Australian Geotechnical Testing

Level One Inspection and Testing

Project No: AGTEAGTE240209
Project: Drews Paddock Stage 2
Suburb: Invermay

Client: Wayne Horne Earth Moving

Date: 3rd July 2024

Geotechnical	Pavement	Environmental	Residential	Design
Slope Stability Assessment	Land Capability Assessments	Erosion and Sediment Control Plan
Retaining Walls	Level 1 Supervision	Earthworks Specification's	Percolation

Adelaide | Brisbane | Ballarat | Melbourne | Warrnambool

Contents

1 Introduction

Australian Geotechnical Testing (AGT) has been engaged by Wayne Horne Earth Moving to provide Level 1 Geotechnical Supervision for the Drews Paddock Stage 2 project. The Estate is located in Invermay.

This Level 1 report presents the results of supervision activities, compaction and moisture control, material placement and laboratory testing for ground works undertaken for the project. This report covers construction activities carried out from **6th December 2023 to 22nd April 2024.**

2 Scope of Works

The scope of works involved the placement of on-site General Fill. Fill Material was placed in Level one fill areas, in accordance with ***AS 3798-2007***, ***Guidelines on earthworks for commercial and residential developments and project specifications***. The level of FILL to be placed is less than 5m as per AS3798 Section 1.1.

The fill material is required as per AS3798 and the project specification to achieve:

- **95% Standard Maximum Dry Density (Compaction)**

General fill material used for the construction was locally sourced and predominantly comprising of **Clay.**

3 Inspections / Supervision

Full-time Level 1 supervision and inspection was undertaken including the supervision and inspections regarding the stripping and removal as per AS3798 Section 3 shall have removed:

- Organic soils, such as topsoils, severely root affected subsoils and peat;
- Contaminated soils are part of the brief;
- Materials which undergo volume change or loss of strength when disturbed and exposed to moisture;
- Silts, or materials that have deleterious engineering properties of silt;
- Other materials with properties that are unsuitable for the forming of structural fill;
- Fill that contains wood, metal plastic, boulders or other deleterious material, in sufficient proportions to affect the required performance of the fill.
- The maximum particle size of any rocks or other lumps, within the layer, has not exceeded two-thirds ($^2/_3$) of the compacted layer thickness.

The lots inspected were essentially homogeneous in relation to material type and moisture condition, rolling response and compaction technique and which has been used for the assessment of relative compaction of an area of work (AS3798 Section 1.2.8).

Prior to placement any existing filled ground, for which the conditions of the placement are not adequately documented have not been assumed to have been of either standard compaction or of the composition adequate to support fill or any loads has been removed (AS3798 Section 2).

4 Testing

The project was classified as **Residential**, thereby requiring a minimum compaction result of ***95%*** density ratio Standard Compaction for the ***cohesive soils (***AS 1289 5.7.1 & 5.1.1) throughout the Level 1 Fill and in accordance with AS 3798-2007 – Table 5.2. The test was performed using a Nuclear Density Gauge for field density determination *AS 1289.5.8.1.*

As a minimum testing was undertaken either 3 tests per lot, 1 test per 2,500m^2 per layer, or 1 test per 500m^3 throughout the placement of fill as per AS3798 Table 8.1.

The material was site derived Sandy Clay fill & imported Gravelly Sandy Clay Fill**.** The material was placed in approximately 250mm loose layers, rolling effort with on-site Compactor (to seal of each layer of placed General Fill material) to a compacted 150mm layer that achieved 95% Standard Compaction which met Australian Standards specifications. This was considered the best method to achieve compaction using the plant and machinery available.

The NATA compaction reports verify the achievement of the minimum density requirement of 95% Standard Compaction throughout the full depth area, with each layer tested accordingly. All test results were provided to our client: Wayne Horne Earth Moving for inclusion within their internal quality system.

At the completion of the structural layers and material within 150mm of permanent subgrade level in cuttings, test rolling was undertaken, and the layers withstood test rolling without visible deformation or springing (AS 3798 Section 5.5).

