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LEVEL 1 INSPECTION & TESTING REPORT
ALAMORA ESTATE – STAGE 20, TARNEIT

Prepared for Winslow Constructors Pty Ltd

Report Reference: GS8054.1 AA

Date: 28 February 2025

ABN 31 105 704 078

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PROJECT DETAILS

Project Reference	GS8054.1	Rev	AA
Project Title	Alamora Estate – Stage 20		
Project Location	Tarneit	State	VIC
Date	28 February 2025		

CLIENT DETAILS

Prepared For (Client)	Winslow Constructors Pty Ltd
Client Address	Level 1, 6 English Street, Essendon Fields, 3041

DISTRIBUTION

Original Held By	Ground Science Pty Ltd
One (1) Electronic Copy	Winslow Constructors Pty Ltd

This document presents the results of the Level 1 Inspection and Testing performed by Ground Science for the aforementioned project, as the nominated project Geotechnical Inspection & Testing Authority (GITA). This report is detailed for the sole use of the intended recipient(s). Should you have any questions related to this report please do not hesitate to contact the undersigned.

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Table of Contents

1. INTRODUCTION

This report presents the results of the Level 1 inspection activities, compaction control services and laboratory testing services performed by Ground Science for Alamora Estate Stage 20 located in Tarneit, Victoria (the site).

2. PROJECT BACKGROUND

It is understood that the project involves the construction of fill platforms to support the proposed residential subdivision within Stage 20. Ground Science was engaged to provide Level 1 Inspection and Testing services for these components of the project. Authorisation to proceed was provided by Winslow Constructors Pty Ltd (the 'Client').

Level 1 Inspection & Testing, as defined in AS3798 (2007) 'Guidelines on Earthworks for Commercial and Residential Developments' provides for full time inspection of the construction of controlled fill and compaction testing in accordance with AS1289 'Methods of Testing Soils for Engineering Purposes' and AS1726 (2017) 'Geotechnical Site Investigations'. Ground Science performed the role of the project Geotechnical Inspection & Testing Authority (GITA) with all Level 1 Inspection and Testing services described in this report undertaken by an experienced GITA site representative.

3. SCOPE OF WORKS

3.1 AREAS & DURATION OF WORKS

The works generally involved the placement of controlled fill on the areas shown in **Appendix B**. This report details the Level 1 earthworks process performed on-site which commenced on 3 February 2025 and completed on 6 February 2025, requiring 4 days of on-site inspection and testing services. The indicative area of works is presented in Figure 1, outlined in blue.

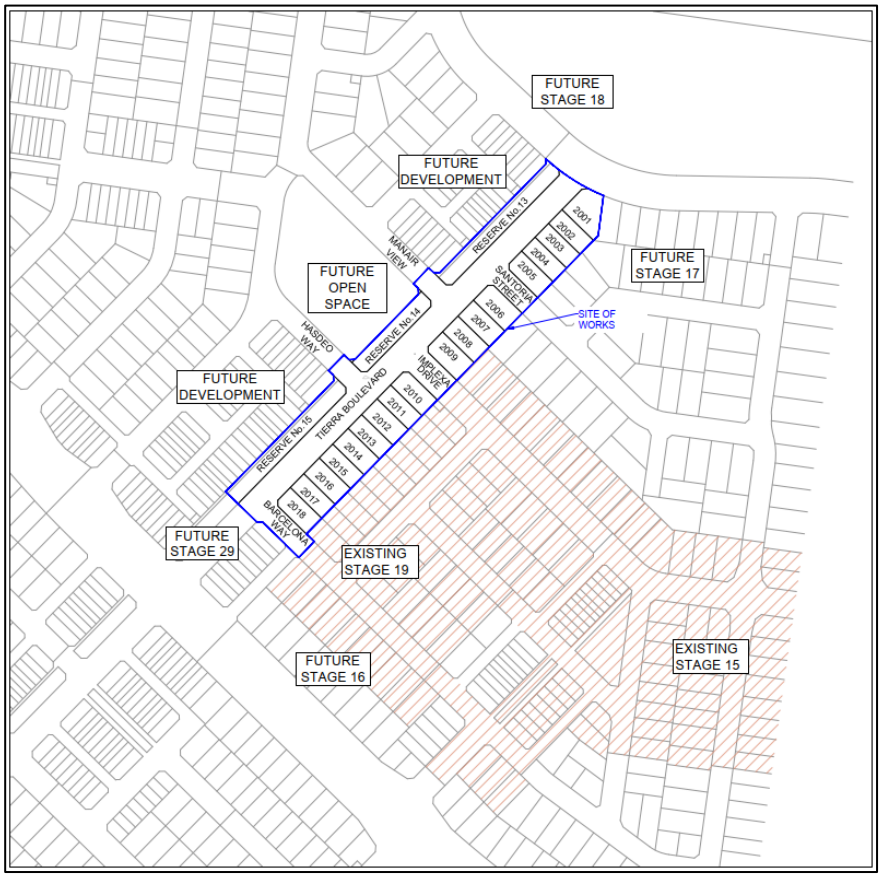


Figure 1: Locality Site Plan (Source: 200282.20 – Alamora Stage 20)

3.2 PLACEMENT METHODOLOGY

A technical specification or preceding geotechnical report was not provided. The placement of controlled fill on the above-mentioned areas was instructed to be carried out in accordance with Level 1 Inspection & Testing fill procedures as detailed in Section 8.2 of AS3798 (2007) 'Guidelines on Earthworks for Commercial and Residential Developments'. The fill placement methodology for the works involved:

1. preparing the base by stripping all loose surficial fill, topsoil, vegetation, and materials containing significant organic matter to expose the natural soil subgrade
2. sorting and mixing the fill materials to eliminate oversize particles
3. placing approved fill material in compacted horizontal layers not exceeding 150 mm in thickness
4. compacting the controlled fill materials to achieve a target dry density ratio of not less than 95 % Standard Compaction (AS 1289: 5.1.1, 5.4.1 or 5.7.1)
5. moisture-conditioning the fill to within ± 3 % moisture variation of the standard optimum moisture content (SOMC)
6. completing field density testing at a frequency for large scale developments (Type 1 AS3798) which nominates a frequency of not less than:
    - one test per layer or 200 mm per 2500 m^2
    - one test per 500 m^3 distributed reasonably evenly throughout the full depth and area, or
    - three tests per site visit; whichever requires the most tests.

4. INSPECTION AND TESTING RESULTS

4.1 SUBGRADE PREPARATION

The subgrade preparation works involved the use of graders to strip topsoil, loose/soft and unsuitable materials until a suitable natural subgrade was achieved.

