

LEVEL ONE

Reference  
No.: 2172-209

SURVEILLANCE

AND INSPECTION REPORT

*Carried Out  
By*



PREPARED FOR: -

SYMON BROS. CONSTRUCTIONS PTY LTD



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Client Name: Symon Bros. Constructions Pty Ltd

Project Name: Mambourin Estate Stage 11

Date: 23<sup>rd</sup> of June 2022

Author: Mr. Sam Loza

Reference No.: 2172-209

Revision: 0

Project Manager: Mr. George Dimopoulos

### **1. Introduction & Scope**

At the request of Symon Bros. Constructions Pty Ltd, Geotechnical Laboratories has carried out inspection and testing of the above-mentioned site from the 3<sup>rd</sup> of July 2021 to the 8<sup>th</sup> of June 2022 where a residential development is being constructed. Inspection and testing of stripping, material quality and compaction control tests were carried out to comply with the requirements of AS 3798 Appendix B, Level 1.

The following documentation was submitted to Geotechnical Laboratories by Symon Bros. Constructions Pty Ltd and was used to determine compliance of earthworks in conjunction with the requirements of AS 3798 – 2007.

(1). Standard Face Plan Layout Drawing No. 305176R02 Rev. 1

General site works involved the placement of fill, using on-site derived clay, to bring the fill region to the required finished levels as indicated on the faceplan drawings.

### **2. Site Preparation**

Initial site inspections were undertaken on the 2<sup>nd</sup> of July 2021 confirming that selected areas to be filled were completely stripped of topsoil prior to filling. The brown silty topsoils had been stockpiled around the site for later removal off-site.

Proof roll inspections were performed throughout the project duration to ensure no significant soft areas were present prior to filling.

### **3. Fill Material**

It is understood that the fill material used was sourced from on-site excavations, mainly drainage trenches and road boxing. The material had been screened to remove any boulders.



The fill material is best described as a CLAY, brown, grey-brown, slightly moist to moist, slightly silty, medium to high plasticity with basalt gravels and cobbles.

The fill material is consistent with the naturally occurring soils for this region.

Source material was deemed a **Suitable Material** in accordance with guidelines set out in AS 3798 - 2007 Section 4.4.

#### **4. Fill Construction Procedure**

The following plant (but not always limited to) were engaged in the fill placement process:

- Highway trucks
- A watercart
- A sheepsfoot compactor (815)

The sheepsfoot compactor placed material in horizontal loose layers of approximately 250-300mm. The sheepsfoot compactor also performed compaction of the clay fill operating in a criss-cross pattern.

The moisture condition of the fill was closely monitored, and moisture conditioning procedures were applied to bring the material closer to its Standard Optimum Moisture Content (AS 1289 5.7.1).

#### **5. Compaction Control Testing**

Compaction control testing was performed on-site using a Nuclear Densometer in accordance with AS 1289 5.8.1. Laboratory reference densities were determined from material sampled at each test site location using the Hilf Rapid Compaction Method in accordance with AS 1289 5.7.1.

A total of thirty-two compaction tests were performed on the fill construction. Results are presented in Appendix B of this report.

#### **6. Testing Frequency**

Testing frequencies were in accordance with **AS 3798 - 2007 Table 8.1 for Large Scale Operations.**

Acceptance of fill layers for compaction was based on the requirements of **AS 3798 - 2007 Table 5.1 Item 1. Residential.**

As a result, the compliance criteria adopted by Geotechnical Laboratories was a hilf density ratio not less than 95 percent of the maximum hilf density value as determined by the Standard Hilf Rapid Compaction Method in accordance with AS 1289 5.7.1.



Test results indicate that the above-mentioned requirements have been successfully achieved.

No moisture criteria was specified.

### **7. Statement of Compliance**

So far as can be determined, Symon Bros. Constructions Pty Ltd has satisfactorily complied with the compaction and construction processes required for the structural filling of this site. As such, structural filling placed on this site by Symon Bros. Constructions Pty Ltd from the 3<sup>rd</sup> of July 2021 to the 8<sup>th</sup> of June 2022 can be categorised as CONTROLLED FILL in accordance with AS 2870-2011.