The area covered by this Level 1 Supervision report is shown in the Site Plan (Refer to Appendix A). The results of the laboratory Testing are indicated in Appendix B.

5 Conclusion

On the completion of the earthworks and after analysing the materials used, it has been concluded that the filling procedure conducted by **our client Wayne Horne Earth Moving satisfied** the general requirements of AS 3798 regards to the placement of fill materials on a project under Level 1 Supervision and in accordance with the project specification as provided to AGT.

The fill meets the requirements for “structural fill for residential applications” in accordance with AS3798. The fill has been placed, compacted and tested in accordance with AS3798 and the fill meets the requirements for controlled fill in accordance with AS2870 (2011) “Residential Slabs and Footings”.

This report has been prepared for the benefit of our client with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement. No responsibility for this report will be taken by AGT if it is altered in any way, or not reproduced in full.

6 Applicability

The findings and conclusions contained in this Report are made based on site conditions that existed at the time this work was conducted. The conclusions presented in this report are relevant to the conditions of the site and the state of legislation currently enacted as at the date of this report.

Findings and conclusions are made assuming that the soil, groundwater, geological and chemical conditions detailed within this report are accurate and remain applicable to the site at the time of writing. The conclusions of this report may become invalid if filling or excavation occurs after the boreholes and test pits referred to in this report were drilled or excavated. No other warranties are made or intended.

AGT has used a degree of skill and care ordinarily exercised by reputable members of our profession practicing in the same or similar locality.

AGT does not make any representation or warranty that the conclusions in this report will be applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.
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Appendix A – Site Plan

LEGEND

- 206 FALL — LOT NUMBER & DIRECTION OF NATURAL SURFACE FALL
- DESIGN / EXISTING SURFACE CONTOURS
- PROPOSED STORMWATER DRAINAGE PIPE
- PROPOSED FUTURE STORMWATER DRAINAGE PIPE & PIT
- PROPOSED SEWER MAIN ALIGNMENT & PIT (IN ACCORDANCE WITH CHW DESIGN DOCUMENTS)
- PROPOSED TELSTRA
- PROPOSED POWER
- PROPOSED WATER MAIN
- PROPOSED GAS MAIN
- PROPOSED ELECTRICITY PIT
- EXISTING SEWER MAIN ALIGNMENT
- EXISTING OPTIC FIBRE
- EXISTING WATER MAIN
- EXISTING GAS MAIN
- EXISTING KERB & CHANNEL
- PROPOSED ROAD KERB & CHANNEL
- PROPOSED TITLE BOUNDARY
- PROPOSED EASEMENT
- FUTURE LOT BOUNDARY
- EXISTING LOT BOUNDARY
- PROPOSED ROAD CENTRELINE
- EXISTING DRAINAGE PIPE
- EXTENT OF FILL >300

