

# Level One Compliance Report

---

## Bulk Earthworks Filling Operations Edens Crossing Stage 9A Redbank Plains

MAY 5, 2021

---

Prepared By

**MORRISON GEOTECHNIC PTY LTD**

Prepared for:

**Shadforths Civil**

Document Reference: 17662



**MORRISON**  
GEOTECHNIC

Brisbane Office  
Job No: DL21/031  
Ref No: 17662  
Author: R.Mitchell

5<sup>th</sup> May 2021

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen Qld 4556

**ATTENTION: MR LINCOLN REDGEN**  
Email: [Lincoln.Redgen@shadcivil.com.au](mailto:Lincoln.Redgen@shadcivil.com.au)  
Cc: [Michael.Pritchard@shadcivil.com.au](mailto:Michael.Pritchard@shadcivil.com.au)

Dear Sir,

**RE: LEVEL ONE COMPLIANCE REPORT FOR  
BULK EARTHWORKS FILLING OPERATIONS  
EDEN'S CROSSING ESTATE, STAGE 9A  
MT JULLERAT DRIVE, REDBANK PLAINS**

## Table of Contents

|   |   |
|---|---|
| <b>1.0 INTRODUCTION</b> .....   | 2 |
| 1.1 General.....  | 2 |
| 1.2 Previous Earthworks.....  | 3 |
| 1.3 The Project.....  | 3 |
| <b>2.0 THE BRIEF</b> .....  | 3 |
| <b>3.0 METHODOLOGY</b> .....  | 4 |
| 3.1 Stripped Surface Assessment.....                                    | 4 |
| 3.2 Filling Operations .....  | 4 |
| <b>4.0 STATEMENT OF COMPLIANCE</b> .....                                | 8 |
| <b>5.0 EXCLUSIONS</b> .....   | 8 |
| <b>6.0 LIMITATIONS</b> .....  | 8 |
| <b>ATTACHMENTS:</b> .....   | 9 |
| Appendix A – Site Plan Showing Test Locations .....                     | 9 |
| Appendix B – Laboratory Test Results Reports .....                      | 9 |
| Brochure – “Important Information About Your Geotechnical Report” ..... |   |



**1.0 INTRODUCTION**

**1.1 General**

This report presents results of Level One Earthworks Inspections and associated Compaction Compliance testing carried out on Earthworks Fill constructed to form Residential Lots and embankments below subgrade at Eden's Crossing Estate Stages 9A, Mount Juillerat Drive, Redbank Plains (The Site).

The work was commissioned by Mr. Lincoln Redgen representing Shadforth Civil Pty Ltd (The Client), using Purchase Order 2002-9E001.

Earthworks operations were constructed by The Client.

Earthworks filling operations were carried out intermittently between 8<sup>th</sup> March 2021 and 19<sup>th</sup> April 2021.

**Picture 1: Aerial View of the Site** (Image Source: Nearmap.com 25<sup>th</sup> April 2021)  
Approximate Stage Boundary shaded red



## **1.2 Previous Earthworks**

As far as could be reasonably determined onsite, no previous earthworks have taken place.

## **1.3 The Project**

The purpose for filling at The Site is to construct a Residential Subdivision which includes new pavements, residential building platforms and associated underground services.

KN Group Pty Ltd, Earthworks Contour Plan, Drawing No. 20-110-03 Revision A, dated December 2020, indicates the extents and thickness of fill to be constructed at The Site.

The plan is considered a reasonable representation of the fill covered by this report with the following exception: -

- At locations where potential reactive soils were exposed at the design earthworks levels, excavation below the design earthworks levels to approximately 1.2m below were carried out and replaced with fill of low reactivity.

The actual thickness of fill on an individual Lot can be obtained from the Developer as a Lot Disclosure Plan.

The Site is located with-in the Eden's Crossing Development and is bounded by future residential stages to the South, West, and existing residential developments to the North and East.

## **2.0 THE BRIEF**

The Brief from the Client was limited to:

- Level One Inspection and Testing of the placement and compaction of fill materials in accordance with AS3798 2007 – “Guidelines on Earthworks for Commercial and Residential Developments”,
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.1.
- Ipswich City Council Project Specifications
- Notes on KN Group Pty Ltd Earthworks Drawings.

Low reactive fill materials the was used as capping over potentially reactive soils was to generally conform to the following criteria: -

- Shrink Swell Index (Iss) – 1.5% Max.
- Particle Size Distribution:
  - Max Particle Size – 75mm
  - % passing 19mm – 80% Min.
  - % Passing 0.075mm - 10% Min.
- Plasticity:
  - Liquid Limit – 45% Max.
  - Plasticity Index – > 7% <20%
- Permeability -  $5 \times 10^{-7}$  m/s Max.

### **3.0 METHODOLOGY**

Earthworks Inspection and Testing was carried out on the stripped and exposed ground surfaces and during the placement and compaction of fill materials.

Field and laboratory testing included a walk over assessments of the existing ground conditions, observation of filling and compaction activities and field density testing using a nuclear soil moisture density gauge and Hilf compactions.

All work was carried out in accordance with AS 3798 (Guidelines on Earthworks for Commercial and Residential Developments) and AS1289 (Testing of Soils for Engineering Purposes).

Samples of the fill materials were collected and tested for conformance with the criteria presented in Section 2.

#### **3.1 Stripped Surface Assessment**

The fill areas at The Site were observed to be stripped and cleared of visible organic matter, deleterious, loose and unsuitable materials to depths exposing suitable natural ground.

Materials exposed after stripping and clearing the site which formed the natural foundation can be broadly summarised as:

- Natural - Silty Clay (CH) – At least very stiff, high plasticity, dark brown, traces of fine to medium grained sands, moist.
- Natural – Sandy Clay (CI) – at least very stiff, medium plasticity, pale brown mottled orange - red, fine to medium grained sand, traces of fine to medium gravel and moist.
- Natural – Basalt Rock (XW) – Extremely weathered, very low strength or better, red – brown – grey.

Following the stripped surface assessment of the fill areas, the natural foundation was approved for filling using the following process:

- Walk over assessments confirming that the competent ground was exposed.
- Proof roll testing using large sized truck carrying out multiple passes confirming no movement of the foundation.

#### **3.2 Filling Operations**

Fill materials were sourced from onsite cuts, road box excavations and trench excavations. Materials used as fill can be broadly summarized as: -

- Lower Fill Materials – Below 1.2m from the finished earthworks levels
  - Silty Clay, (CI), medium to high plasticity, dark brown, traces of fine to medium sand and moist.
  - Sandy Clay (CI), medium plasticity fines, red – brown, fine to coarse sand, traces of fine to medium gravel and moist.
- Capping Materials – Upper 1.2m of the fill profile imported from Select Sources Onsite.
  - Clayey Sand (SC), fine to coarse sand, yellow – orange – brown, medium plasticity fines, traces of fine to medium gravel, and moist.
  - Sandy Clay (CI), medium plasticity fines, yellow – brown – red, fine to coarse sand, and moist.



Picture 2: View of Stripping Operations



Picture 3: View of Pads at 1.2m Below FL



Samples of the capping materials were collected and testing generally conformed with the criteria presented in Section 2 and are summarised below in Table 1. Test reports are attached.

**Table 1 – Summary of Capping Materials Test Results.**

| Test Number | Particle Size % Passing |      |         | Plasticity Index % |    |     | Shrink Swell (%) |
|-------------|-------------------------|------|---------|--------------------|----|-----|------------------|
|             | 75mm                    | 19mm | 0.075mm | LL                 | PI | LS  |                  |
| D21-12471A  | 100                     | 83   | 17      | 33                 | 15 | 3.0 | N/A (*)          |
| D21-12479A  | 100                     | 100  | 17      | 32                 | 12 | 3.0 | N/A (*)          |
| D21-12479B  | 100                     | 100  | 16      | 31                 | 10 | 2.0 | N/A (*)          |
| D21-12479C  | 100                     | 100  | 18      | 29                 | 10 | 2.5 | N/A (*)          |

(\*) Shrink Swell testing was unable to be performed due to the low plasticity of the material. Unable to remould without the sample breaking down.

The tested materials generally conform to the specification with occasional outliers however are not considered to affect the performance of the fill. It is considered likely that the specification for permeability will be met based on the achieved test results.

Placement and compaction of the fill materials was carried out using the following plant:

- Dozer
- Excavators
- Pad foot Roller
- Water Truck
- Body Trucks
- Dump Trucks
- Grader
- Articulated Dump Trucks
- Compactor

The fill materials were moisture conditioned at the fill source and during placement to moisture contents suitable for compaction. Deleterious materials such as organics, sticks, roots and over size particles were sorted and removed during placement or were rejected for use.

