



EARTHWORKS CERTIFICATION  
LEVEL 1 INSPECTION & TESTING PROGRAM

Courtney Drive  
Upper Coomera

HB Land

October 2025

PG-4116-A

E: [info@pacgeo.com.au](mailto:info@pacgeo.com.au)  
[www.pacgeo.com.au](http://www.pacgeo.com.au)

ABN: 62 615 248 952

Ref: PG-4116-A, 2025-09-23, LVR VER 1 (Stage 4)  
Author: Ben Elsmore

21<sup>st</sup> October, 2025

HB Land

Email: [pj@hbland.com.au](mailto:pj@hbland.com.au)

CC: [ursulaw@urbansolutions.net.au](mailto:ursulaw@urbansolutions.net.au)

**ATTN: PETER JOHNSON**

Dear Sir,

**EARTHWORKS CERTIFICATION - LEVEL 1 INSPECTION & TESTING PROGRAM –  
PROPOSED RESIDENTIAL DEVELOPMENT – STAGE 4 - COURTNEY DRIVE,  
UPPER COOMERA**

**1.0 INTRODUCTION**

This report summarises the results of the Level 1 Geotechnical Inspection and Testing program carried out by Pacific Geotech Pty Ltd at the above site between May 2024 and March 2025 during the bulk earthworks program.

The scope of the geotechnical services provided comprised the following:

- Assessment of the stripped surface prior to filling.
- General removal of organics and deleterious materials from the stripped surface and transported fill material.
- Assessment and associated supervision of the removal of unsuitable material.
- Supervision and associated nuclear densometer testing of the placed fill material.

The fill material comprised of a sandy clay, gravelly clay and clayey sandy gravel fill won for onsite excavations and was generally free of organics, deleterious material and oversized particles. Due to the nature of the rock fill, some over-sized particles are present within the fill.

Supervision was generally carried out by Dave Trotman and Ian Masman of our office.

The cut (red) and fill (blue) areas are shown in Figure 1 below.



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**FIGURE 1 – CUT FILL PLAN (STAGE 4)**



## **2.0 LEVEL 1 INSPECTION & TESTING PROGRAM**

### ***2.1 Project Specifications***

The engineering inspection and testing program was carried out in general accordance with AS 3798-2007, 'Guidelines on earthworks for commercial and residential developments', Sections 8.2, 'Level 1 Inspection and Testing'.

Project compaction criteria for the earthworks adopted are summarised in Table 1.

**TABLE 1 PROJECT COMPACTION SPECIFICATION**

Location	Minimum Dry Density Ratio (%)	Moisture Specification
General Development Area	95	±2% of OMC
Behind Retaining Walls	95	±2% of OMC
Note: The recommended compaction is a percentage of the Maximum Dry Density determined by Australian Standard 1289 5.1.1 (Standard Compaction).		

## **2.2 Compaction Methodology**

Compaction was generally carried out using the combination of a 12 tonne to 15 tonne, vibratory pad foot roller and a Cat 815 compactor.

Initially, general fill layers of approximately 300mm to 400mm (loose) layer thickness were placed. As the material became coarser and more difficult to break down, the fill layers were initially reduced to 150mm to 200mm loose layer thickness in order to more readily identify and remove or otherwise breakdown the over-sized rock particles. The fill layers then increased back to 300mm to 400mm resulting in an increase in oversize material within the fill mass. This is not to say the soil profile is not fit for purpose, just that some oversize material is present within the fill.

Proof rolling carried out at each fill later and at the completion of backfill works, generally indicated no appreciable movement. Areas which displayed excessive movement were generally reworked and a subsequent proof roll carried out.

## **2.3 Field Density Testing**

Compaction control testing was carried out by nuclear field density testing (test method AS1289 5.8.1). Testing was carried out at a frequency in general accordance with AS 3798-2007, Table 8.1 'Frequency of Field Density Tests'. A total of 24 tests were undertaken during the backfill works within these Lots (including retests).