The exposed subgrade was visually assessed using tactile methods described in AS1726 (2017) by the on-site GITA. The materials were observed to be naturally occurring 'Inferred Newer Volcanic Group - basalt flows (Neo)' residual soil deposits comprising Silty CLAY, CI, medium plasticity, red-brown.

4.2 FILL SOURCE MATERIALS

The fill material used was nominated by the on-site contractor, the material was inspected by the GITA and noted to be slightly dry of the optimum moisture content. Table 1 summarises the fill source and general material properties:

Table 1: Fill Source & General Material Properties

Source & Location	General Material Description
Onsite material – inferred locally sourced soils from road box-out cuts	Silty CLAY (CL-CH), low to high plasticity, brown, with varying proportions of sand and gravel

4.3 INSPECTION OF FILL SOURCE MATERIALS

Ground Science performed an assessment of the fill source materials listed in Table 1 for the following:

- identifying fill material suitability (engineering properties) including cohesion and composition
- observing any building debris and vegetative matter (cleanliness) in the fill

- distinguishing oversize rock particles
- examining the fill moisture.

4.3.1 MATERIAL SUITABILITY

The fill materials were noted to be generally compliant with AS3798 Section 4.0 for the intent and purpose of general filling.

Visual/tactile assessments were conducted to identify the condition of the fill used. The fill materials generally comprised Silty CLAY (CL-CH), low to high plasticity, brown, with varying proportions of sand and gravel.

4.3.2 BUILDING DEBRIS & VEGETATIVE MATTER

No fill material containing building debris and/or vegetation matter was observed.

4.3.3 OVERSIZE PARTICLES

Oversize particles were not observed by the on-site GITA.

4.3.4 FILL MOISTURE

The majority of the fill sources were assessed to be dry of the optimum moisture content. Portions of the fill material that were found to be dry of the of the optimum moisture content were moisture conditioned with a water cart truck prior and / or during placement.

4.3.5 CONTAMINATION TESTING

Ground Science did not perform any chemical or contamination analysis of the fill. The project contractor is responsible to ensure that the fill materials conform to the relevant EPA guidelines.

4.4 FILL CONSTRUCTION

The contractor had the following plant available on-site during the construction period for use in the fill placement;

1. water cart truck
2. compactor 815F
3. graders
4. scrapers
5. moxy truck.

4.4.1 CLIMATE

During fill placement, the weather conditions were noted to be partly cloudy and hot with light winds.

4.4.2 FILLING PROCESS

The filling process involved the following:

- graders spread fill material across the filling works area to form thin, loose layers
- watercart spraying the loose material to moisture condition and achieve a moisture close to the inferred SOMC
- compactor preformed 5 to 10 passes to compact the loose fill to 150 mm composite layer
- this process was repeated until the finished levels were achieved

- GITA performed representative nuclear density tests and samples across area of works.

It is considered that a 100 mm to 150 mm thick layer of topsoil would be spread at the completion of all works, which does not form part of the Level 1 process. Any fill placed as part of newly constructed drainage, sewer works, or similar does not form part of this Level 1 report.

4.5 COMPACTION CONTROL & MOISTURE TESTING RESULTS

Throughout the filling process and/or at the completion of the day's production, compaction control testing was performed to assess the achieved density ratio of each layer. The onsite GITA nominated the location and performed each test.

Testing comprised a total of 22 density tests using a nuclear moisture-density gauge and 22 rapid HILF compaction tests, including re-tests (AS1289 5.8.1 and AS1289 5.7.1).

Test locations S5, S6, S8 and S9 were initially tested dry of OMC. The failed test areas were re-worked and moisture conditioned and subsequently re-tested with passing results.

All areas were generally found to achieve the minimum target density ratio of 95 % Standard Compaction. The moisture variation was generally within + / - 3 % of OMC.

A summary of the field density tests performed for the project is presented in **Appendix A**. Field density and compaction control testing report sheets and test locations are presented in **Appendix B**. It should be noted that the tests are a representation of the fill placed and support the visual assessment of the works completed. Site photographs are presented in **Appendix C**.

4.6 FINAL SURFACE LEVELS

Observations were made by a Ground Science staff member that filling had been completed up to the nominated finished levels as per confirmation provided by the contractor's site foreman. The observed final levels are the constructed finished surface levels of the controlled fill.

It should be noted that the overall fill depths are estimated using on-site visual tactile methods and may not be a true representation of fill depths given that conditions on-site may change over time. True fill depths should be obtained from the contractor's survey data.

5. COMPLIANCE

Ground Science Staff have undertaken Level 1 Inspection and Testing services of the construction of the controlled fill in the areas shown in **Appendix B**. Ground Science field staff have also observed that the prepared subgrade provided an adequate base for the subsequent placement of controlled fill.

Based on observations made by Ground Science staff and the results of density tests, we consider that the controlled fill placed has been constructed in accordance with the guidelines provided by AS3798 (2007).

It should be noted that the final fill layers may be subjected to adverse weather conditions resulting in either surface softening or drying and cracking over time; regardless of the compactive efforts and moisture conditioning applied during the works.

The integrity of the top 200 mm to 300 mm of the fill will deteriorate with time and should be taken into account by the foundation engineer prior to the construction of dwellings or buildings.

6. UNDERSTANDING LEVEL 1 INSPECTION & TESTING AND THE ROLE OF A GITA

The purpose of performing Level 1 Inspection and Testing is to ensure compliance of the fill with the specification.

The engagement of a Geotechnical Inspection Testing Authority (GITA) is provided to document the activities completed by the civil contractor and allows the contractor to perform their role in the construction of the filling operation while the GITA monitors the quality control process of the fill placement.

The visual observations of thorough processes and work practices by the contractor allows the GITA to approve the subsequent placement of fill without having to wait for the completion of testing and the extended time it takes to get a test result back.

The GITA will however, carry out random spot checks of the filling operations throughout the day's production as confirmation that the placement procedures and the fill moisture content is appropriate. At the end of a day's production the GITA will sign off the completed works as satisfactory based on visual observations.

Any failed tests identified post the days production will result in that particular area of operation requiring rectification in the following activities. This may be as simple as extra rolling with compaction plant if moisture conditioning is suitable. Sometimes these areas may be retested if the GITA feels it is necessary.

While AS3798 (2007) is a guideline on the minimum requirements of filling on commercial and residential developments, some projects require a more detailed project specification to deal with site specific issues. While moisture conditioning of fill sources aids in the ease with which compaction is achieved, it is not necessarily a physical characteristic that determines if the placed fill is acceptable.

In some situations, the moisture requirement is an extremely important function of the final constructed product. In these situations, a specific project specification should apply to the project as detailed by the designing geotechnical engineer.