Placement of the fill materials was carried out in layers appropriate for the above plant and compacted using the above plant carrying out multiple passes.

Our representative observed the filling process as described above and was assessed to be consistent for the entire thickness of fill.

Field density tests and laboratory compactions were carried out on the fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 (Guidelines on Earthworks for Commercial and Residential Developments) and tested to AS1289 test methods (Testing of Soils for Engineering Purposes). Testing achieved the required specification of 95% of the Hilf Density

Fill placed and compacted at measured density ratios less than 95% were tyned, moisture conditioned and re-compacted until the required specification was achieved. Retesting was carried out using Random Stratified Location methods.

The Location of the field density tests are shown on the Site Plan contained in Appendix A. These test locations and levels were not obtained by survey and therefore should only be considered as approximate.



Picture 4: View of Filling Operations



Picture 5: View of Filling Operations





#### **4.0 STATEMENT OF COMPLIANCE**

Our representatives observed the relevant earthworks operations including the stripped surface, fill placement and compaction operations and carried out field density tests and laboratory compaction tests in accordance with the required standard (AS3798, AS1289) and Specification. Testing achieved the required specification of 95% Standard at the test locations.

It is confirmed that Level One Inspection and Testing has been carried out on the earthworks fill to form the residential Lots and embankments below subgrade. Based on the observations made by our Geotechnicians and the results of the field and laboratory tests, the placed and compacted fill at the above project has, as far as we have been able to assess, been constructed in general accordance with the intent of AS3798 and the Specifications.

The fill can be deemed to be “controlled” in accordance with AS2870.

#### **5.0 EXCLUSIONS**

This statement does not include any topsoil, which may be placed for use as dressing, trench backfill or any other subsequent earthworks after 19<sup>th</sup> April 2021.

Assessments of material quality such as soaked CBR and site classifications are excluded from this commission.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 – 2007.

Footings and ground slabs for any structures constructed over natural soils or controlled fill should be designed to accommodate the characteristic ground surface movements and settlement potential.

Assessments of these design parameters are beyond the scope of this Report.

#### **6.0 LIMITATIONS**

This Report has been prepared by Morrison Geotechnic Pty Ltd (**Morrison Geotechnic**), and may include contributions from Morrison Geotechnic’s officers and employees, sub-contractors, sub-consultants or agents (**Contributors**).

This Report is for the sole benefit and use of Shadforth Civil Pty Ltd (**Client**), its designers, clients and relevant statutory authorities for the sole purpose of providing geotechnical advice and recommendations in respect of the Eden’s Crossing Estate, Stage 9A, Mount Juillerat Drive, Redbank Plains (**Project**). The Report is only intended to address those issues expressly described in the Brief/ Work Instructions in this Report.

This Report should not be used or relied upon for any other purpose without Morrison Geotechnic’s prior written consent. Morrison Geotechnic and the Contributors do not accept any responsibility or liability in any way whatsoever for the use or reliance of this Report by anyone other than Shadforth Civil (**Client**), its designers, its clients and relevant statutory authorities or by anyone else for any purpose other than that for which it has been prepared.

Except with Morrison Geotechnic’s prior written consent, this Report may not be:

- (a) released to any other party, whether in whole or in part (other than to the Client’s officers, employees, advisers, designers, clients and relevant statutory authorities);
- (b) used or relied upon by any other party.

Morrison Geotechnic and the Contributors do not accept any liability or responsibility whatsoever for, or in respect of, any use or reliance upon this Report by any other party. Morrison Geotechnic is not obliged to enter into discussions with any third party in respect of this Report.

The information (including technical information and information obtained through discussions) on which this report is based has been provided by the Client and third parties. Morrison Geotechnic and the Contributors:

- (a) have relied upon and presumed the accuracy of this information;
- (b) have not verified the accuracy or reliability of this information (other than as expressly stated in this Report);
- (c) have not made any independent investigations or enquiries in respect of those matters of which it has no actual knowledge at the time of giving this Report to the Client; and
- (d) make no warranty or guarantee, expressed or implied, as to the accuracy or reliability of this information.

Morrison Geotechnic and the Contributors do not accept responsibility or liability for any incorrect assumptions related to this Report. For the avoidance of doubt, this Report:

- (a) is not an environmental, contamination or hazardous materials assessment; may be invalid, incomplete or inaccurate (including errors in the scope of work, investigation methodology, observations, opinions and advice) where the information provided to Morrison Geotechnic was invalid, incomplete or inaccurate;
- (b) is limited to observations of those parts of the site described in Section 1.0.

No warranty or guarantee, whether express or implied, is made in respect of the geotechnical data, information, advice, opinions and recommendations present in this Report.

If further information becomes available, or additional assumptions need to be made, Morrison Geotechnic reserves its right to amend this Report.

If you have any queries regarding the above, please contact our Brisbane office.

Yours faithfully



**RHYS MITCHELL**

For and on behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

**ATTACHMENTS:**

Appendix A – Site Plan Showing Test Locations

Appendix B – Laboratory Test Reports





# Appendix A

---

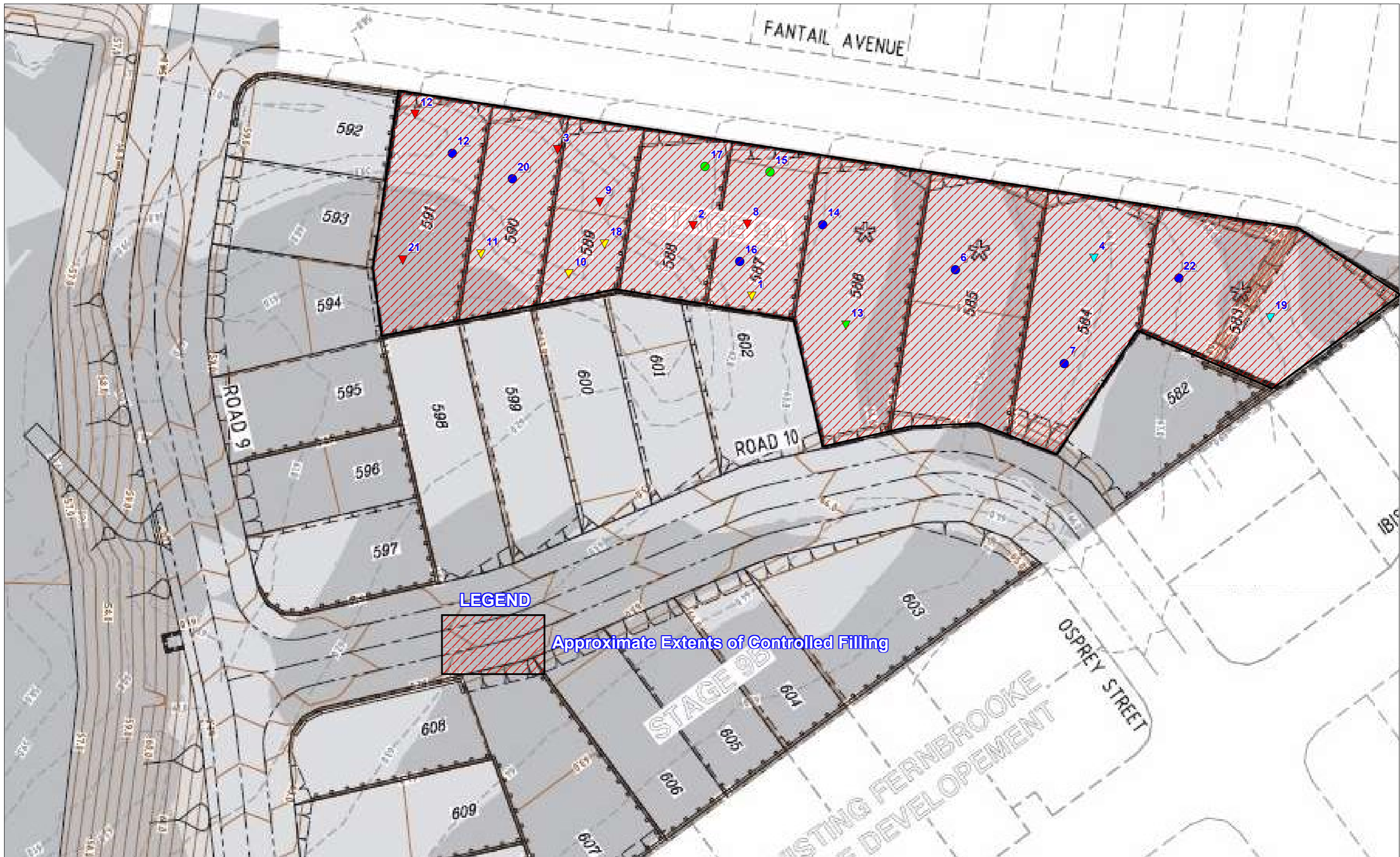
# Site Plan & Test Locations

---

MORRISON GEOTECHNIC PTY LTD







**LEGEND**



Approximate Extents of Controlled Filling



**MORRISON GEOTECHNIC PTY LTD**

ABN: 51 009 878 899

Unit 1/ 35 Limestone St, Darra 4076 Ph: 3279 0900  
 Email: brisbanelab@morrisongeo.com.au