Typically, due to the coarse nature of the fill material, 'B' moulds were used to undertake the laboratory compaction tests in accordance with AS 1289.

The density test results are presented on the Dry Density Ratio Reports. The reports detail the test number, the date of the test, the location of the test and the relative level of the test location together with the test results.

It should be further noted that the moisture variation of several test results is outside specification. Attempts were made to recondition this material during the works to approximate OMC.

The reports are identified by the following report numbers. It should be noted that the attached test reports contain test results from Stage 5 as well as Stage 4. This is due to the bulk earthworks for Stages 4 and 5 being carried out concurrently.

**TABLE 2 TEST REPORT SUMMARY**

Report Number	Sample Number	Location	Date of Test	Dry Density Ratio (%)	Moisture Ratio (%) <sup>(1)</sup>
PG-4116-A-62	G24-1431A	527553m e, 6917419m N	27/5/24	98.0	2.0
PG-4116-A-63	G24-1435A	527547m E, 6917423m N	28/5/24	100.0	0.0
	G24-1435B	527537m E, 6917394m N	28/5/24	98.0	2.0
	G24-1435C	527575m E, 6917383m N	28/5/24	98.5	4.0
PG-4116-A-64	G24-1437A	527525m N, 917403m N	29/5/24	97.5	0.5
	G24-1437B	527556m E, 6917393m N	29/5/24	96.5	0.5
	G24-1437C	527573m E, 6917387m N	29/5/24	97.0	2.5
PG-4116-A-65	G24-1447A	527508m E, 6917436m N	30/5/24	99.0	2.5
	G24-1447B	527502m E, 6917435m N	30/5/24	98.5	2.0
PG-4116-A-66	G24-1452A	527509m E, 6917432m N	31/5/24	100.0	2.0
PG-4116-A-69	G24-1461A	527551m E, 6917411m N	4/6/24	97.0	2.5
	G24-1461B	527536m E, 6917402m N	4/6/24	98.0	2.5
	G24-1461C	527503m E, 6917406m N	4/6/24	98.5	0.0
	G24-1461D	527477m E, 6917391m N	4/6/24	98.5	2.5
PG-4116-A-72	G24-1472A	527565m E, 6917350m N	6/6/24	96.0	0.0
PG-4116-A-74	G24-1474A	527563m E, 6917370m N	7/6/24	96.0	2.5
PG-4116-A-76	G24-1476A	527558m E, 6917366m N	10/6/24	101.0	2.0
PG-4116-A-80	G24-1493A	527522m E, 6917392m N	13/6/24	95.5	2.0
PG-4116-A-84	G24-1485A	527484m E, 6917392m N	11/6/24	99.5	2.5
	G24-1485B	527537m E, 6917385m N	11/6/24	97.5	2.5
PG-4116-A-90	G24-1517A	527413m E, 6917460m N	24/6/24	96.0	0.0
PG-4116-A-110	G25-2025A	527462m E, 6917345m N	7/2/25	95.5	0.5
PG-4116-A-112	G25-2074A	527445m E, 6917432m N	28/2/25	95.0	-1.0
PG-4116-A-113	G25-2081A	527451m E, 6917438m N	3/3/25	98.5	0.0

**Notes:**

(1) Positive values are dry of OMC, negative values are wet of OMC

### 3.0 GENERAL STATEMENT OF COMPLIANCE

Pacific Geotech Pty Ltd certify that the bulk earthworks at the site have been carried out in in general accordance with the project specification, under a Level 1 Inspection and Testing Program in accordance with AS 3798-2007 guidelines for the areas where supervision was undertaken.

The fill may be deemed 'Controlled' fill in general accordance with AS 2870-2011 'Residential slabs and footings' clause 6.4.2 'Filling'.

It should be noted that some oversize material is present within the fill material.

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Should you have any queries regarding the Earthworks program please do not hesitate to contact Ben Elsmore or Peter Elkington at our office.