### **8. Limitations and Liability of this Report**

This report has been produced for and remains the property of Symon Bros. Constructions Pty Ltd.

The release of this report to a third party will only occur if Geotechnical Laboratories Pty Ltd has received, in writing, the authority to do so by our client.

Geotechnical Laboratories Pty Ltd will not engage in any third-party communication regarding this report.

Where information has been supplied by the client or third party, the assumption is made that this is correct. Geotechnical Laboratories Pty Ltd will not be held responsible for any inaccuracies supplied.

Test results and controlled fill compliance relates only to fill placed by Symon Bros. Constructions Pty Ltd and for earthworks completed at the time of inspection and testing. Any previous or subsequent earthworks will require a separate evaluation.

For & on behalf of  
Geotechnical Laboratories Pty Ltd.

Sam Loza  
Laboratory Manager.



LEVEL ONE  
SURVEILLANCE  
AND INSPECTION REPORT  
  
APPENDIX A







LEVEL ONE  
SURVEILLANCE  
AND INSPECTION REPORT  
  
APPENDIX B





**GEOTECHNICAL LABORATORIES**  
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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/166

LOCATION: SYMON BROS - Mambourin Stage 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
3/07/21	1	<b>Refer to #2182/167 for approx. test site locations.</b>	1.92	29.0	102.0	✱ 1.88	29.5	175	0.5 Drier	99.0	4	0	200
3/07/21	2		1.90	28.5	103.0	1.84	29.0	175	1.0 Drier	97.5	0	0	200
3/07/21	3		1.90	28.5	103.0	1.84	29.0	175	0.5 Drier	98.0	0	0	200
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 10.40am Finish Time: 10:55am

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation, Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✱ Indicates APCWD



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NATA Accredited Laboratory Number 14561

MICK CROWE  
(Approved Signatory)

Issue Date: 8/7/2021



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**CLIENT: SYMON BROS**

**LOCATION: Mambourin Estate Stage 11**

**Sketch indicating compaction test locations**

**DATE: 3/07/2021**

**OPERATOR: TI**

**SCALE: NTS**

**JOB No.: 2182/167**

**CHECKED: KK**

**FIGURE No: -**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/172

LOCATION: SYMON BROS - Mambourin Stage 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
7/07/21	1	<b>Refer to #2182/173 for approx. test site locations.</b>	2.00	19.5	98.5	✱ 2.03	21.5	175	2.0 Drier	90.0	9	0	300
7/07/21	2		2.06	19.5	103.0	✱ 2.00	20.5	175	1.0 Drier	95.5	6	0	300
7/07/21	3		2.05	19.5	102.0	✱ 2.00	22.0	175	2.0 Drier	90.0	6	0	300
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:25pm Finish Time: 12:55pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation, Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✱ Indicates APCWD



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MICK CROWE  
(Approved Signatory)

Issue Date: 9/7/2021





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### Sketch indicating compaction test locations

**SCALE: NTS**

**FIGURE No: -**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/176

LOCATION: SYMON BROS - Mambourin Stage 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
9/07/21	1	<b>Refer to #2182/177 for approx. test site locations.</b>	1.85	29.5	105.5	1.75	33.0	175	3.5 Drier	89.0	0	0	0
9/07/21	2		1.83	28.5	106.0	1.73	32.5	175	4.0 Drier	88.0	0	0	0
9/07/21	3		1.93	28.5	105.5	✱ 1.84	33.0	175	4.5 Drier	86.0	15	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 9:15am Finish Time: 9:35am

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✱ Indicates APCWD

❖



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**CLIENT: SYMON BROS**

**LOCATION: Mambourin Estate Stage 9, 10, 11**

**Sketch indicating compaction test locations**

**DATE: 9/07/2021**

**OPERATOR: TI**

**SCALE: NTS**

**JOB No.: 2182/177**

**CHECKED: KK**

**FIGURE No: -**





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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/178