Engineers: M.Ballard  
 D.Dragun  
 Geologists: R.Howchin  
 Laboratory: R.Mitchell & N.O'Haire

**LEGEND**

- ▼ R.L 58.0 - 59.99
- ▼ R.L 60.0 - 61.99
- ▼ R.L 62.0 - 63.99
- ▼ R.L 64.0 - 65.99
- ▼ R.L 66.0 - 70.0
- Final Level

|                   |  |              |               |
|-------------------|--|--------------|---------------|
| Map Description : | <b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b> |              |               |
| Client :          | SHADFORTH'S  |              |               |
| Project :         | <b>EDENS CROSSING - STAGE 9A</b>                             |              |               |
| Project No :      | DL21/031   | Drawing No : | DL21/031 - 01 |
|                   |  | Scale :      | Not to Scale  |





# Appendix B

---

# Laboratory Test Reports

---

MORRISON GEOTECHNIC PTY LTD



**MORRISON**  
GEOTECHNIC

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: l davidson@mgeo.com.au

**Report Number:** DL21/031-1  
**Issue Number:** 1  
**Date Issued:** 06/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12393  
**Date Sampled:** 31/03/2021  
**Dates Tested:** 31/03/2021 - 01/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Allotments  
**Material:** Allotment - General Fill  
**Material Source:** Onsite Silty Clay



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson  
 Senior Technician  
 NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                                     |                                     |                                     |
|--|-------------------------------------|-------------------------------------|-------------------------------------|
| Sample Number  | D21-12393A                          | D21-12393B                          | D21-12393C                          |
| Test Number  | 1                                   | 2                                   | 3                                   |
| Date Tested  | 31/03/2021                          | 31/03/2021                          | 31/03/2021                          |
| Time Tested  | 10:34                               | 10:40                               | 10:45                               |
| Test Request #/Location                              | 9A Allotments - Existing Drain Fill | 9A Allotments - Existing Drain Fill | 9A Allotments - Existing Drain Fill |
| Easting  | 484221                              | 484211                              | 474188                              |
| Northing   | 6940347                             | 6940359                             | 6940372                             |
| Elevation (m)  | 60.02                               | 59.36                               | 58.75                               |
| Soil Description                                     | Silty Clay                          | Silty Clay                          | Silty Clay                          |
| Test Depth (mm)                                      | 150                                 | 150                                 | 150                                 |
| Sieve used to determine oversize (mm)                | 19.0                                | 19.0                                | 19.0                                |
| Percentage of Wet Oversize (%)                       | 0                                   | 1                                   | 0                                   |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 1.77                                | 1.78                                | 1.70                                |
| Field Moisture Content %                             | 37.4                                | 35.2                                | 39.8                                |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.29                                | 1.32                                | 1.22                                |
| Peak Converted Wet Density t/m <sup>3</sup>          | 1.85                                | **                                  | 1.79                                |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                                  | 1.88                                | **                                  |
| Moisture Variation (Wv) %                            | -4.0                                | **                                  | -3.0                                |
| Adjusted Moisture Variation %                        | **                                  | -4.0                                | **                                  |
| Hilf Density Ratio (%)                               | <b>95.5</b>                         | <b>95.0</b>                         | <b>95.0</b>                         |
| Compaction Method                                    | <b>Standard</b>                     | <b>Standard</b>                     | <b>Standard</b>                     |
| Report Remarks                                       | **                                  | **                                  | **                                  |

**Moisture Variation Note:**

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC



# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: l davidson@mgeo.com.au

**Report Number:** DL21/031-2  
**Issue Number:** 1  
**Date Issued:** 06/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12394  
**Date Sampled:** 31/03/2021  
**Dates Tested:** 31/03/2021 - 01/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Lot 584  
**Material:** Allotment - Capping Fill  
**Material Source:** Stage 16 - Cut Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson  
 Senior Technician  
 NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                             |  |  |
|--|-----------------------------|--|--|
| Sample Number  | D21-12394A                  |  |  |
| Test Number  | 4                           |  |  |
| Date Tested  | 31/03/2021                  |  |  |
| Time Tested  | 10:55                       |  |  |
| Test Request #/Location                              | Lot 584 - Capping           |  |  |
| Easting  | 484279                      |  |  |
| Northing   | 6940353                     |  |  |
| Elevation (m)  | 66.200                      |  |  |
| Soil Description                                     | Gravelly Clayey Sand. Brown |  |  |
| Test Depth (mm)                                      | 150                         |  |  |
| Sieve used to determine oversize (mm)                | 19.0                        |  |  |
| Percentage of Wet Oversize (%)                       | 0                           |  |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 2.09                        |  |  |
| Field Moisture Content %                             | 12.3                        |  |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.86                        |  |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 2.09                        |  |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                          |  |  |
| Moisture Variation (Wv) %                            | 0.0                         |  |  |
| Adjusted Moisture Variation %                        | **                          |  |  |
| Hilf Density Ratio (%)                               | <b>99.5</b>                 |  |  |
| Compaction Method                                    | <b>Standard</b>             |  |  |
| Report Remarks                                       | **                          |  |  |

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

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: rmitchell@mgeo.com.au

**Report Number:** DL21/031-3  
**Issue Number:** 1  
**Date Issued:** 08/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12403  
**Date Sampled:** 01/04/2021  
**Dates Tested:** 01/04/2021 - 06/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Allotments 585, 584  
**Material:** Allotment Fill - Capping  
**Material Source:** Select Fill - Crushed Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell  
 Senior Technician

NATA Accredited Laboratory Number: 1169

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

|  | D21-12403A              | D21-12403B             |  |
|--|-------------------------|------------------------|--|
| Sample Number  |                         |                        |  |
| Test Number  | 6                       | 7                      |  |
| Date Tested  | 01/04/2021              | 01/04/2021             |  |
| Time Tested  | 12:30                   | 12:45                  |  |
| Test Request #/Location                              | Lot 585                 | Lot 584                |  |
| Easting  | 10m from North Boundary | 8m from South Boundary |  |
| Northing   | 5m from West Boundary   | 4m from East Boundary  |  |
| Layer / Reduced Level                                | F/L                     | 0.5m Below F/L         |  |
| Soil Description                                     | Crushed Sandstone       | Crushed Sandstone      |  |
| Test Depth (mm)                                      | 150                     | 150                    |  |
| Sieve used to determine oversize (mm)                | 19.0                    | 19.0                   |  |
| Percentage of Wet Oversize (%)                       | 0                       | 0                      |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 2.04                    | 2.13                   |  |
| Field Moisture Content %                             | 10.3                    | 10.3                   |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.85                    | 1.93                   |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 2.06                    | 2.06                   |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                      | **                     |  |
| Moisture Variation (Wv) %                            | 2.0                     | 2.5                    |  |
| Adjusted Moisture Variation %                        | **                      | **                     |  |
| Hilf Density Ratio (%)                               | <b>99.0</b>             | <b>103.0</b>           |  |
| Compaction Method                                    | <b>Standard</b>         | <b>Standard</b>        |  |
| Report Remarks                                       | **                      | **                     |  |

### Moisture Variation Note:

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC



# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: rmitchell@mgeo.com.au

**Report Number:** DL21/031-4  
**Issue Number:** 1  
**Date Issued:** 08/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12404  
**Date Sampled:** 01/04/2021  
**Dates Tested:** 01/04/2021 - 06/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Stage 9A Allotments - General Fill  
**Material:** Allotment Fill - General Fill  
**Material Source:** Onsite Clay