Yours faithfully,



**B. ELSMORE (RPEQ 19656)**



**P. ELKINGTON (RPEQ 7226)**

For and on behalf of  
**PACIFIC GEOTECH PTY LTD**

Attached:      Dry Density Ratio Reports  
                     Site Photographs

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SITE PHOTOGRAPHS



**Image A – Stripping of the ground surface prior to filling exposing natural clays**



**Image B – Compaction of fill material**



**Image C – Compaction of fill material**



**Image D – Stripping of topsoil**

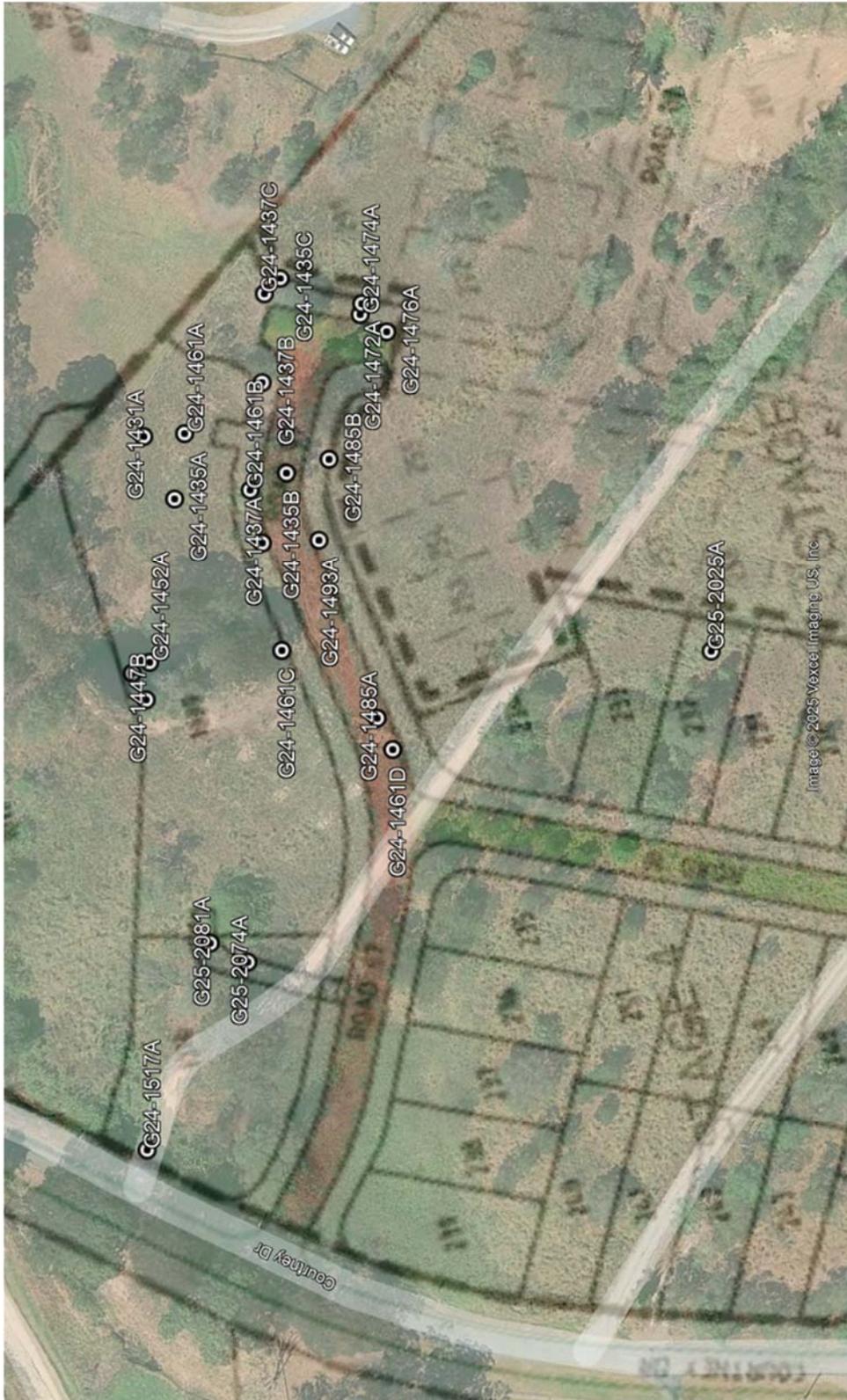


**Image E – Over-sized particles pushed to edge of the fill platform to be removed**



**Image F – Compaction of fill material near the finished level**

### PLOT OF DENSITY TESTS



# Material Test Report

**Report Number:** PG-4116-A-62  
**Issue Number:** 1  
**Date Issued:** 06/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1431  
**Date Sampled:** 27/05/2024  
**Dates Tested:** 27/05/2024 - 31/05/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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 Email: info@pacgeo.com.au



Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Dave Trotman

Senior Geotechnician

NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1431A	G24-1431B	
Sample Number	G24-1431A	G24-1431B	
Client Sample #	**	**	
Date Tested	27/05/2024	27/05/2024	
Time Tested	10:05	10:15	
Test Request #/Location	Stage 4 & 5	Stage 4 & 5	
Easting	527553	527583	
Northing	6917419	6917375	
Elevation (m)	38.0	42.4	
Soil Description	Sandy Clay w/ Gravel. Orange Brown	Sandy Clay w/ Gravel. Orange Brown	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	4	14	
Field Wet Density (FWD) t/m <sup>3</sup>	2.12	2.05	
Field Moisture Content %	9.6	8.0	
Field Dry Density (FDD) t/m <sup>3</sup>	1.93	1.89	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.16	2.14	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.0	3.5	
Hilf Density Ratio (%)	<b>98.0</b>	<b>96.0</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