LOCATION: SYMON BROS - Mambourin Stage 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
10/07/21	1	<b>Refer to #2182/179 for approx. test site locations.</b>	1.77	20.5	100.0	1.77	24.0	175	3.5 Drier	86.0	0	0	0
10/07/21	2		1.81	29.0	102.0	1.77	33.0	175	4.0 Drier	88.0	0	0	0
10/07/21	3		1.76	29.0	100.5	1.75	32.5	175	3.5 Drier	89.0	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 8:50am Finish Time: 9:15am

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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MICK CROWE  
(Approved Signatory)

Issue Date: 14/7/2021



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**CLIENT: SYMON BROS**

**LOCATION: Mambourin Estate Stage 9, 10, 11**

**Sketch indicating compaction test locations**

**DATE: 10/07/2021**

**OPERATOR: WD**

**SCALE: NTS**

**JOB No.: 2182/179**

**CHECKED: KK**

**FIGURE No: -**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/180

LOCATION: SYMON BROS - Mambourin Stage 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
13/07/21	1	<b><i>Refer to #2182/181 for approx. test site locations.</i></b>	1.79	25.5	102.5	1.74	30.0	175	4.5 Drier	85.0	0	0	0
13/07/21	2		1.81	28.5	105.0	1.72	32.5	175	4.0 Drier	88.0	0	0	0
13/07/21	3		1.81	30.0	106.0	1.70	34.5	175	4.5 Drier	87.0	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11:10am Finish Time: 11:55am

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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**MICK CROWE**  
(Approved Signatory)

Issue Date: 16/7/2021

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**CLIENT: SYMON BROS**

**LOCATION: Mambourin Estate Stage 9, 10, 11**

**Sketch indicating compaction test locations**

**DATE: 13/07/2021**

**OPERATOR: NE**

**SCALE: NTS**

**JOB No.: 2182/181**

**CHECKED: KK**

**FIGURE No: -**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/184

LOCATION: SYMON BROS - Mambourin Stage 10, 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
15/07/21	1	<b>Refer to #2182/185 for approx. test site locations.</b>	1.81	33.0	106.0	1.71	39.0	175	6.0 Drier	85.0	0	0	0
15/07/21	2		1.73	33.5	102.0	1.70	39.5	175	6.0 Drier	85.0	0	0	0
15/07/21	3		1.73	33.5	101.5	1.71	39.0	175	5.5 Drier	85.5	0	0	0
15/07/21	4		1.83	31.0	107.0	1.71	36.0	175	5.0 Drier	86.0	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11:00am Finish Time: 12:10pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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17025 - Testing

NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 19/7/2021





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**CLIENT: SYMON BROS**

**LOCATION: Mambourin Estate Stage 10, 11**

**Sketch indicating compaction test locations**

**DATE: 15/07/2021**

**OPERATOR: JC, VN**

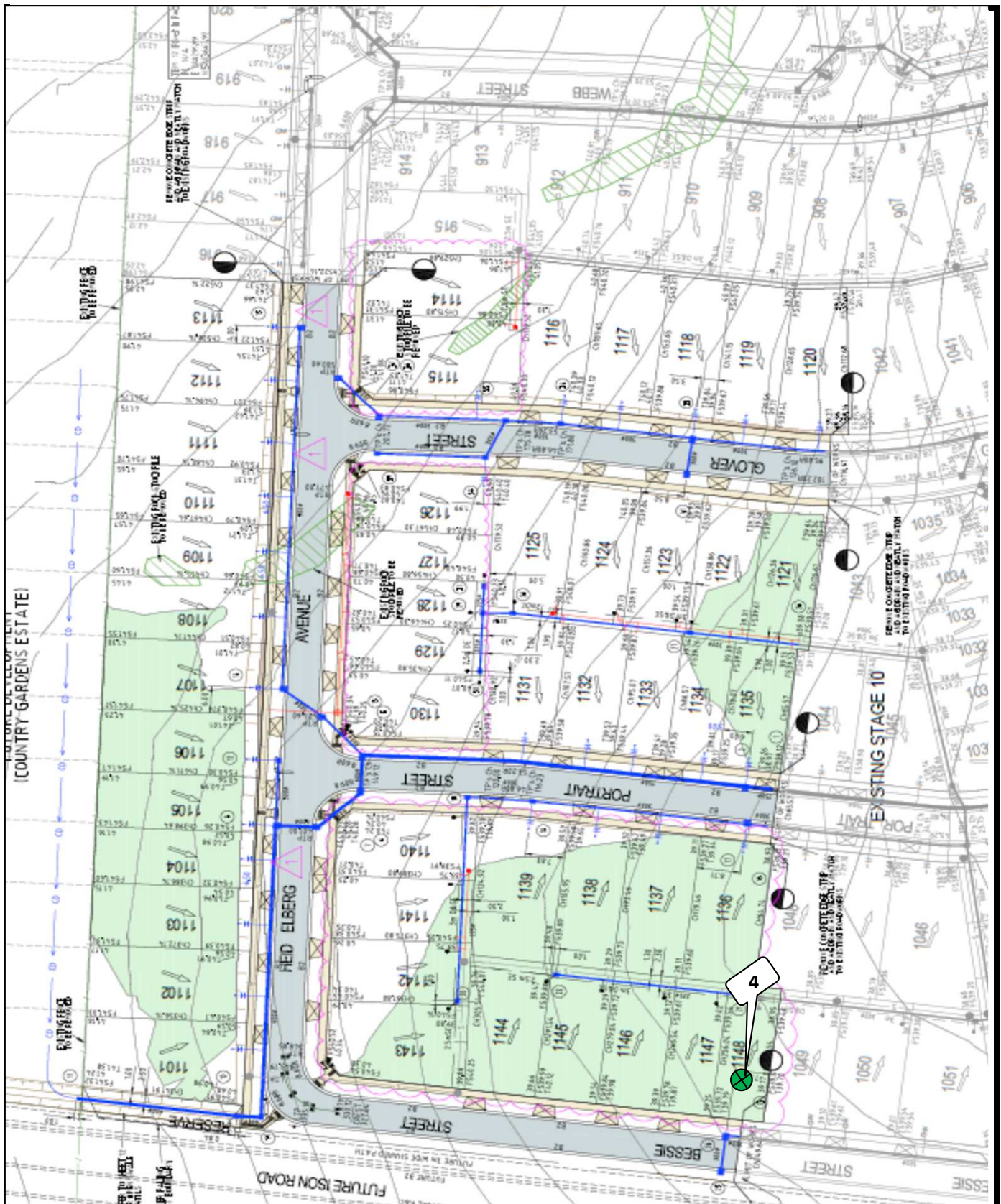
**SCALE: NTS**

**JOB No.: 2182/185**

**CHECKED: KK**

**FIGURE No: 1 of 2**





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**CLIENT: SYMON BROS**

**LOCATION: Mambourin Estate Stage 10, 11**

**Sketch indicating compaction test locations**

**DATE: 15/07/2021**

**OPERATOR: JC/VN**

**SCALE: NTS**

**JOB No.: 2182/185**

**CHECKED: KK**

**FIGURE No: 2 of 2**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/186

LOCATION: SYMON BROS - Mambourin Stage 10, 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
16/07/21	1	<b><i>Refer to #2182/187 for approx. test site locations.</i></b>	1.82	28.0	104.0	1.75	31.5	175	3.5 Drier	88.5	0	0	200
16/07/21	2		1.81	29.5	105.5	1.71	34.5	175	5.0 Drier	85.0	0	0	200
16/07/21	3		1.90	29.0	111.0	1.71	33.5	175	4.5 Drier	86.0	0	0	200
16/07/21	4		1.77	28.0	104.0	1.69	33.0	175	5.0 Drier	85.5	0	0	200
16/07/21	5		1.85	28.5	107.5	1.72	32.5	175	4.5 Drier	86.5	0	0	200
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 9.10am Finish Time: 10.00am