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell  
 Senior Technician

NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                                    |                                    |  |
|--|------------------------------------|------------------------------------|--|
| Sample Number  | D21-12404A                         | D21-12404B                         |  |
| Test Number  | 8                                  | 9                                  |  |
| Date Tested  | 01/04/2021                         | 01/04/2021                         |  |
| Time Tested  | 10:00                              | 10:10                              |  |
| Test Request #/Location                              | Gully/Drain in Allotment - Lot 587 | Gully/Drain in Allotment - Lot 589 |  |
| Easting  | 10m from North Boundary            | 11m from North Boundary            |  |
| Northing   | 4m from West Boundary              | 5m from West Boundary              |  |
| Layer / Reduced Level                                | 1.5m Below FL                      | 1.6m Below FL                      |  |
| Soil Description                                     | Silty Clay. Brown                  | Silty Clay. Brown                  |  |
| Test Depth (mm)                                      | 150                                | 150                                |  |
| Sieve used to determine oversize (mm)                | 19.0                               | 19.0                               |  |
| Percentage of Wet Oversize (%)                       | 0                                  | 0                                  |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 1.76                               | 1.77                               |  |
| Field Moisture Content %                             | 39.1                               | 36.7                               |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.27                               | 1.30                               |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 1.81                               | 1.83                               |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                                 | **                                 |  |
| Moisture Variation (Wv) %                            | -2.0                               | -2.0                               |  |
| Adjusted Moisture Variation %                        | **                                 | **                                 |  |
| Hilf Density Ratio (%)                               | <b>97.5</b>                        | <b>96.5</b>                        |  |
| Compaction Method                                    | <b>Standard</b>                    | <b>Standard</b>                    |  |
| Report Remarks                                       | **                                 | **                                 |  |

**Moisture Variation Note:**

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: l davidson@mgeo.com.au

**Report Number:** DL21/031-5  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Location entry error  
**Date Issued:** 04/05/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12433  
**Date Sampled:** 10/04/2021  
**Dates Tested:** 10/04/2021 - 12/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Allotments  
**Material:** Allotment Fill  
**Material Source:** Onsite - General Fill - Silty Clay



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson  
 Senior Technician

NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                 |                 |                 |
|--|-----------------|-----------------|-----------------|
| Sample Number  | D21-12433A      | D21-12433B      | D21-12433C      |
| Test Number  | 10              | 11              | 12              |
| Date Tested  | 10/04/2021      | 10/04/2021      | 10/04/2021      |
| Time Tested  | 08:36           | 08:41           | 08:47           |
| Test Request #/Location                              | Allotments      | Allotments      | Allotments      |
| Easting  | 484190          | 484153          | 484172          |
| Northing   | 6940351         | 6940380         | 6940373         |
| Elevation (m)  | 61.8            | 60.90           | 58.3            |
| Soil Description                                     | Silty Clay      | Silty Clay      | Silty Clay      |
| Test Depth (mm)                                      | 150             | 150             | 150             |
| 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 <sup>3</sup>             | 1.78            | 1.77            | 1.89            |
| Field Moisture Content %                             | 31.4            | 32.5            | 31.1            |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.35            | 1.34            | 1.44            |
| Peak Converted Wet Density t/m <sup>3</sup>          | 1.82            | 1.77            | 1.87            |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **              | **              | **              |
| Moisture Variation (Wv) %                            | 0.5             | 2.0             | 3.0             |
| Adjusted Moisture Variation %                        | **              | **              | **              |
| Hilf Density Ratio (%)                               | <b>97.5</b>     | <b>100.0</b>    | <b>101.0</b>    |
| Compaction Method                                    | <b>Standard</b> | <b>Standard</b> | <b>Standard</b> |
| Report Remarks                                       | **              | **              | **              |

**Moisture Variation Note:**

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC



# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-6  
**Issue Number:** 1  
**Date Issued:** 15/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12440  
**Date Sampled:** 12/04/2021  
**Dates Tested:** 12/04/2021 - 13/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Lot 586  
**Material:** Allotment - Capping Fill  
**Material Source:** Stage 16 Cut - Crushed Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                   |                   |  |
|--|-------------------|-------------------|--|
| Sample Number  | D21-12440A        | D21-12440B        |  |
| Test Number  | 13                | 14                |  |
| Date Tested  | 12/04/2021        | 12/04/2021        |  |
| Time Tested  | 10:35             | 13:05             |  |
| Test Request #/Location                              | Lot 586           | Lot 586           |  |
| Easting  | 484237            | 484233            |  |
| Northing   | 6940342           | 6940359           |  |
| Elevation (m)  | 63.30             | **                |  |
| Layer / Reduced Level                                | **                | Finish Level      |  |
| Soil Description                                     | Crushed Sandstone | Crushed Sandstone |  |
| Test Depth (mm)                                      | 150               | 150               |  |
| Sieve used to determine oversize (mm)                | 19.0              | 19.0              |  |
| Percentage of Wet Oversize (%)                       | **                | **                |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 2.06              | 2.01              |  |
| Field Moisture Content %                             | 9.5               | 10.7              |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.88              | 1.82              |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 2.07              | 2.08              |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                | **                |  |
| Moisture Variation (Wv) %                            | 3.0               | 2.5               |  |
| Adjusted Moisture Variation %                        | **                | **                |  |
| Hilf Density Ratio (%)                               | <b>99.5</b>       | <b>96.5</b>       |  |
| Compaction Method                                    | <b>Standard</b>   | <b>Standard</b>   |  |
| Report Remarks                                       | **                | **                |  |

**Moisture Variation Note:**

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-7  
**Issue Number:** 1  
**Date Issued:** 16/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12453  
**Date Sampled:** 13/04/2021  
**Dates Tested:** 13/04/2021 - 15/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Lot 587  
**Material:** Allotment Fill - Capping Layer  
**Material Source:** Stage 16 - Cut Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                   |                   |  |
|--|-------------------|-------------------|--|
| Sample Number  | D21-12453A        | D21-12453B        |  |
| Test Number  | 15                | 16                |  |
| Date Tested  | 13/04/2021        | 13/04/2021        |  |
| Time Tested  | 08:22             | 12:45             |  |
| Test Request #/Location                              | Lot 587           | Lot 587           |  |
| Easting  | 484224            | 484221            |  |
| Northing   | 6940368           | 6940349           |  |
| Elevation (m)  | 62.60             | **                |  |
| Layer / Reduced Level                                | **                | Finish Level      |  |
| Soil Description                                     | Crushed Sandstone | Crushed Sandstone |  |
| Test Depth (mm)                                      | 150               | 150               |  |
| Sieve used to determine oversize (mm)                | 19.0              | 19.0              |  |
| Percentage of Wet Oversize (%)                       | 0                 | 0                 |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 2.03              | 2.02              |  |
| Field Moisture Content %                             | 8.0               | 10.5              |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.88              | 1.82              |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 2.08              | 2.11              |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                | **                |  |
| Moisture Variation (Wv) %                            | 4.0               | 2.5               |  |
| Adjusted Moisture Variation %                        | **                | **                |  |
| Hilf Density Ratio (%)                               | <b>97.5</b>       | <b>95.5</b>       |  |
| Compaction Method                                    | <b>Standard</b>   | <b>Standard</b>   |  |
| Report Remarks                                       | **                | **                |  |

**Moisture Variation Note:**

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-8  
**Issue Number:** 1  
**Date Issued:** 16/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12469  
**Date Sampled:** 14/04/2021  
**Dates Tested:** 14/04/2021 - 15/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Allotment Fill - Capping  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                   |  |  |
|--|-------------------|--|--|
| Sample Number  | D21-12469A        |  |  |
| Test Number  | 17                |  |  |
| Date Tested  | 14/04/2021        |  |  |
| Time Tested  | 14:15             |  |  |
| Test Request #/Location                              | Lot 588           |  |  |
| Easting  | 484213            |  |  |
| Northing   | 6940369           |  |  |
| Elevation (m)  | 61.6              |  |  |
| Soil Description                                     | Crushed Sandstone |  |  |
| Test Depth (mm)                                      | 150               |  |  |
| Sieve used to determine oversize (mm)                | 19.0              |  |  |
| Percentage of Wet Oversize (%)                       | **                |  |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 2.07              |  |  |
| Field Moisture Content %                             | 8.7               |  |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.91              |  |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 2.12              |  |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                |  |  |
| Moisture Variation (Wv) %                            | 3.5               |  |  |
| Adjusted Moisture Variation %                        | **                |  |  |
| Hilf Density Ratio (%)                               | <b>97.5</b>       |  |  |
| Compaction Method                                    | <b>Standard</b>   |  |  |
| Report Remarks                                       | **                |  |  |