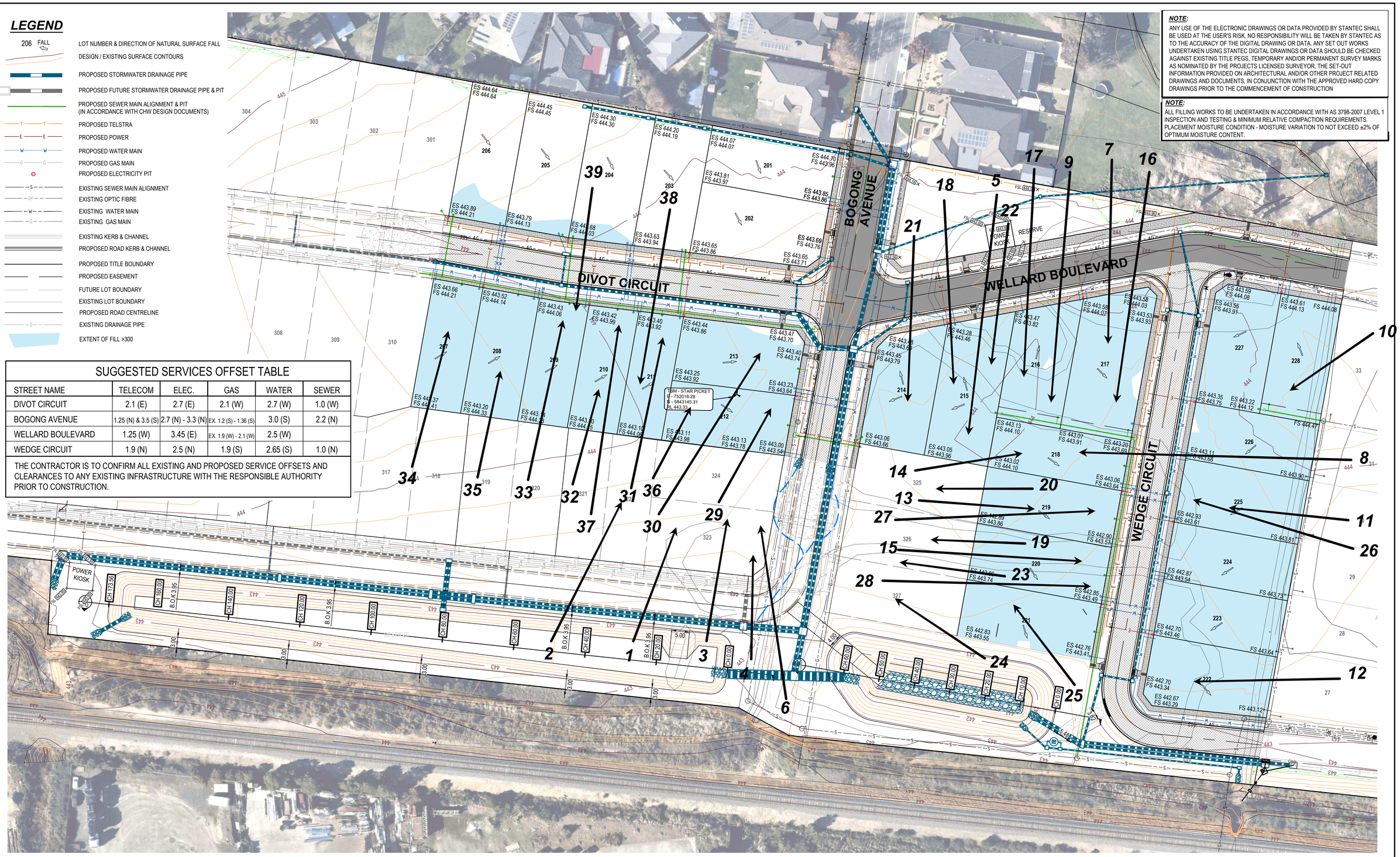
SUGGESTED SERVICES OFFSET TABLE

STREET NAME	TELECOM	ELEC.	GAS	WATER	SEWER
DIVOT CIRCUIT	2.1 (E)	2.7 (E)	2.1 (W)	2.7 (W)	1.0 (W)
BOGONG AVENUE	1.25 (N) & 3.5 (S)	2.7 (N) - 3.3 (N)	EX. 1.2 (S) - 1.36 (S)	3.0 (S)	2.2 (N)
WELLARD BOULEVARD	1.25 (W)	3.45 (E)	EX. 1.9 (W) - 2.1 (W)	2.5 (W)	
WEDGE CIRCUIT	1.9 (N)	2.5 (N)	1.9 (S)	2.65 (S)	1.0 (N)

THE CONTRACTOR IS TO CONFIRM ALL EXISTING AND PROPOSED SERVICE OFFSETS AND CLEARANCES TO ANY EXISTING INFRASTRUCTURE WITH THE RESPONSIBLE AUTHORITY PRIOR TO CONSTRUCTION.