These are typical of clay liners for wet lands, dams, landfill liners and caps and an array of other engineering situations. Creating a consolidated platform of which is similar to equivalent surrounding natural conditions is the primary aim of level one processes and preventing the occurrence of differential ground movements to footing structures.

Level 1 Inspection & Testing requires full time inspection and testing of the fill placement undertaken on a site. Ground Science (project GITA), are notified daily (or at the completion of each day's work) by the project foreman where subsequent days of fill placement under Level 1 is to occur.

On projects that rely upon the importation of a fill source, there can be delays in the receipt of sufficient materials to warrant fill placement works which may result in periods of time where a GITA representative is not required on site.

It is the contractor's responsibility to notify the GITA when works proceed and their attendance on site is required again. A GITA relies upon the integrity of the contractor to advise when site attendance is required and makes all reasonable visual attempts to assess if the works are the same as the previous days attendance.

Note: A GITA is not a site supervisor and does not instruct the construction team. Advice may be sought from the GITA, to assist with achieving compaction.

7. LIMITATIONS

This type of investigation (as per our commission) is not designed or capable of locating all soil conditions, (which can vary even over short distances). The advice given in this report is based on the assumption that the test results are representative of the overall soil conditions.

However, it should be noted that actual conditions in some parts of the Site might differ from those found. If further sampling reveals soil conditions significantly different from those shown in our findings, Ground Science must be consulted.

Maintenance and upkeep of finished fill placement must be regularly monitored as exposure to extended weather periods/other elements may cause surface drying which may lead to cracking. Conversely, excessive exposure to moisture may cause heaving/softening in the soils.

It is recognised that the passage of time affects the information and assessment provided in this document. Ground Science's assessment is based on information that existed at the time of the preparation of this document.

It is understood that the services provided allowed Ground Science to form no more than an opinion of the actual site conditions observed during sampling and observations of the site visit and cannot be used to assess the effects of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

The scope and the period of Ground Science services are described in the proposal and are subject to restrictions and limitations. Ground Science did not perform a complete assessment of all possible conditions or circumstances that may exist at the Site.

If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Ground Science in regards to it.

Where data has been supplied by the client or a third party, it is assumed that the information is correct unless otherwise stated. No responsibility is accepted by Ground Science for incomplete or inaccurate data supplied by others.

Any drawings or figures presented in this report should be considered only as pictorial evidence of our work. Therefore, unless otherwise stated, any dimensions should not be used for accurate calculations or dimensioning.

All other property in this submission shall not pass until all fees for preparation have been settled. This submission is for the use only of the party to whom it is addressed and for no other purpose.

No responsibility is accepted to any third party who may use or rely on the whole or any part of the content of this submission. No responsibility will be taken for this report if it is altered in any way, or not reproduced in full. This document remains the property of Ground Science Pty Ltd until all fees and monies have been paid in full.

8. REFERENCES

- AS3798 (2007) Guidelines on Earthworks for Residential and Commercial Developments.
- AS1289 Methods of Testing Soils for Engineering Purposes.
- AS1726 (2017): Geotechnical Site Investigations

APPENDIX A

Field Density Test Summary

Project Summary Report

Ground Science Pty Ltd
Ground Science Laboratory
13 Brock Street Thomastown Victoria 3074
Phone: (03) 9464 4617
Email: mark@groundscience.com.au

Report Date: 21/02/2025
Client: Winslow Constructors Pty Ltd
Lot 13, 6 Latchford Street, Cranbourne West VIC 3977
Contact: Ryan Spicer
Project Number: GS8054/1
Project Name: Alamora Estate – Stage 20 (Level 1)
Project Location: Tarneit
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Test Methods: AS 1289 5.7.1 STD & 5.8.1 & 2.1.1

Lot #	Sample #	Date Sampled	Location	Easting	Northing	Elevation (m)	Layer	Relative Compaction (%)	Moisture Variation (%)	Moisture Content (%)	Field Wet Density (t/m3)
**	80541-S1	03/02/2025	Lot 2017/2018	292000	5807771	**	Layer 1	98.0	-1.5	29.8	1.82
**	80541-S2	03/02/2025	Lot 2014	292028	5807800	**	Layer 1	99.5	-0.5	30.9	1.84
**	80541-S3	03/02/2025	Lot 2011/2012	292059	5807825	**	Layer 1	97.0	-1.0	29.3	1.82
**	80541-S4	04/02/2025	Lot 2006	292141	5807908	**	Layer 1	97.5	2.0	26.9	1.81
**	80541-S5	04/02/2025	Lot 2007/2008	292129	5807897	**	Layer 1	100.0	4.0	22.6	1.82
**	80541-S6	04/02/2025	Lot 2009	292112	5807878	**	Layer 1	101.0	5.5	22.0	1.82
**	80541-S7	05/02/2025	Reserve No. 13	292146	5807957	**	FSL	102.5	2.0	27.3	1.83
**	80541-S8	05/02/2025	Reserve No. 14	292081	5807896	**	FSL	105.5	3.5	28.8	1.82
**	80541-S9	05/02/2025	Reserve No. 15	292010	5807826	**	FSL	104.0	4.5	29.1	1.81
**	80541-S10	05/02/2025	Lots 2002/2003	292199	5807944	**	Layer 1	101.0	2.5	26.5	1.85
**	80541-S11	06/02/2025	Lots 2010-2011	292087	5807846	**	Layer 2	98.0	2.5	25.4	1.82
**	80541-S12	06/02/2025	Lot 2013	292064	5807817	**	Layer 2	97.5	2.5	25.8	1.81
**	80541-S13	06/02/2025	Lots 2015/2016	292034	5807787	**	Layer 2	104.5	2.0	25.6	1.81
**	80541-S14	06/02/2025	Retest WR22228 S5	292138	5807903	**	Layer 1	98.0	0.5	25.3	1.84
**	80541-S15	06/02/2025	Retest WR22228 S6	292116	5807885	**	Layer 1	99.0	2.5	26.3	1.82
**	80541-S16	06/02/2025	Lots 2006/2007	292138	5807903	**	Layer 2	99.5	0.5	31.3	1.84
**	80541-S17	06/02/2025	Lots 2008/2009	292116	5807885	**	Layer 2	99.5	2.0	28.4	1.84
**	80541-S18	11/02/2025	Retest WR22233 S8	292081	5807896	**	FSL	102.5	3.0	23.3	1.90
**	80541-S19	11/02/2025	Retest WR22233 S9	292010	5807826	**	FSL	102.5	4.5	21.1	1.88
**	80541-S20	11/02/2025	Lot 2001	292225	5807974	**	Layer 1	102.0	3.0	22.1	1.87
**	80541-S21	11/02/2025	Lot 2004	292201	5807938	**	Layer 1	103.5	3.0	23.1	1.88
**	80541-S22	13/02/2025	Retest WR22233 S9	292010	5807826	**	FSL	95.5	0.0	28.9	1.82