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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17025 - Testing

NATA Accredited Laboratory Number 14561

**MICK CROWE**  
 (Approved Signatory)

Issue Date: 20/7/2021





**GEOTECHNICAL  
LABORATORIES**

**GEOTECHNICAL LABORATORIES**

**ACN 102 571 077**

14 Ravenhall Way, Ravenhall, Vic 3023

Email: info@geolab.com.au PH: (03) 8361-9140

**CLIENT: SYMON BROS**

**LOCATION: Mambourin Estate Stage 10, 11**

**Sketch indicating compaction test locations**

**DATE: 16/07/2021**

**OPERATOR: TI**

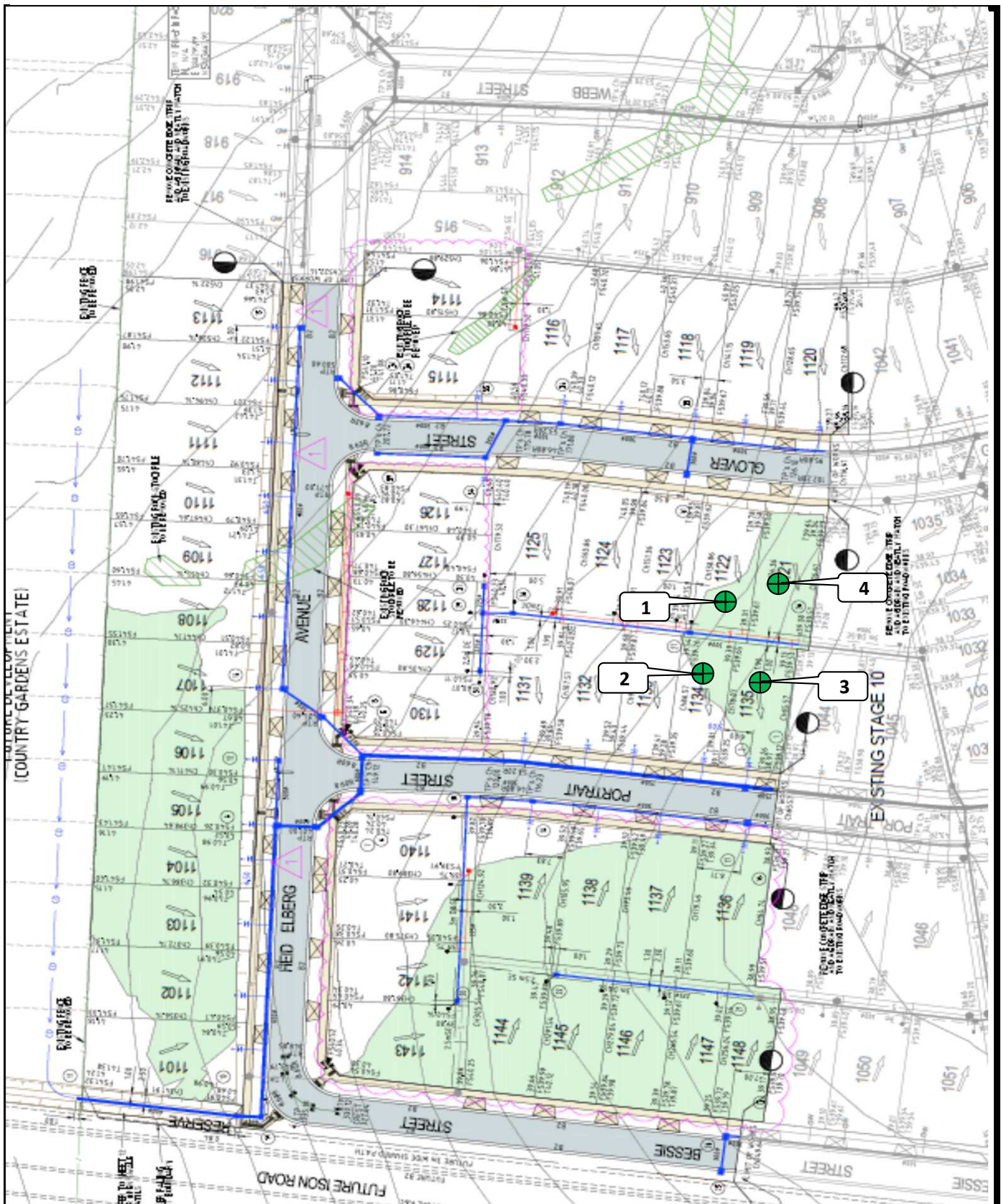
**SCALE: NTS**

**JOB No.: 2182/187**

**CHECKED: KK**

**FIGURE No: 1 of 2**







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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/432

LOCATION: SYMON BROS - Mambourin, Stage 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
27/04/22	1	<b><i>Refer to #2182/434 for approx. test site locations.</i></b>	1.78	30.0	95.5	1.86	30.0	175	0.0 Drier	100.0	0	0	0
27/04/22	2		1.75	32.5	95.5	1.84	32.0	175	0.5 Wetter	101.5	0	0	0
27/04/22	3		1.81	31.0	99.0	1.83	31.0	175	0.5 Wetter	101.0	0	0	0
27/04/22	4		1.79	30.5	98.0	1.83	30.5	175	0.5 Wetter	101.0	0	0	0
27/04/22	5		1.81	30.5	97.5	1.85	30.0	175	0.5 Wetter	101.0	0	0	0
27/04/22	6		1.79	33.0	96.5	1.85	31.5	175	1.5 Wetter	104.0	0	0	0

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:00pm Finish Time: 1:30pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 29/4/2022

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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/433

LOCATION: SYMON BROS - Mambourin, Stage 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
27/04/22	7	<b>Refer to #2182/434 for approx. test site locations.</b>	1.83	31.5	99.5	1.84	31.5	175	0.0 Drier	100.0	0	0	0