NOTE:
ANY USE OF THE ELECTRONIC DRAWINGS OR DATA PROVIDED BY STANTEC SHALL BE USED AT THE USER'S RISK. NO RESPONSIBILITY WILL BE TAKEN BY STANTEC AS TO THE ACCURACY OF THE DIGITAL DRAWING OR DATA. ANY SET OUT WORKS UNDERTAKEN USING STANTEC DIGITAL DRAWINGS OR DATA SHOULD BE CHECKED AGAINST EXISTING TITLE PEGS, TEMPORARY AND/OR PERMANENT SURVEY MARKS AS NOMINATED BY THE PROJECTS LICENSED SURVEYOR, THE SET-OUT INFORMATION PROVIDED ON ARCHITECTURAL AND/OR OTHER PROJECT RELATED DRAWINGS AND DOCUMENTS, IN CONJUNCTION WITH THE APPROVED HARD COPY DRAWINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION

NOTE:
ALL FILLING WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH AS 3798-2007 LEVEL 1 INSPECTION AND TESTING & MINIMUM RELATIVE COMPACTION REQUIREMENTS. PLACEMENT MOISTURE CONDITION - MOISTURE VARIATION TO NOT EXCEED ±2% OF OPTIMUM MOISTURE CONTENT.



LAYOUT PLAN

SCALE 1:500

FOR APPROVAL

ISSUE	ISSUED FOR	DATE	DRAWN	APPROVED
01	PRELIMINARY	13/11/2020	TP/MA	
02	TENDER	18/11/2020	TP	
03	INFORMATION	03/03/2023	RJF	
04	TENDER	07/06/2023	CB/LP	
05	FOR APPROVAL	18/10/2023	ST	R.D.

ISSUE	ISSUED FOR	DATE	DRAWN	APPROVED

DESIGNED:	M. ANTON	DATE:	NOVEMBER 2020
DRAWN:	T. POPOVSKI	SCALE:	A1: 1:500, A3: 1:1000
SURVEY:	STANTEC	SHEET SIZE:	A1 / A3
CHECKED:	R.DUNN	APPROVED:	R.DUNN
DATE:	18.10.23	DATE:	18.10.23

Stantec
ABN 17 007 820 322
1315 Sturt Street (PO Box 563W) Ballarat, VIC Australia 3350
Phone +61 3 5330 8888 Fax +61 3 5333 3815
Web: www.stantec.com

CLIENT: villawood properties — Communities Designed for Living

PROJECT: Drew's PADDOCK INVERMAY PARK — STAGE 2

CIVIL DRAWING

NORTH

DRAWING TITLE: EXISTING & FINISHED SURFACE PLAN, BASIN CHAINAGES & SERVICE LOCATION PLAN

REF. No.: 17547-202 | SHEET: C03 OF 21 | REV: 05

Appendix B – Laboratory Testing

Material Test Report

Report Number: **AGT60290-1**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Future Stage 3 noted*
Date Issued: 28/02/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1808
Date Sampled: 06/12/2023
Dates Tested: 06/12/2023 - 09/12/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drew's Paddock Stage 2, Invermay
Material: (CH) silty CLAY- Brown
Material Source: Onsite

Australian Geotechnical Testing
Ballarat Laboratory
2/55 Heinz Road Delacombe VIC 3356
Phone: 1300 026 583
Email: PaulF@ausgeotest.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Paul Francis
Laboratory Manager - Ballarat
NATA Accredited Laboratory Number: 20457

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-1	60290-2	60290-3
Date Tested	06/12/2023	06/12/2023	06/12/2023
Time Tested	12:20	16:40	16:45
Test Request #/Location	Future Stage 3 Lot 323	Future Stage 3 Lot 322	Future Stage 3 Lot 323
Latitude	-37.5241	-37.5248	-37.52416
Longitude	143.85173	143.85126	143.85132
Layer / Reduced Level	1m BFSL	1m BFSL	1m BFSL
Thickness of Layer (mm)	150	150	150
Soil Description	Silty CLAY	Silty CLAY	Silty CLAY
Test Depth (mm)	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m^3	1.92	1.96	1.92
Field Moisture Content %	25.0	23.0	17.0
Field Dry Density (FDD) t/m^3	1.54	1.60	1.64
Peak Converted Wet Density t/m^3	1.95	1.96	1.95
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.5	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**98.5**	**100.0**	**98.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-2**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Stage 3 removed*
Date Issued: 28/02/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1811
Date Sampled: 07/12/2023
Dates Tested: 07/12/2023 - 09/12/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drew's Paddock Stage 2, Invermay
Material: (CH) silty CLAY- Brown
Material Source: Onsite