**Moisture Variation Note:**

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC



# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-9  
**Issue Number:** 1  
**Date Issued:** 19/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12477  
**Date Sampled:** 15/04/2021  
**Dates Tested:** 15/04/2021 - 16/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Allotment Fill - Capping  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                   |                   |  |
|--|-------------------|-------------------|--|
| Sample Number  | D21-12477A        | D21-12477B        |  |
| Test Number  | 18                | 19                |  |
| Date Tested  | 15/04/2021        | 15/04/2021        |  |
| Time Tested  | 10:30             | 10:38             |  |
| Test Request #/Location                              | Lot 589           | Lot 583           |  |
| Easting  | 484196            | 484316            |  |
| Northing   | 6940356           | 6940348           |  |
| Elevation (m)  | 61.2              | 69.9              |  |
| Soil Description                                     | Crushed Sandstone | Crushed Sandstone |  |
| Test Depth (mm)                                      | 150               | 150               |  |
| Sieve used to determine oversize (mm)                | 19.0              | 19.0              |  |
| Percentage of Wet Oversize (%)                       | 0                 | 0                 |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 2.02              | 2.00              |  |
| Field Moisture Content %                             | 8.7               | 10.4              |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.86              | 1.81              |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 2.07              | 2.06              |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                | **                |  |
| Moisture Variation (Wv) %                            | 3.0               | 2.5               |  |
| Adjusted Moisture Variation %                        | **                | **                |  |
| Hilf Density Ratio (%)                               | <b>97.5</b>       | <b>97.5</b>       |  |
| Compaction Method                                    | <b>Standard</b>   | <b>Standard</b>   |  |
| Report Remarks                                       | **                | **                |  |

**Moisture Variation Note:**

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-10  
**Issue Number:** 1  
**Date Issued:** 20/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12490  
**Date Sampled:** 16/04/2021  
**Dates Tested:** 16/04/2021 - 20/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Allotment Capping Fill  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Crushed Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                   |  |  |
|--|-------------------|--|--|
| Sample Number  | D21-12490A        |  |  |
| Test Number  | 20                |  |  |
| Date Tested  | 16/04/2021        |  |  |
| Time Tested  | 07:50             |  |  |
| Test Request #/Location                              | Lot 590           |  |  |
| Easting  | 484181            |  |  |
| Northing   | 6940372           |  |  |
| Layer / Reduced Level                                | Finish Level      |  |  |
| Soil Description                                     | Crushed Sandstone |  |  |
| Test Depth (mm)                                      | 150               |  |  |
| Sieve used to determine oversize (mm)                | 19.0              |  |  |
| Percentage of Wet Oversize (%)                       | 0                 |  |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 2.05              |  |  |
| Field Moisture Content %                             | 8.9               |  |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.88              |  |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 2.06              |  |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                |  |  |
| Moisture Variation (Wv) %                            | 2.0               |  |  |
| Adjusted Moisture Variation %                        | **                |  |  |
| Hilf Density Ratio (%)                               | <b>99.5</b>       |  |  |
| Compaction Method                                    | <b>Standard</b>   |  |  |
| Report Remarks                                       | **                |  |  |

**Moisture Variation Note:**

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: l davidson@mgeo.com.au

**Report Number:** DL21/031-11  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** Location entry error  
**Date Issued:** 04/05/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12511  
**Date Sampled:** 19/04/2021  
**Dates Tested:** 19/04/2021 - 21/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Location:** Allotment Fill - Capping  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16/18 - Cut Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson  
 Senior Technician  
 NATA Accredited Laboratory Number: 1169

| Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1     |                   |                   |  |
|--|-------------------|-------------------|--|
|  | D21-12511A        | D21-12511B        |  |
| Sample Number  |                   |                   |  |
| Test Number  | 21                | 22                |  |
| Date Tested  | 19/04/2021        | 19/04/2021        |  |
| Time Tested  | 07:30             | 07:37             |  |
| Test Request #/Location                              | Lot 591           | Lot 583           |  |
| Easting  | 494161            | 494293            |  |
| Northing   | 6940353           | 6940349           |  |
| Elevation (m)  | 59.2              | **                |  |
| Layer / Reduced Level                                | **                | Finish Level      |  |
| Soil Description                                     | Crushed Sandstone | Crushed Sandstone |  |
| Test Depth (mm)                                      | 150               | 150               |  |
| Sieve used to determine oversize (mm)                | 19.0              | 19.0              |  |
| Percentage of Wet Oversize (%)                       | 0                 | 0                 |  |
| Field Wet Density (FWD) t/m <sup>3</sup>             | 2.11              | 2.17              |  |
| Field Moisture Content %                             | 8.1               | 10.7              |  |
| Field Dry Density (FDD) t/m <sup>3</sup>             | 1.95              | 1.96              |  |
| Peak Converted Wet Density t/m <sup>3</sup>          | 2.14              | 2.18              |  |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | **                | **                |  |
| Moisture Variation (Wv) %                            | 2.5               | 1.5               |  |
| Adjusted Moisture Variation %                        | **                | **                |  |
| Hilf Density Ratio (%)                               | <b>98.5</b>       | <b>99.5</b>       |  |
| Compaction Method                                    | <b>Standard</b>   | <b>Standard</b>   |  |
| Report Remarks                                       | **                | **                |  |

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



# Material Test Report



**MORRISON  
GEOTECHNIC**

Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-12A  
**Issue Number:** 1  
**Date Issued:** 27/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12471  
**Sample Number:** D21-12471A  
**Date Sampled:** 14/04/2021  
**Dates Tested:** 14/04/2021 - 16/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by GTA  
**Sample Location:** Lot 588 E: 484206, N: 6940352, Depth: 62.0  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Crushed Sandstone

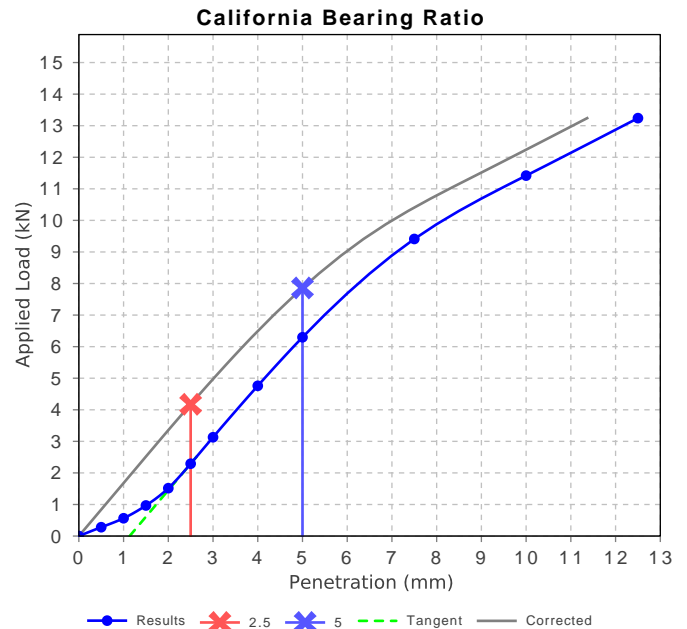
Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| California Bearing Ratio (AS 1289 6.1.1 & 2.1.1) |                       | Min | Max |
|--|-----------------------|-----|-----|
| CBR taken at                                     | 5 mm                  |     |     |
| CBR %  | 40                    |     |     |
| Method of Compactive Effort                      | Standard              |     |     |
| Method used to Determine MDD                     | AS 1289 5.1.1 & 2.1.1 |     |     |
| Method used to Determine Plasticity              | VISUAL                |     |     |
| Maximum Dry Density (t/m <sup>3</sup> )          | 1.88                  |     |     |
| Optimum Moisture Content (%)                     | 12.5                  |     |     |
| Laboratory Density Ratio (%)                     | 100.0                 |     |     |
| Laboratory Moisture Ratio (%)                    | 101.0                 |     |     |
| Dry Density after Soaking (t/m <sup>3</sup> )    | 1.88                  |     |     |
| Field Moisture Content (%)                       | 10.7                  |     |     |
| Moisture Content at Placement (%)                | 12.8                  |     |     |
| Moisture Content Top 30mm (%)                    | 13.5                  |     |     |
| Moisture Content Rest of Sample (%)              | 13.4                  |     |     |
| Mass Surcharge (kg)                              | 4.5                   |     |     |
| Soaking Period (days)                            | 4                     |     |     |
| Curing Hours                                     | 2                     |     |     |
| Swell (%)  | 0.0                   |     |     |
| Oversize Material (mm)                           | 19                    |     |     |
| Oversize Material Included                       | Excluded              |     |     |
| Oversize Material (%)                            | 1.5                   |     |     |