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

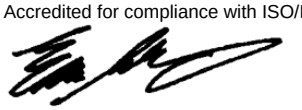
APPENDIX B

Field Density Test Report Sheets & Test Locations

Material Test Report

Ground Science Pty Ltd
Ground Science Laboratory
13 Brock Street Thomastown Victoria 3074
Phone: (03) 9464 4617
Email: ernie@groundscience.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Ernie Gmehling
Managing Director

NATA Accredited Laboratory Number: 15055

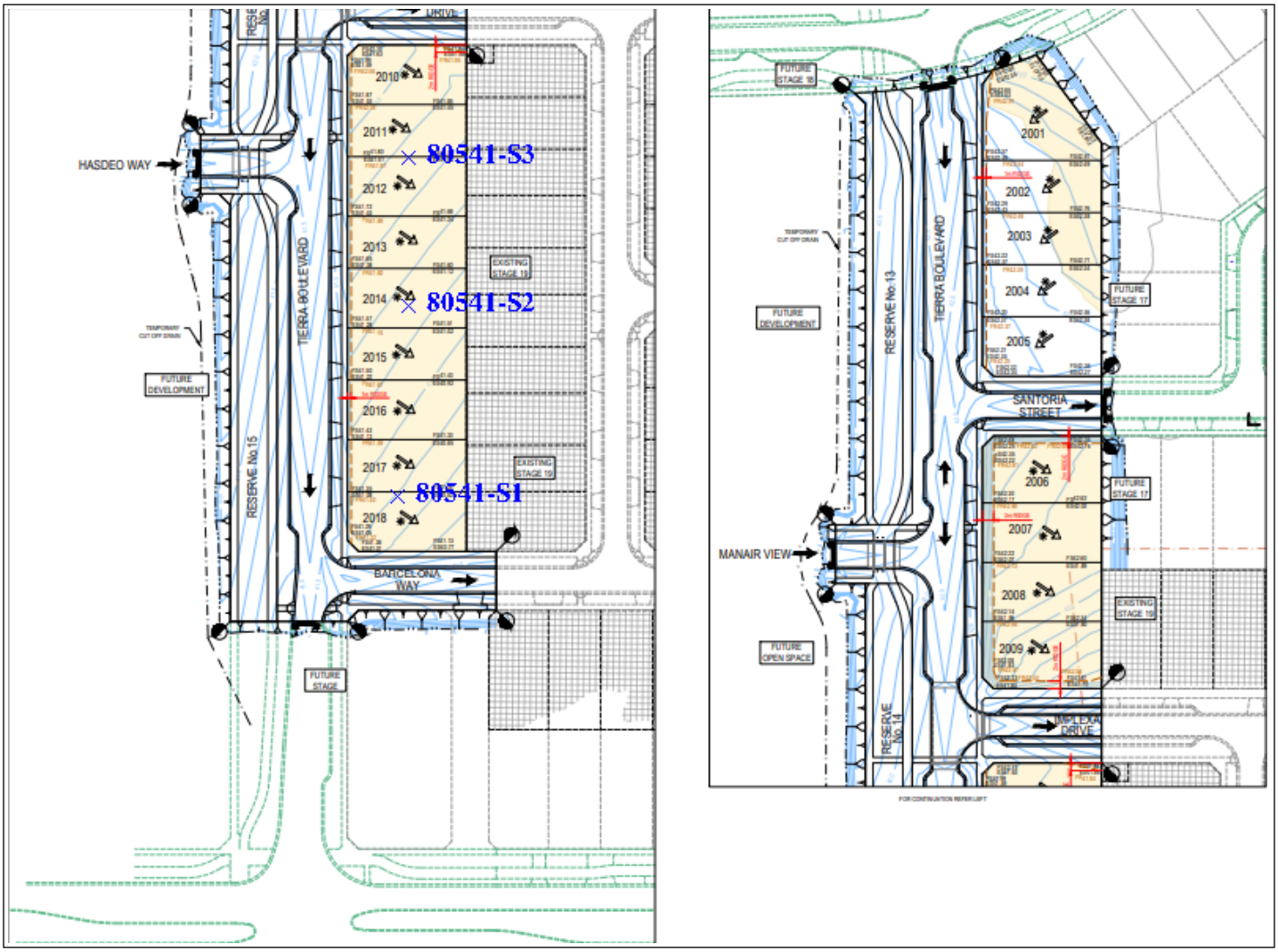
Report Number: **GS8054/1-1**
Issue Number: 1
Date Issued: 05/02/2025
Client: Winslow Constructors Pty Ltd
Lot 13, 6 Latchford Street, Cranbourne West VIC 3977
Contact: Ryan Spicer
Project Number: GS8054/1
Project Name: Alamora Estate – Stage 20 (Level 1)
Project Location: Tarneit
Work Request: 22012
Date Sampled: 03/02/2025 09:15
Dates Tested: 03/02/2025 - 05/02/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Tarneit
Material: Silty CLAY, low to medium plasticity, brown
Material Source: On site

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	80541-S1	80541-S2	80541-S3
Date Tested	03/02/2025	03/02/2025	03/02/2025
Time Tested	15:00	15:10	15:20
Test Request #/Location	Lot 2017/2018	Lot 2014	Lot 2011/2012
Easting	292000	292028	292059
Northing	5807771	5807800	5807825
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	150	150	150
Soil Description	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown
Test Depth (mm)	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.82	1.84	1.82
Field Moisture Content %	29.8	30.9	29.3
Field Dry Density (FDD) t/m^3	1.41	1.41	1.41
Peak Converted Wet Density t/m^3	1.86	1.85	1.89
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	-1.5	-0.5	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**98.0**	**99.5**	**97.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

Ground Science Pty Ltd
Ground Science Laboratory
13 Brock Street Thomastown Victoria 3074
Phone: (03) 9464 4617
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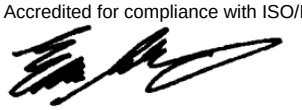
Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Ernie Gmehling
Managing Director