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-5		
Date Tested	07/12/2023		
Time Tested	16:00		
Test Request #/Location	Stage 2 Lot 215		
Latitude	-37.52106		
Longitude	143.8531		
Layer / Reduced Level	500mm below FSL		
Thickness of Layer (mm)	150		
Soil Description	(CH) silty CLAY- Brown		
Test Depth (mm)	125		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	**		
Field Wet Density (FWD) t/m^3	1.95		
Field Moisture Content %	27.7		
Field Dry Density (FDD) t/m^3	1.53		
Peak Converted Wet Density t/m^3	1.97		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**99.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-3**
Issue Number: 1
Date Issued: 13/12/2023
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1815
Date Sampled: 08/12/2023
Dates Tested: 08/12/2023 - 09/12/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Location: Drews Paddock Stage 2, Invermay
Material: (CH) silty CLAY- Brown
Material Source: Onsite

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Approved Signatory: Paul Francis
Laboratory Manager - Ballarat
NATA Accredited Laboratory Number: 20457

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-7	60290-8	60290-9
Date Tested	08/12/2023	08/12/2023	08/12/2023
Time Tested	16:00	16:05	16:10
Test Request #/Location	Drew's Paddock Stage 2 Lot 217	Drew's Paddock Stage 2 Lot 218	Drew's Paddock Stage 2 Lot 216
Latitude	-37.52341	-37.52529	-37.52518
Longitude	143.84895	143.8516	143.85165
Layer / Reduced Level	500 mm below	500 mm below	500 mm below
Thickness of Layer (mm)	150	150	150
Soil Description	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m^3	1.92	1.96	1.89
Field Moisture Content %	22.2	20.8	19.7
Field Dry Density (FDD) t/m^3	1.57	1.63	1.58
Peak Converted Wet Density t/m^3	1.92	1.93	1.93
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	0.0	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.0**	**102.0**	**98.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-4**
Issue Number: 1
Date Issued: 18/12/2023
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1822
Date Sampled: 13/12/2023
Dates Tested: 14/12/2023 - 14/12/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 98% Standard
Site Selection: Selected by Client
Location: Drew's Paddock Stage 2, Invermay
Material: Brown Silty Clay
Material Source: Onsite

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Laboratory Manager - Ballarat
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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-10	60290-11	60290-12
Date Tested	13/12/2023	13/12/2023	13/12/2023
Time Tested	15:00	15:10	15:20
Test Request #/Location	Drew's Paddock Lot 228	Drew's Paddock Lot 225	Drew's Paddock Lot 222
Latitude	-37.52538	-37.52538	-37.52521
Longitude	143.85171	143.85158	143.85111
Layer / Reduced Level	FSL	FSL	FSL
Thickness of Layer (mm)	150	150	150
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay
Test Depth (mm)	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m^3	2.11	2.03	1.95
Field Moisture Content %	30.0	30.4	26.5
Field Dry Density (FDD) t/m^3	1.62	1.56	1.54
Peak Converted Wet Density t/m^3	2.10	2.04	1.99
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.5	0.5	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**99.5**	**97.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-5**
Issue Number: 1
Date Issued: 20/12/2023
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1823
Dates Tested: 14/12/2023 - 15/12/2023
Location: Drew's Paddock Stage 2, Invermay

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-13	60290-14	60290-15
Date Tested	14/12/2023	14/12/2023	14/12/2023
Time Tested	13:00	13:05	13:10
Test Request #/Location	Drew's Paddock Stage 2 Lot 219	Drew's Paddock Stage 2 Lot 218	Drew's Paddock Stage 2 Lot 220
Latitude	-37.52521	-37.52513	-37.52503
Longitude	143.85166	143.8517	143.85166
Layer / Reduced Level	FSL	FSL	FSL
Thickness of Layer (mm)	150	150	150
Soil Description	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown
Test Depth (mm)	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m^3	2.08	2.02	2.04
Field Moisture Content %	24.1	22.5	23.9
Field Dry Density (FDD) t/m^3	1.68	1.65	1.64
Peak Converted Wet Density t/m^3	2.07	2.04	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.5	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**99.0**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-6**
Issue Number: 1
Date Issued: 20/12/2023
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1824
Date Sampled: 15/12/2023
Dates Tested: 15/12/2023 - 18/12/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drew's Paddock Stage 2, Invermay
Material: (CH) silty CLAY- Brown
Material Source: Import