27/04/22	8		1.77	32.5	97.0	1.83	31.5	175	1.0 Wetter	102.5	0	0	0
27/04/22	9		1.81	31.5	98.5	1.84	31.0	175	0.5 Wetter	101.5	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:00pm Finish Time: 1:30pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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17025 - Testing

NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 29/4/2022







**GEOTECHNICAL LABORATORIES**  
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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2182/467

LOCATION: SYMON BROS - Mambourin - Stage 11

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
8/06/22	1	<b><i>Refer to #2182/468 for approx. test site locations.</i></b>	1.87	22.0	95.5	1.96	21.5	175	0.5 Wetter	102.5	0	0	0
8/06/22	2		1.89	23.0	95.0	2.00	23.0	175	0.0 Drier	100.0	0	0	0
8/06/22	3		1.97	24.0	97.0	2.03	22.0	175	1.5 Wetter	108.0	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.3.

Compaction specimens sampled after compaction.

Start Time: 8:00am Finish Time: 8:50am

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



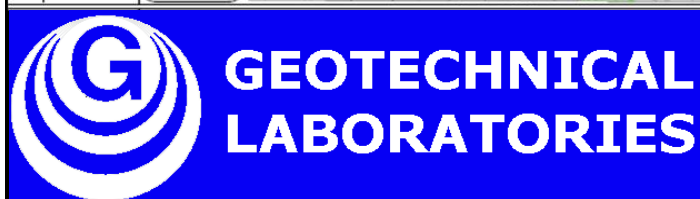
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NATA Accredited Laboratory Number 14561

**MICK CROWE**  
 (Approved Signatory)

Issue Date: 14/6/2022





**GEOTECHNICAL  
LABORATORIES**

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**ACN 102 571 077**

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Email: info@geolab.com.au PH: (03) 8361-9140

**CLIENT: SYMON BROS**

**LOCATION: Mambourin - Stage 11**

**Sketch indicating compaction test locations**

**DATE: 08/06/2022**

**OPERATOR: PV**

**SCALE: NTS**

**JOB No.: 2182/468**

**CHECKED: DM**

**FIGURE No: -**