NATA Accredited Laboratory Number: 15055

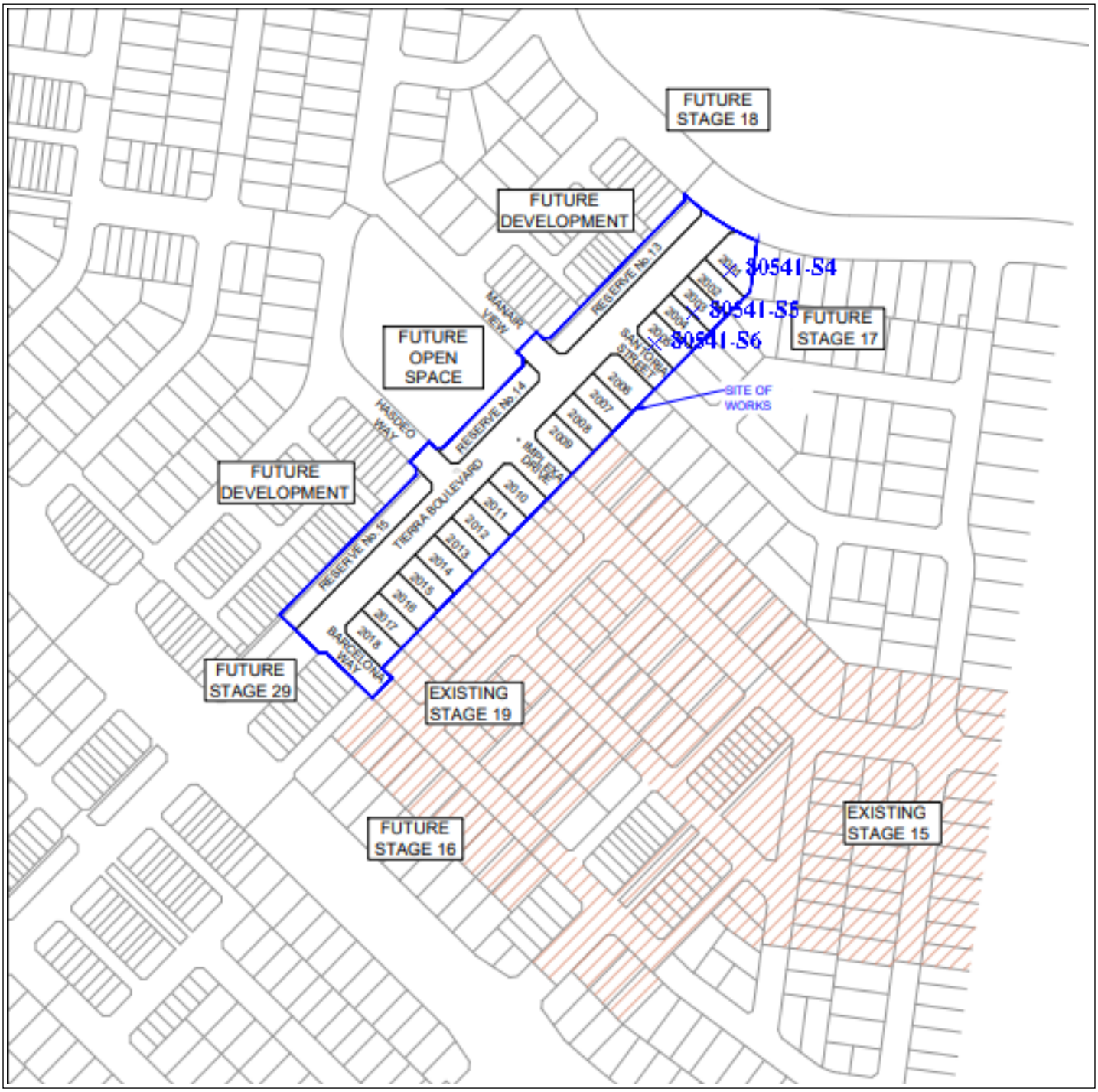
Report Number: **GS8054/1-2**
Issue Number: 1
Date Issued: 06/02/2025
Client: Winslow Constructors Pty Ltd
Lot 13, 6 Latchford Street, Cranbourne West VIC 3977
Contact: Ryan Spicer
Project Number: GS8054/1
Project Name: Alamora Estate – Stage 20 (Level 1)
Project Location: Tarneit
Work Request: 22228
Date Sampled: 04/02/2025 9:37
Dates Tested: 04/02/2025 - 05/02/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Tarneit
Material: Silty CLAY, medium to high plasticity, brown
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	80541-S4	80541-S5	80541-S6
Date Tested	04/02/2025	04/02/2025	04/02/2025
Time Tested	**	**	**
Test Request #/Location	Lot 2006	Lot 2007/2008	Lot 2009
Easting	292141	292129	292112
Northing	5807908	5807897	5807878
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	150	150	150
Soil Description	Silty CLAY, medium to high plasticity, brown	Silty CLAY, medium to high plasticity, brown	Silty CLAY, medium to high plasticity, brown
Test Depth (mm)	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m^3	1.81	1.82	1.82
Field Moisture Content %	26.9	22.6	22.0
Field Dry Density (FDD) t/m^3	1.42	1.49	1.50
Peak Converted Wet Density t/m^3	1.85	1.82	1.81
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	2.0	4.0	5.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**97.5**	**100.0**	**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

Sample Locations Plan

x - approximate test location



Material Test Report

Ground Science Pty Ltd
Ground Science Laboratory
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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Mark Longfield
Laboratory Manager
NATA Accredited Laboratory Number: 15055