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Laboratory Manager - Ballarat
NATA Accredited Laboratory Number: 20457

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-16	60290-17	60290-18
Date Tested	15/12/2023	15/12/2023	15/12/2023
Time Tested	13:00	13:05	13:10
Test Request #/Location	Drew's Paddock Stage 2 Lot 217	Drew's Paddock Stage 2 Lot 216	Drew's Paddock Stage 2 Lot 215
Latitude	-37.52526	-37.52516	-37.52515
Longitude	143.82508	143 85206	143.85208
Layer / Reduced Level	FSL	FSL	FSL
Thickness of Layer (mm)	150	150	150
Soil Description	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown
Test Depth (mm)	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m^3	2.13	2.05	1.96
Field Moisture Content %	21.0	18.5	18.0
Field Dry Density (FDD) t/m^3	1.76	1.73	1.66
Peak Converted Wet Density t/m^3	2.16	2.11	2.16
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.5	0.5	1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**97.0**	**91.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-7**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Stage 3 removed*
Date Issued: 28/02/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1825
Date Sampled: 18/12/2023
Dates Tested: 18/12/2023 - 19/12/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drew's Paddock Stage 2, Invermay
Material: (CH) silty CLAY- Brown
Material Source: Import

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Approved Signatory: Paul Francis
Laboratory Manager - Ballarat
NATA Accredited Laboratory Number: 20457

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-21	60290-22	
Date Tested	18/12/2023	18/12/2023	
Time Tested	13:10	13:15	
Test Request #/Location	Drew Paddock Stage 2 Lot 214	Drew Paddock Stage 2 Lot 215 - Retest Sample #60290-18	
Latitude	-37.52517	-37.52515	
Longitude	143.85613	143.85208	
Layer / Reduced Level	300 mm below FSL	FSL	
Thickness of Layer (mm)	150	150	
Soil Description	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown	
Test Depth (mm)	125	125	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	**	**	
Field Wet Density (FWD) t/m^3	2.12	2.02	
Field Moisture Content %	20.1	22.8	
Field Dry Density (FDD) t/m^3	1.76	1.65	
Peak Converted Wet Density t/m^3	2.10	2.05	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	0.0	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**101.0**	**99.0**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-8**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Stage 3 removed*
Date Issued: 28/02/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1826
Date Sampled: 20/12/2023
Dates Tested: 20/12/2023 - 21/12/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drews Paddock Stage 2, Invermay North
Material: (CH) silty CLAY- Brown
Material Source: Import

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-25		
Date Tested	20/12/2023		
Time Tested	13:10		
Test Request #/Location	Drew's Paddock Stage 2 Lot 221		
Latitude	-37.5250		
Longitude	143.85113		
Layer / Reduced Level	FSL		
Thickness of Layer (mm)	150		
Soil Description	(CH) silty CLAY- Brown		
Test Depth (mm)	125		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	**		
Field Wet Density (FWD) t/m^3	2.01		
Field Moisture Content %	19.4		
Field Dry Density (FDD) t/m^3	1.68		
Peak Converted Wet Density t/m^3	2.05		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**98.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-9**
Issue Number: 1
Date Issued: 22/12/2023
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1827
Date Sampled: 21/12/2023
Dates Tested: 21/12/2023 - 22/12/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drew's Paddock Stage 2, Invermay North
Material: (CH) silty CLAY- Brown
Material Source: Import