# Material Test Report



**MORRISON  
GEOTECHNIC**

Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: kpitama@mgeo.com.au

**Report Number:** DL21/031-12B  
**Issue Number:** 1  
**Date Issued:** 29/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12471  
**Sample Number:** D21-12471A  
**Date Sampled:** 14/04/2021  
**Dates Tested:** 14/04/2021 - 28/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by GTA  
**Sample Location:** Lot 588 E: 484206, N: 6940352, Depth: 62.0  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Crushed Sandstone



Accredited for compliance with ISO/IEC 17025 - Testing

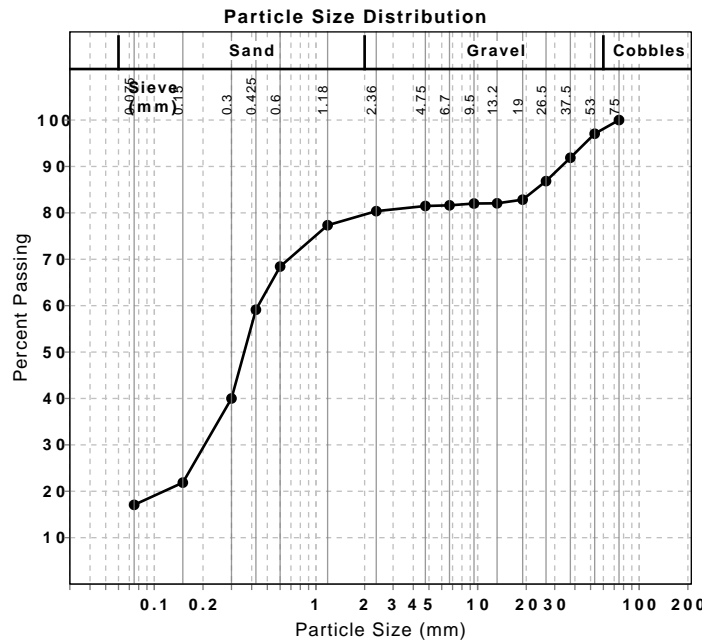
*K Pitama*

Approved Signatory: Kiri Pitama

Laboratory Technician

NATA Accredited Laboratory Number: 1169

| Particle Size Distribution (AS1289 3.6.1) |          |                |            |                 |
|---|----------|----------------|------------|-----------------|
| Sieve                                     | Passed % | Passing Limits | Retained % | Retained Limits |
| 75 mm                                     | 100      |                | 0          |                 |
| 53 mm                                     | 97       |                | 3          |                 |
| 37.5 mm                                   | 92       |                | 5          |                 |
| 26.5 mm                                   | 87       |                | 5          |                 |
| 19 mm                                     | 83       |                | 4          |                 |
| 13.2 mm                                   | 82       |                | 1          |                 |
| 9.5 mm                                    | 82       |                | 0          |                 |
| 6.7 mm                                    | 82       |                | 0          |                 |
| 4.75 mm                                   | 81       |                | 0          |                 |
| 2.36 mm                                   | 80       |                | 1          |                 |
| 1.18 mm                                   | 77       |                | 3          |                 |
| 0.6 mm                                    | 68       |                | 9          |                 |
| 0.425 mm                                  | 59       |                | 9          |                 |
| 0.3 mm                                    | 40       |                | 19         |                 |
| 0.15 mm                                   | 22       |                | 18         |                 |
| 0.075 mm                                  | 17       |                | 5          |                 |



| Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1) |            | Min | Max |
|--|------------|-----|-----|
| Sample History                                 | Oven Dried |     |     |
| Preparation Method                             | Dry Sieve  |     |     |
| Liquid Limit (%)                               | 33         |     |     |
| Plastic Limit (%)                              | 18         |     |     |
| <b>Plasticity Index (%)</b>                    | <b>15</b>  |     |     |
| Weighted Plasticity Index (%)                  | 887        |     |     |

| Linear Shrinkage (AS1289 3.4.1)  |               | Min | Max |
|----------------------------------|---------------|-----|-----|
| Moisture Condition Determined By | AS 1289.3.1.1 |     |     |
| Linear Shrinkage (%)             | 3.0           |     |     |
| Cracking Crumbling Curling       | Cracking      |     |     |

# Material Test Report



**MORRISON  
GEOTECHNIC**

Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-13A  
**Issue Number:** 1  
**Date Issued:** 27/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12479  
**Sample Number:** D21-12479A  
**Date Sampled:** 15/04/2021  
**Dates Tested:** 15/04/2021 - 20/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by GTA  
**Sample Location:** Lot 585 E: 484252, N: 6940336, Depth: Finish Level  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Sandstone

Accredited for compliance with ISO/IEC 17025 - Testing

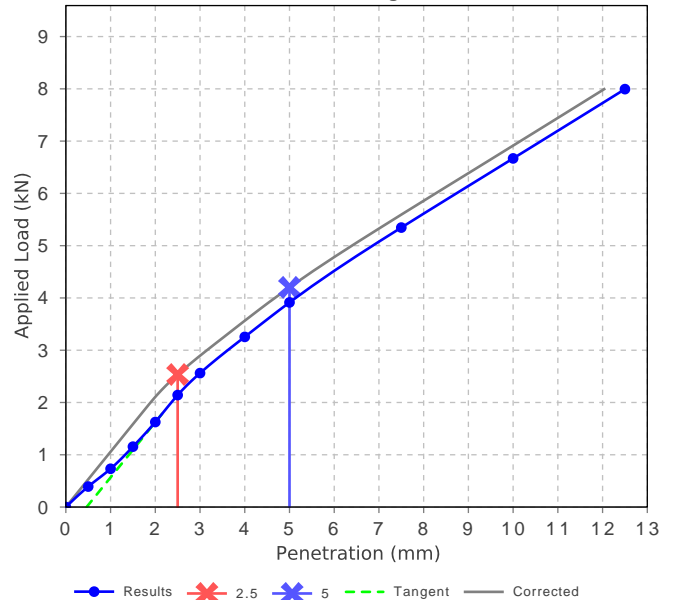


Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| California Bearing Ratio (AS 1289 6.1.1 & 2.1.1) |                       | Min | Max |
|--|-----------------------|-----|-----|
| CBR taken at                                     | 5 mm                  |     |     |
| CBR %  | 20                    |     |     |
| Method of Compactive Effort                      | Standard              |     |     |
| Method used to Determine MDD                     | AS 1289 5.1.1 & 2.1.1 |     |     |
| Method used to Determine Plasticity              | VISUAL                |     |     |
| Maximum Dry Density (t/m <sup>3</sup> )          | 1.84                  |     |     |
| Optimum Moisture Content (%)                     | 12.5                  |     |     |
| Laboratory Density Ratio (%)                     | 100.0                 |     |     |
| Laboratory Moisture Ratio (%)                    | 101.0                 |     |     |
| Dry Density after Soaking (t/m <sup>3</sup> )    | 1.83                  |     |     |
| Field Moisture Content (%)                       | 9.4                   |     |     |
| Moisture Content at Placement (%)                | 12.5                  |     |     |
| Moisture Content Top 30mm (%)                    | 13.1                  |     |     |
| Moisture Content Rest of Sample (%)              | 14.5                  |     |     |
| Mass Surcharge (kg)                              | 4.5                   |     |     |
| Soaking Period (days)                            | 4                     |     |     |
| Curing Hours                                     | 2                     |     |     |
| Swell (%)  | 0.5                   |     |     |
| Oversize Material (mm)                           | 19                    |     |     |
| Oversize Material Included                       | Excluded              |     |     |
| Oversize Material (%)                            | 0                     |     |     |

California Bearing Ratio





# Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-13B  
**Issue Number:** 1  
**Date Issued:** 27/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12479  
**Sample Number:** D21-12479B  
**Date Sampled:** 15/04/2021  
**Dates Tested:** 15/04/2021 - 20/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by GTA  
**Sample Location:** Lot 583 E: 484297, N: 6940355, Depth: Finish Level  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 26 Cut - Sandstone