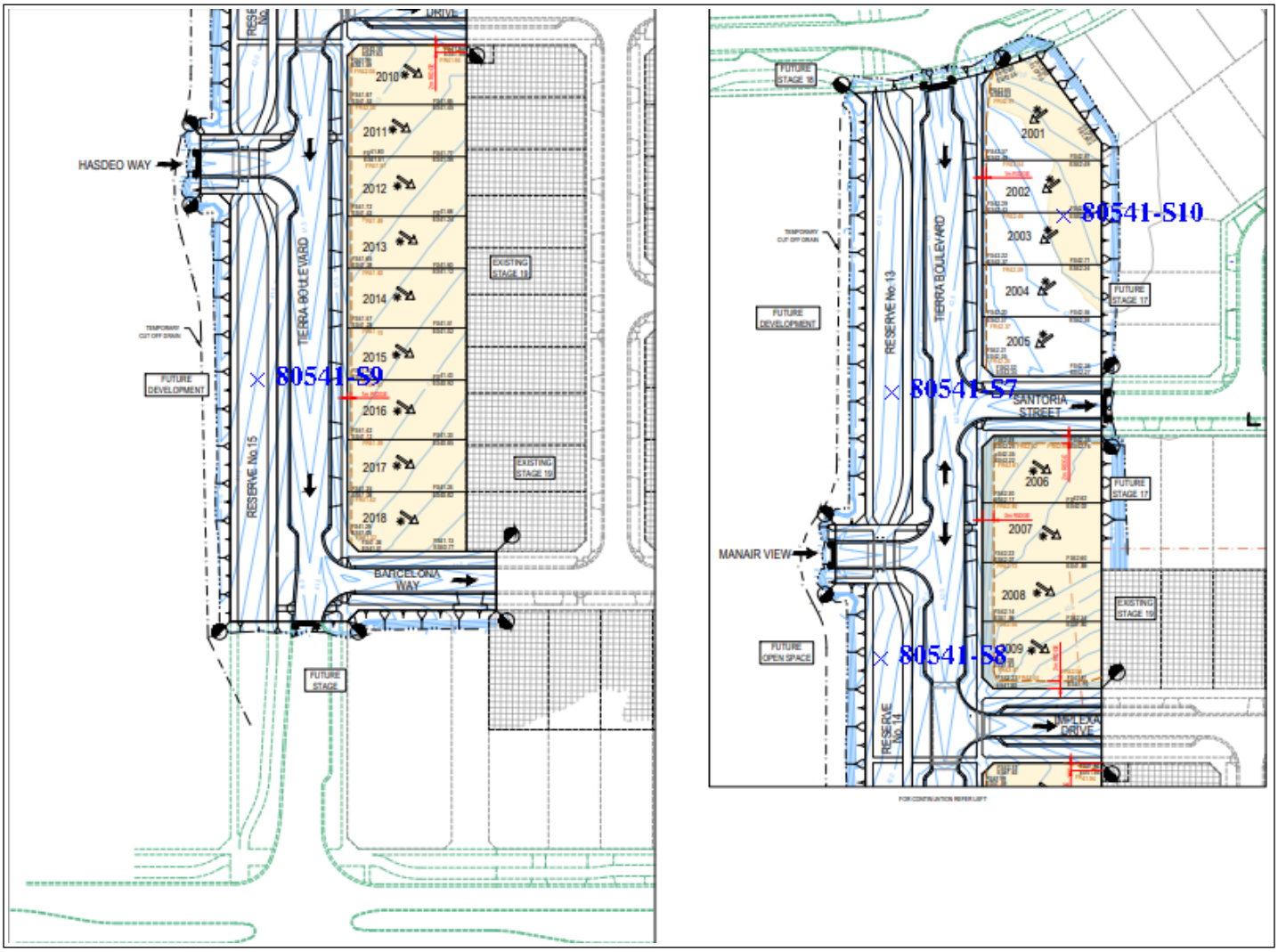
Report Number: **GS8054/1-3**
Issue Number: 1
Date Issued: 10/02/2025
Client: Winslow Constructors Pty Ltd
Lot 13, 6 Latchford Street, Cranbourne West VIC 3977
Contact: Ryan Spicer
Project Number: GS8054/1
Project Name: Alamora Estate – Stage 20 (Level 1)
Project Location: Tarneit
Work Request: 22233
Date Sampled: 05/02/2025 08:00
Dates Tested: 05/02/2025 - 07/02/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Tarneit
Material: Silty CLAY, low to medium plasticity, brown
Material Source: On Site

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	80541-S7	80541-S8	80541-S9	80541-S10
Date Tested	05/02/2025	05/02/2025	05/02/2025	05/02/2025
Time Tested	12:00	12:10	12:20	12:40
Test Request #/Location	Reserve No. 13	Reserve No. 14	Reserve No. 15	Lots 2002/2003
Easting	292146	292081	292010	292199
Northing	5807957	5807896	5807826	5807944
Layer / Reduced Level	FSL	FSL	FSL	Layer 1
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown
Test Depth (mm)	125	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.83	1.82	1.81	1.85
Field Moisture Content %	27.3	28.8	29.1	26.5
Field Dry Density (FDD) t/m^3	1.43	1.41	1.40	1.46
Peak Converted Wet Density t/m^3	1.79	1.73	1.74	1.83
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	2.0	3.5	4.5	2.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**102.5**	**105.5**	**104.0**	**101.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

Ground Science Pty Ltd
Ground Science Laboratory
13 Brock Street Thomastown Victoria 3074
Phone: (03) 9464 4617
Email: mark@groundscience.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Mark Longfield
Laboratory Manager
NATA Accredited Laboratory Number: 15055

Report Number: **GS8054/1-4**
Issue Number: 1
Date Issued: 10/02/2025
Client: Winslow Constructors Pty Ltd
Lot 13, 6 Latchford Street, Cranbourne West VIC 3977
Contact: Ryan Spicer
Project Number: GS8054/1
Project Name: Alamora Estate – Stage 20 (Level 1)
Project Location: Tarneit
Work Request: 22255
Date Sampled: 06/02/2025 08:00
Dates Tested: 06/02/2025 - 07/02/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Tarneit
Material: Silty CLAY, low to medium plasticity, brown
Material Source: On Site

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	80541-S11	80541-S12	80541-S13	80541-S14
Date Tested	06/02/2025	06/02/2025	06/02/2025	06/02/2025
Time Tested	08:30	08:40	08:50	10:30
Test Request #/Location	Lots 2010-2011	Lot 2013	Lots 2015/2016	Retest WR22228 S5
Easting	292087	292064	292034	292138
Northing	5807846	5807817	5807787	5807903
Layer / Reduced Level	Layer 2	Layer 2	Layer 2	Layer 1
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown
Test Depth (mm)	125	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m^3	1.82	1.81	1.81	1.84
Field Moisture Content %	25.4	25.8	25.6	25.3
Field Dry Density (FDD) t/m^3	1.45	1.44	1.44	1.47
Peak Converted Wet Density t/m^3	1.85	1.85	1.74	1.88
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.0	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	**98.0**	**97.5**	**104.5**	**98.0**
Compaction Method	**Standard**	**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

Ground Science Pty Ltd
Ground Science Laboratory
13 Brock Street Thomastown Victoria 3074
Phone: (03) 9464 4617
Email: mark@groundscience.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Mark Longfield
Laboratory Manager