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-26	60290-27	60290-28
Date Tested	21/12/2023	21/12/2023	21/12/2023
Time Tested	13:00	13:05	13:10
Test Request #/Location	Drew's Paddock Stage 2 Lot 325	Drew's Paddock Stage 2 Lot 219	Drew's Paddock Stage 2 Lot 220
Latitude	-37.52515	-37.52496	-37.5258
Longitude	143.8514	143.85144	143.85152
Layer / Reduced Level	FSL	FSL	FSL
Thickness of Layer (mm)	150	150	150
Soil Description	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m^3	2.07	2.02	2.05
Field Moisture Content %	19.3	22.6	14.5
Field Dry Density (FDD) t/m^3	1.74	1.64	1.79
Peak Converted Wet Density t/m^3	2.09	2.06	2.04
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.5	0.0	0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**99.0**	**98.0**	**100.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-10**
Issue Number: 1
Date Issued: 07/02/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1834
Date Sampled: 25/01/2024
Dates Tested: 25/01/2024 - 25/01/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drews Paddock, Stage 2, Invermay
Material: (CH) silty CLAY- Brown
Material Source: Enchanted Estate (Grange)

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-29	60290-30	60290-31
Date Tested	25/01/2024	25/01/2024	25/01/2024
Time Tested	13:00	13:05	13:10
Test Request #/Location	Drews Paddock, Stage 2 Lot 212	Drews Paddock, Stage 2 Lot 213	Drews Paddock, Stage 2 Lot 211
Latitude	-37.524250	-37.524186	-37.524225
Longitude	143.851172	143.851453	143.851688
Layer / Reduced Level	400 Below FSL	400 Below FSL	400 Below FSL
Thickness of Layer (mm)	150	150	150
Soil Description	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown
Test Depth (mm)	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m^3	2.00	2.16	2.12
Field Moisture Content %	24.2	22.8	24.9
Field Dry Density (FDD) t/m^3	1.61	1.76	1.70
Peak Converted Wet Density t/m^3	2.00	2.12	2.09
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-0.5	2.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.0**	**101.5**	**101.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC
Density Decay Correction Factor as per Section 307.131

Material Test Report

Report Number: **AGT60290-11**
Issue Number: 1
Date Issued: 08/02/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1837
Date Sampled: 30/01/2024
Dates Tested: 30/01/2024 - 31/01/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drews Paddock, Stage 2 Invermay
Material: (CH) silty CLAY- Brown
Material Source: Import, grange

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-32		
Date Tested	30/01/2024		
Time Tested	13:10		
Test Request #/Location	Drew's Paddock - Stage 2 Lot 210		
Latitude	-37.524006		
Longitude	143.851749		
Layer / Reduced Level	400 Below FSL		
Thickness of Layer (mm)	150		
Soil Description	(CH) silty CLAY- Brown		
Test Depth (mm)	125		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	**		
Field Wet Density (FWD) t/m^3	2.06		
Field Moisture Content %	20.2		
Field Dry Density (FDD) t/m^3	1.71		
Peak Converted Wet Density t/m^3	2.03		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**101.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-12**
Issue Number: 1
Date Issued: 08/02/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1840
Date Sampled: 31/01/2024
Dates Tested: 31/01/2024 - 01/02/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Location: Drews Paddock Stage 2, Invermay
Material: Silty CLAY
Material Source: Import

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-33		
Date Tested	31/01/2024		
Time Tested	13:00		
Test Request #/Location	Drews Paddock - Stage 2 Lot 209		
Latitude	-37.52389		
Longitude	143.85199		
Layer / Reduced Level	450 below FSL		
Thickness of Layer (mm)	150		
Soil Description	Silty CLAY		
Test Depth (mm)	125		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	**		
Field Wet Density (FWD) t/m^3	1.96		
Field Moisture Content %	22.8		
Field Dry Density (FDD) t/m^3	1.59		
Peak Converted Wet Density t/m^3	1.94		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**101.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-13**
Issue Number: 1
Date Issued: 08/02/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1843
Date Sampled: 02/02/2024
Dates Tested: 02/02/2024 - 03/02/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Remarks: REFER TO WR1842
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drews Paddock, Stage 2
Material: (CH) silty CLAY- Brown
Material Source: Import Grange

