129	6020119	6020085			
DBFSL mm	200	Final Layer	Final Layer			
OVERSIZE SIEVE mm	19	19	19			
OVERSIZE(WET/DRY)%	0/0	0/0	0/0			
COMPACTION METHOD	STD	STD	STD			
FIELD WET DENSITY t/m ³	2.02	1.98	1.85			
FIELD DRY DENSITY t/m ³						
MOISTURE CONTENT %						
LAB PCWD t/m ³	2.00	1.98	1.94			
ADJUSTED PCWD t/m ³						
LAB MDD t/m ³						
ADJUSTED MDD t/m ³						
OMC %						
ADJUSTED OMC %						
MOISTURE VARIATION %	0.5 DRY	0.5 DRY	2.5 DRY			
MOISTURE RATIO %						
DENSITY RATIO %	101.0	100.0	95.5			

ABBREVIATIONS: PCWD = Peak Converted Wet Density MDD = Maximum Dry Density OMC = Optimum Moisture Content

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MANAGER: **P. VELLA**

DATE: 21.11.2019

Form CT148-V1.10-Mar 16-PV-Page 1 of 1