NATA Accredited Laboratory Number: 15055

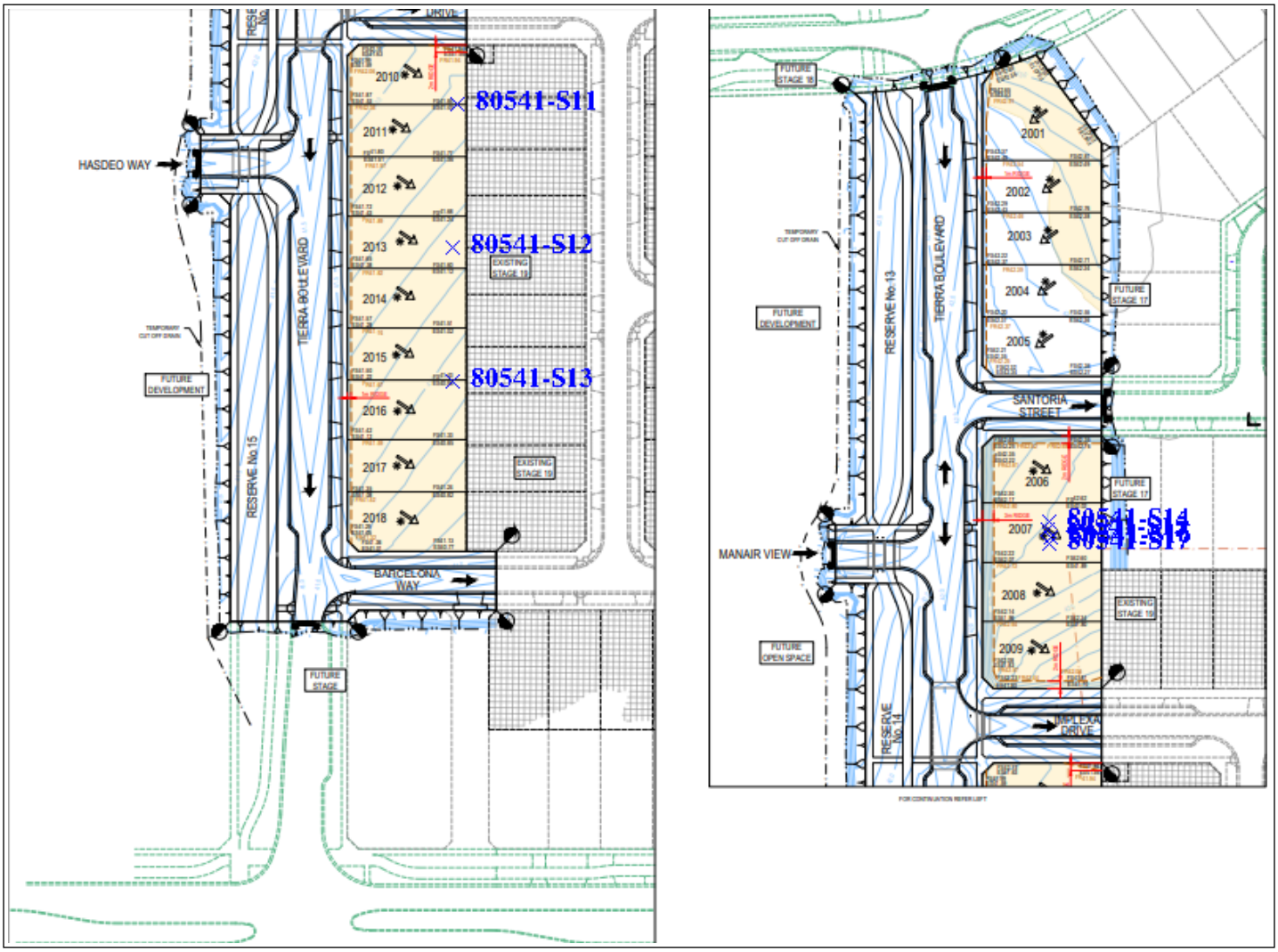
Report Number: **GS8054/1-4**
Issue Number: 1
Date Issued: 10/02/2025
Client: Winslow Constructors Pty Ltd
Lot 13, 6 Latchford Street, Cranbourne West VIC 3977
Contact: Ryan Spicer
Project Number: GS8054/1
Project Name: Alamora Estate – Stage 20 (Level 1)
Project Location: Tarneit
Work Request: 22255
Date Sampled: 06/02/2025 08:00
Dates Tested: 06/02/2025 - 07/02/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Tarneit
Material: Silty CLAY, low to medium plasticity, brown
Material Source: On Site

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	80541-S15	80541-S16	80541-S17	
Date Tested	06/02/2025	06/02/2025	06/02/2025	
Time Tested	10:40	11:30	11:40	
Test Request #/Location	Retest WR22228 S6	Lots 2006/2007	Lots 2008/2009	
Easting	292116	292138	292116	
Northing	5807885	5807903	5807885	
Layer / Reduced Level	Layer 1	Layer 2	Layer 2	
Thickness of Layer (mm)	150	150	150	
Soil Description	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	
Test Depth (mm)	125	125	125	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	0	
Field Wet Density (FWD) t/m^3	1.82	1.84	1.84	
Field Moisture Content %	26.3	31.3	28.4	
Field Dry Density (FDD) t/m^3	1.44	1.40	1.44	
Peak Converted Wet Density t/m^3	1.84	1.86	1.85	
Adjusted Peak Converted Wet Density t/m^3	**	**	**	
Moisture Variation (Wv) %	2.5	0.5	2.0	
Adjusted Moisture Variation %	**	**	**	
Hilf Density Ratio (%)	**99.0**	**99.5**	**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

Sample Locations Plan

x - approximate test location



Material Test Report

Ground Science Pty Ltd
Ground Science Laboratory
13 Brock Street Thomastown Victoria 3074
Phone: (03) 9464 4617
Email: ernie@groundscience.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Ernie Gmehling
Managing Director