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-34		
Date Tested	02/02/2024		
Time Tested	16:30		
Test Request #/Location	Drews Paddock -Stage 2 Lot 207		
Latitude	-37.525600		
Longitude	143.851890		
Layer / Reduced Level	450 Below FSL		
Thickness of Layer (mm)	150		
Soil Description	(CH) silty CLAY- Brown		
Test Depth (mm)	125		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	**		
Field Wet Density (FWD) t/m^3	2.12		
Field Moisture Content %	20.6		
Field Dry Density (FDD) t/m^3	1.76		
Peak Converted Wet Density t/m^3	2.12		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	1.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**100.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-14**
Issue Number: 1
Date Issued: 27/03/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1905
Date Sampled: 25/03/2024
Dates Tested: 25/03/2024 - 25/03/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drews Paddcok Stage 2
Material: (CH) silty CLAY- Brown
Material Source: Import

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-35		
Date Tested	25/03/2024		
Time Tested	13:10		
Test Request #/Location	Drews Paddock Stage 2 Lot 208		
Latitude	-37.523943		
Longitude	143.851733		
Layer / Reduced Level	FSL		
Thickness of Layer (mm)	150		
Soil Description	(CH) silty CLAY- Brown		
Test Depth (mm)	125		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	**		
Field Wet Density (FWD) t/m^3	1.88		
Field Moisture Content %	24.0		
Field Dry Density (FDD) t/m^3	1.52		
Peak Converted Wet Density t/m^3	1.94		
Adjusted Peak Converted Wet Density t/m^3	**		
Moisture Variation (Wv) %	0.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	**97.0**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-15**
Issue Number: 1
Date Issued: 22/04/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1936
Date Sampled: 16/04/2024
Dates Tested: 16/04/2024 - 19/04/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drews Paddock, Stage 2
Material: (CL) CLAY- Brown
Material Source: Onsite

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-36	60290-37	
Date Tested	16/04/2024	16/04/2024	
Time Tested	12:40	12:45	
Test Request #/Location	Drews Paddock - Stage 2 Lot 212	Drews Paddock - Stage 2 Lot 210	
Latitude	-37.524153	-37.524100	
Longitude	143.851927	143.851969	
Layer / Reduced Level	FSL	FSL	
Thickness of Layer (mm)	150	150	
Soil Description	(CL) CLAY- Brown	(CL) CLAY- Brown	
Test Depth (mm)	125	125	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	**	**	
Field Wet Density (FWD) t/m^3	2.05	2.07	
Field Moisture Content %	17.9	20.3	
Field Dry Density (FDD) t/m^3	1.74	1.72	
Peak Converted Wet Density t/m^3	2.08	2.09	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	-2.0	-2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**98.5**	**99.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **AGT60290-16**
Issue Number: 1
Date Issued: 26/04/2024
Client: Wayne Horne Earthmoving
3 Trewin Street, Wendouree VIC 3355
Project Number: AGT60290
Project Name: Drew's Paddock Stage 2
Project Location: Invermay
Work Request: 1949
Date Sampled: 22/04/2024
Dates Tested: 22/04/2024 - 24/04/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard
Site Selection: Selected by Client
Location: Drews Paddock Stage 2
Material: (CH) silty CLAY- Brown
Material Source: Onsite

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	60290-38	60290-39	
Date Tested	22/04/2024	22/04/2024	
Time Tested	15:45	15:50	
Test Request #/Location	Drews Paddock Stage 2 Lot211	Drews Paddock Stage 2 Lot209	
Latitude	-37.524026	-37.523750	
Longitude	143.851989	143.851944	
Layer / Reduced Level	150mm below FSL	150mm below FSL	
Thickness of Layer (mm)	150	150	
Soil Description	(CH) silty CLAY- Brown	(CH) silty CLAY- Brown	
Test Depth (mm)	125	125	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	**	**	
Field Wet Density (FWD) t/m^3	1.99	2.08	
Field Moisture Content %	23.2	20.3	
Field Dry Density (FDD) t/m^3	1.62	1.73	
Peak Converted Wet Density t/m^3	2.01	2.05	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Moisture Variation (Wv) %	2.0	1.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**99.0**	**101.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Appendix C – Site Photos