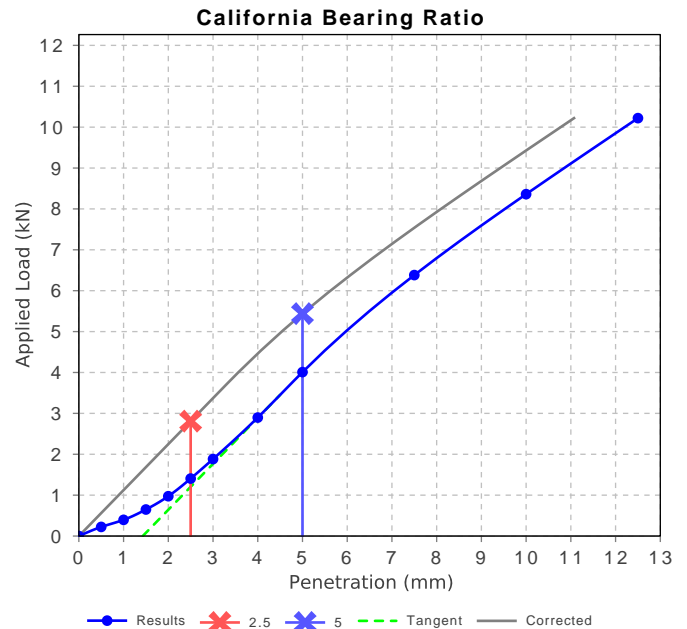
Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| California Bearing Ratio (AS 1289 6.1.1 & 2.1.1) |                       | Min | Max |
|--|-----------------------|-----|-----|
| CBR taken at                                     | 5 mm                  |     |     |
| CBR %  | 25                    |     |     |
| Method of Compactive Effort                      | Standard              |     |     |
| Method used to Determine MDD                     | AS 1289 5.1.1 & 2.1.1 |     |     |
| Method used to Determine Plasticity              | VISUAL                |     |     |
| Maximum Dry Density (t/m <sup>3</sup> )          | 1.81                  |     |     |
| Optimum Moisture Content (%)                     | 14.5                  |     |     |
| Laboratory Density Ratio (%)                     | 99.5                  |     |     |
| Laboratory Moisture Ratio (%)                    | 103.0                 |     |     |
| Dry Density after Soaking (t/m <sup>3</sup> )    | 1.81                  |     |     |
| Field Moisture Content (%)                       | 10.1                  |     |     |
| Moisture Content at Placement (%)                | 14.8                  |     |     |
| Moisture Content Top 30mm (%)                    | 14.6                  |     |     |
| Moisture Content Rest of Sample (%)              | 14.6                  |     |     |
| Mass Surcharge (kg)                              | 4.5                   |     |     |
| Soaking Period (days)                            | 4                     |     |     |
| Curing Hours                                     | 2.1                   |     |     |
| Swell (%)  | 0.0                   |     |     |
| Oversize Material (mm)                           | 19                    |     |     |
| Oversize Material Included                       | Excluded              |     |     |
| Oversize Material (%)                            | 0                     |     |     |



# Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: nathaniel@mgeo.com.au

**Report Number:** DL21/031-13C  
**Issue Number:** 1  
**Date Issued:** 27/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12479  
**Sample Number:** D21-12479C  
**Date Sampled:** 15/04/2021  
**Dates Tested:** 15/04/2021 - 20/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by GTA  
**Sample Location:** Lot 589 E: 484193, N: 6940371, Depth: Finish Level  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Sandstone

Accredited for compliance with ISO/IEC 17025 - Testing

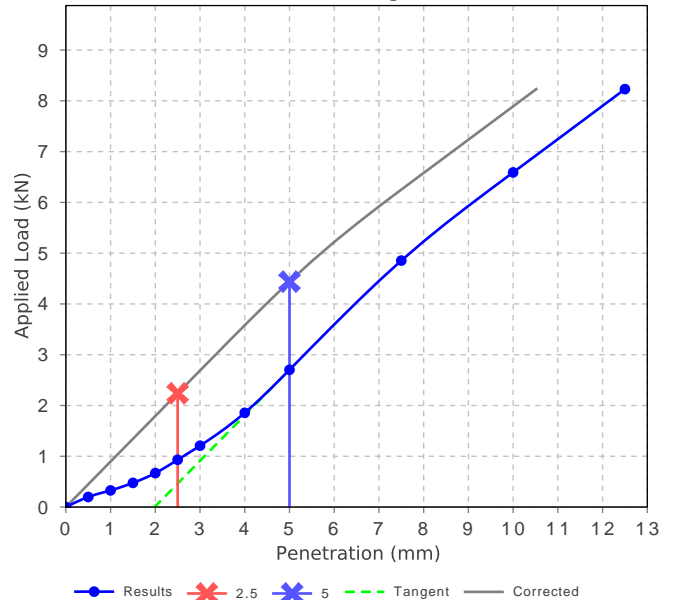


Approved Signatory: Nathaniel O'Haire  
 Branch Manager

NATA Accredited Laboratory Number: 1169

| California Bearing Ratio (AS 1289 6.1.1 & 2.1.1) |                       | Min | Max |
|--|-----------------------|-----|-----|
| CBR taken at                                     | 5 mm                  |     |     |
| CBR %  | 20                    |     |     |
| Method of Compactive Effort                      | Standard              |     |     |
| Method used to Determine MDD                     | AS 1289 5.1.1 & 2.1.1 |     |     |
| Method used to Determine Plasticity              | VISUAL                |     |     |
| Maximum Dry Density (t/m <sup>3</sup> )          | 1.84                  |     |     |
| Optimum Moisture Content (%)                     | 14.0                  |     |     |
| Laboratory Density Ratio (%)                     | 100.0                 |     |     |
| Laboratory Moisture Ratio (%)                    | 100.5                 |     |     |
| Dry Density after Soaking (t/m <sup>3</sup> )    | 1.84                  |     |     |
| Field Moisture Content (%)                       | 10.4                  |     |     |
| Moisture Content at Placement (%)                | 14.3                  |     |     |
| Moisture Content Top 30mm (%)                    | 14.5                  |     |     |
| Moisture Content Rest of Sample (%)              | 14.4                  |     |     |
| Mass Surcharge (kg)                              | 4.5                   |     |     |
| Soaking Period (days)                            | 4                     |     |     |
| Curing Hours                                     | 2                     |     |     |
| Swell (%)  | 0.0                   |     |     |
| Oversize Material (mm)                           | 19                    |     |     |
| Oversize Material Included                       | Excluded              |     |     |
| Oversize Material (%)                            | 0                     |     |     |

California Bearing Ratio



# Material Test Report



**MORRISON  
GEOTECHNIC**

Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: kpitama@mgeo.com.au

**Report Number:** DL21/031-13D  
**Issue Number:** 1  
**Date Issued:** 29/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12479  
**Sample Number:** D21-12479A  
**Date Sampled:** 15/04/2021  
**Dates Tested:** 15/04/2021 - 28/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by GTA  
**Sample Location:** Lot 585 E: 484252, N: 6940336, Depth: Finish Level  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Sandstone

Accredited for compliance with ISO/IEC 17025 - Testing



*K Pitama*

Approved Signatory: Kiri Pitama

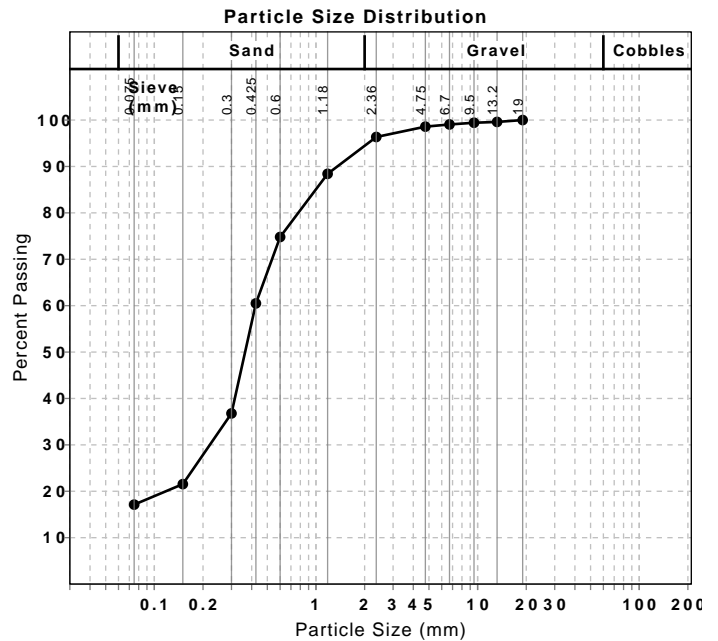
Laboratory Technician

NATA Accredited Laboratory Number: 1169

| Particle Size Distribution (AS1289 3.6.1) |          |                |            |                 |
|---|----------|----------------|------------|-----------------|
| Sieve                                     | Passed % | Passing Limits | Retained % | Retained Limits |
| 19 mm                                     | 100      |                | 0          |                 |
| 13.2 mm                                   | 100      |                | 0          |                 |
| 9.5 mm                                    | 99       |                | 0          |                 |
| 6.7 mm                                    | 99       |                | 0          |                 |
| 4.75 mm                                   | 99       |                | 0          |                 |
| 2.36 mm                                   | 96       |                | 2          |                 |
| 1.18 mm                                   | 88       |                | 8          |                 |
| 0.6 mm                                    | 75       |                | 14         |                 |
| 0.425 mm                                  | 60       |                | 14         |                 |
| 0.3 mm                                    | 37       |                | 24         |                 |
| 0.15 mm                                   | 22       |                | 15         |                 |
| 0.075 mm                                  | 17       |                | 4          |                 |

| Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1) |            | Min | Max |
|--|------------|-----|-----|
| Sample History                                 | Oven Dried |     |     |
| Preparation Method                             | Dry Sieve  |     |     |
| Liquid Limit (%)                               | 32         |     |     |
| Plastic Limit (%)                              | 20         |     |     |
| <b>Plasticity Index (%)</b>                    | <b>12</b>  |     |     |
| Weighted Plasticity Index (%)                  | 726        |     |     |

| Linear Shrinkage (AS1289 3.4.1)  |               | Min | Max |
|----------------------------------|---------------|-----|-----|
| Moisture Condition Determined By | AS 1289.3.1.1 |     |     |
| Linear Shrinkage (%)             | 3.0           |     |     |
| Cracking Crumbling Curling       | Cracking      |     |     |





# Material Test Report



**MORRISON  
GEOTECHNIC**

Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: kpitama@mgeo.com.au

**Report Number:** DL21/031-13E  
**Issue Number:** 1  
**Date Issued:** 29/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12479  
**Sample Number:** D21-12479B  
**Date Sampled:** 15/04/2021  
**Dates Tested:** 15/04/2021 - 28/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by GTA  
**Sample Location:** Lot 583 E: 484297, N: 6940355, Depth: Finish Level  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 26 Cut - Sandstone

Accredited for compliance with ISO/IEC 17025 - Testing



*K Pitama*

Approved Signatory: Kiri Pitama

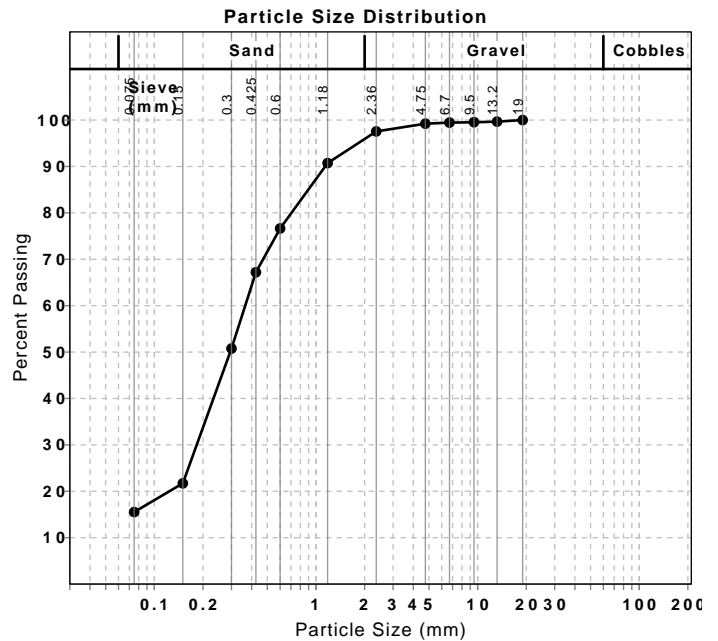
Laboratory Technician

NATA Accredited Laboratory Number: 1169

| Particle Size Distribution (AS1289 3.6.1) |          |                |            |                 |
|---|----------|----------------|------------|-----------------|
| Sieve                                     | Passed % | Passing Limits | Retained % | Retained Limits |
| 19 mm                                     | 100      |                | 0          |                 |
| 13.2 mm                                   | 100      |                | 0          |                 |
| 9.5 mm                                    | 100      |                | 0          |                 |
| 6.7 mm                                    | 99       |                | 0          |                 |
| 4.75 mm                                   | 99       |                | 0          |                 |
| 2.36 mm                                   | 98       |                | 2          |                 |
| 1.18 mm                                   | 91       |                | 7          |                 |
| 0.6 mm                                    | 77       |                | 14         |                 |
| 0.425 mm                                  | 67       |                | 9          |                 |
| 0.3 mm                                    | 51       |                | 16         |                 |
| 0.15 mm                                   | 22       |                | 29         |                 |
| 0.075 mm                                  | 16       |                | 6          |                 |

| Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1) |            | Min | Max |
|--|------------|-----|-----|
| Sample History                                 | Oven Dried |     |     |
| Preparation Method                             | Dry Sieve  |     |     |
| Liquid Limit (%)                               | 31         |     |     |
| Plastic Limit (%)                              | 21         |     |     |
| <b>Plasticity Index (%)</b>                    | <b>10</b>  |     |     |
| Weighted Plasticity Index (%)                  | 672        |     |     |

| Linear Shrinkage (AS1289 3.4.1)  |               | Min | Max |
|----------------------------------|---------------|-----|-----|
| Moisture Condition Determined By | AS 1289.3.1.1 |     |     |
| Linear Shrinkage (%)             | 2.0           |     |     |
| Cracking Crumbling Curling       | Cracking      |     |     |



# Material Test Report



**MORRISON  
GEOTECHNIC**

Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: kpitama@mgeo.com.au

**Report Number:** DL21/031-13F  
**Issue Number:** 1  
**Date Issued:** 29/04/2021  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Project Number:** DL21/031  
**Project Name:** LEVEL 1 SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 9A  
**Client Reference:** 2002-9E001  
**Work Request:** 12479  
**Sample Number:** D21-12479C  
**Date Sampled:** 15/04/2021  
**Dates Tested:** 15/04/2021 - 28/04/2021  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Site Selection:** Selected by GTA  
**Sample Location:** Lot 589 E: 484193, N: 6940371, Depth: Finish Level  
**Material:** Allotment Fill - Capping  
**Material Source:** Stage 16 Cut - Sandstone

Accredited for compliance with ISO/IEC 17025 - Testing



*K Pitama*

Approved Signatory: Kiri Pitama

Laboratory Technician

NATA Accredited Laboratory Number: 1169

| Particle Size Distribution (AS1289 3.6.1) |          |                |            |                 |
|---|----------|----------------|------------|-----------------|
| Sieve                                     | Passed % | Passing Limits | Retained % | Retained Limits |
| 26.5 mm                                   | 100      |                | 0          |                 |
| 19 mm                                     | 100      |                | 0          |                 |
| 13.2 mm                                   | 97       |                | 2          |                 |
| 9.5 mm                                    | 97       |                | 1          |                 |
| 6.7 mm                                    | 96       |                | 1          |                 |
| 4.75 mm                                   | 96       |                | 0          |                 |
| 2.36 mm                                   | 94       |                | 2          |                 |
| 1.18 mm                                   | 88       |                | 5          |                 |
| 0.6 mm                                    | 79       |                | 9          |                 |
| 0.425 mm                                  | 69       |                | 10         |                 |
| 0.3 mm                                    | 46       |                | 23         |                 |
| 0.15 mm                                   | 23       |                | 23         |                 |
| 0.075 mm                                  | 18       |                | 5          |                 |

| Atterberg Limit (AS1289 3.1.1 & 3.2.1 & 3.3.1) |            | Min | Max |
|--|------------|-----|-----|
| Sample History                                 | Oven Dried |     |     |
| Preparation Method                             | Dry Sieve  |     |     |
| Liquid Limit (%)                               | 29         |     |     |
| Plastic Limit (%)                              | 19         |     |     |
| <b>Plasticity Index (%)</b>                    | <b>10</b>  |     |     |
| Weighted Plasticity Index (%)                  | 691        |     |     |

| Linear Shrinkage (AS1289 3.4.1)  |               | Min | Max |
|----------------------------------|---------------|-----|-----|
| Moisture Condition Determined By | AS 1289.3.1.1 |     |     |
| Linear Shrinkage (%)             | 2.5           |     |     |
| Cracking Crumbling Curling       | Cracking      |     |     |