NATA Accredited Laboratory Number: 15055

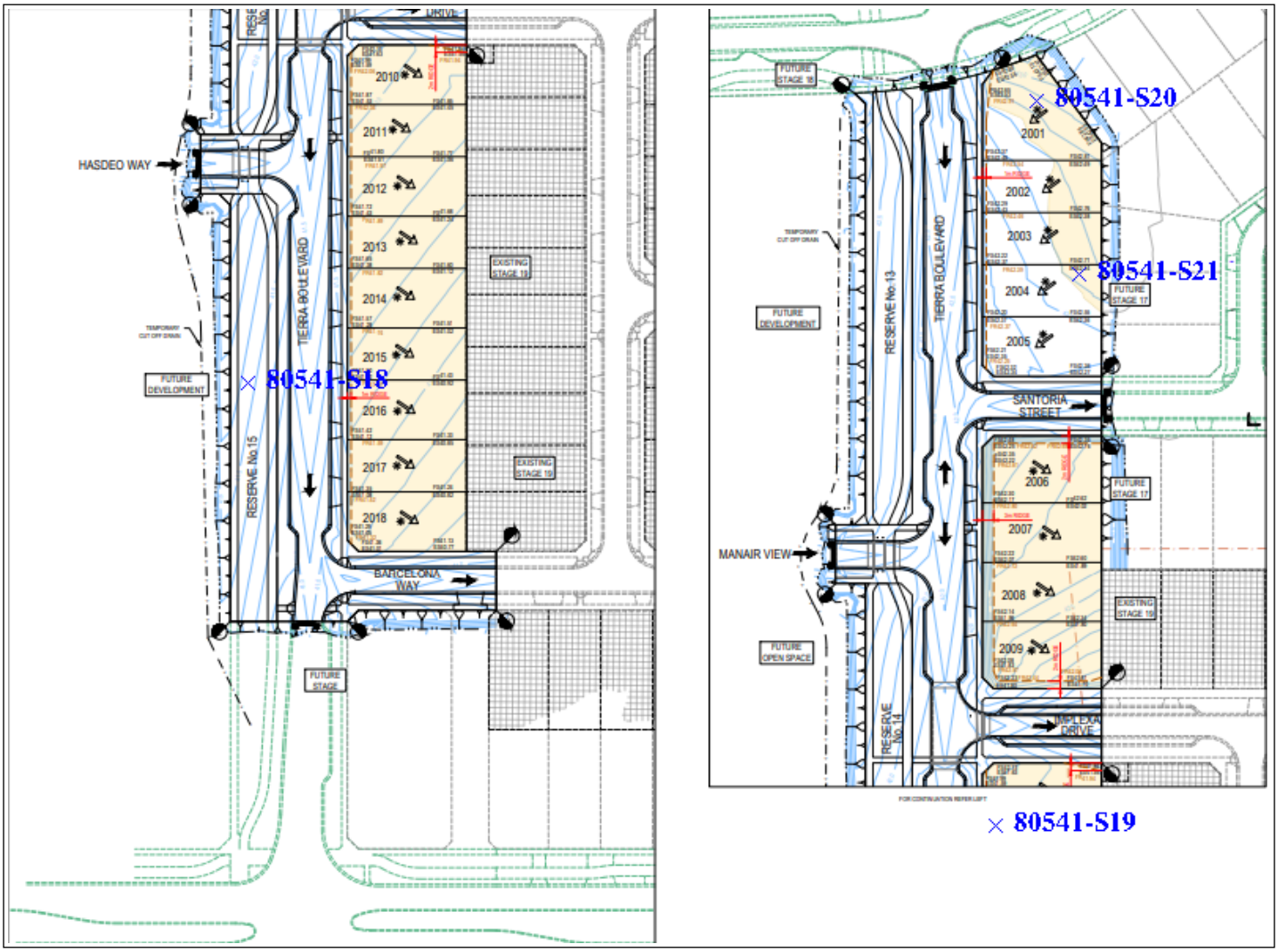
Report Number: **GS8054/1-5**
Issue Number: 1
Date Issued: 14/02/2025
Client: Winslow Constructors Pty Ltd
Lot 13, 6 Latchford Street, Cranbourne West VIC 3977
Contact: Ryan Spicer
Project Number: GS8054/1
Project Name: Alamora Estate – Stage 20 (Level 1)
Project Location: Tarneit
Work Request: 22330
Date Sampled: 11/02/2025 11:00
Dates Tested: 11/02/2025 - 13/02/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Tarneit
Material: Silty CLAY, low to medium plasticity, brown
Material Source: On Site

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	80541-S18	80541-S19	80541-S20	80541-S21
Date Tested	11/02/2025	11/02/2025	11/02/2025	11/02/2025
Time Tested	11:00	11:10	11:20	11:30
Test Request #/Location	Retest WR22233 S8	Retest WR22233 S9	Lot 2001	Lot 2004
Easting	292081	292010	292225	292201
Northing	5807896	5807826	5807974	5807938
Layer / Reduced Level	FSL	FSL	Layer 1	Layer 1
Thickness of Layer (mm)	150	150	150	150
Soil Description	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown	Silty CLAY, low to medium plasticity, brown
Test Depth (mm)	125	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	1	0	0	0
Field Wet Density (FWD) t/m^3	1.90	1.88	1.87	1.88
Field Moisture Content %	23.3	21.1	22.1	23.1
Field Dry Density (FDD) t/m^3	1.54	1.55	1.53	1.53
Peak Converted Wet Density t/m^3	**	1.83	1.84	1.82
Adjusted Peak Converted Wet Density t/m^3	1.85	**	**	**
Moisture Variation (Wv) %	**	4.5	3.0	3.0
Adjusted Moisture Variation %	3.0	**	**	**
Hilf Density Ratio (%)	**102.5**	**102.5**	**102.0**	**103.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

Ground Science Pty Ltd
Ground Science Laboratory
13 Brock Street Thomastown Victoria 3074
Phone: (03) 9464 4617
Email: troyt@groundscience.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Troy Thynne
Level 1 Coordinator / Laboratory 2IC

NATA Accredited Laboratory Number: 15055

Report Number:	**GS8054/1-6**
Issue Number:	1
Date Issued:	19/02/2025
Client:	Winslow Constructors Pty Ltd
	Lot 13, 6 Latchford Street, Cranbourne West VIC 3977
Contact:	Ryan Spicer
Project Number:	GS8054/1
Project Name:	Alamora Estate – Stage 20 (Level 1)
Project Location:	Tarneit
Work Request:	22393
Date Sampled:	13/02/2025 10:30
Dates Tested:	13/02/2025 - 17/02/2025
Sampling Method:	AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification:	95% Standard Compaction & +/- 3% Moisture Variation
Site Selection:	Selected by Client
Location:	Tarneit
Material:	Silty CLAY, low to medium plasticity, brown
Material Source:	On Site

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	80541-S22		
Date Tested	13/02/2025		
Time Tested	11:00		
Test Request #/Location	Retest WR22233 S9		
Easting	292010		
Northing	5807826		
Layer / Reduced Level	FSL		
Thickness of Layer (mm)	150		
Soil Description	Silty CLAY, low to medium plasticity, brown		
Test Depth (mm)	125		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	5		
Field Wet Density (FWD) t/m^3	1.82		
Field Moisture Content %	28.9		
Field Dry Density (FDD) t/m^3	1.41		
Peak Converted Wet Density t/m^3	**		
Adjusted Peak Converted Wet Density t/m^3	1.90		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	0.0		
Hilf Density Ratio (%)	**95.5**		
Compaction Method	**Standard**		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

APPENDIX C

Site Photographs


3 Feb 2025 10:09:33 am
37.85318616S 144.63588895E
GS8054/1 Alamora Estate – Stage 20 - Day 1


3 Feb 2025 10:32:29 am
37.85318903S 144.63578511E
GS8054/1 Alamora Estate – Stage 20 - Day 1


3 Feb 2025 2:32:11 pm
37.85375434S 144.63582899E
GS8054/1 Alamora Estate – Stage 20 - Day 1


4 Feb 2025 10:37:26 am
37°51'8.848"S 144°38'12.465"E
GS 8054/1 Alamora Estate, Stage 20 Level One, Tarneit
Day 2


5 Feb 2025 8:54:45 am
37.85187035S 144.63818881E
GS8054/1 Alamora Estate – Stage 20 - Day 3


6 Feb 2025 9:03:50 am
37.85309038S 144.63699302E
GS8054/1 Alamora Estate – Stage 20 - Day 4