**Report Number:** PG-4116-A-63  
**Issue Number:** 1  
**Date Issued:** 06/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1435  
**Date Sampled:** 28/05/2024  
**Dates Tested:** 28/05/2024 - 03/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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Senior Geotechnician

NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1435A	G24-1435B	G24-1435C
Sample Number	G24-1435A	G24-1435B	G24-1435C
Client Sample #	**	**	**
Date Tested	28/05/2024	28/05/2024	28/05/2024
Time Tested	10:10	10:20	13:05
Test Request #/Location	Stage 4 & 5	Stage 4 & 5	Stage 4 & 5
Easting	527547	527537	527575
Northing	6917423	6917394	6917383
Elevation (m)	38.4	39.8	41.1
Soil Description	Sandy Clay w/ Gravel. Orange Brown	Sandy Clay w/ Gravel. Orange Brown	Sandy Clay w/ Gravel. Orange Brown
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	7	10	18
Field Wet Density (FWD) t/m <sup>3</sup>	2.22	2.12	2.14
Field Moisture Content %	10.1	9.9	5.6
Field Dry Density (FDD) t/m <sup>3</sup>	2.01	1.93	2.02
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.22	2.16	2.17
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	0.0	2.0	4.0
Hilf Density Ratio (%)	<b>100.0</b>	<b>98.0</b>	<b>98.5</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

**Report Number:** PG-4116-A-64  
**Issue Number:** 1  
**Date Issued:** 06/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1437  
**Date Sampled:** 29/05/2024  
**Dates Tested:** 29/05/2024 - 04/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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Senior Geotechnician

NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1437A	G24-1437B	G24-1437C
Sample Number	G24-1437A	G24-1437B	G24-1437C
Client Sample #	**	**	**
Date Tested	29/05/2024	29/05/2024	29/05/2024
Time Tested	10:05	10:15	13:15
Test Request #/Location	Stage 4 & 5	Stage 4 & 5	Stage 4 & 5
Easting	527525	527556	527573
Northing	6917403	6917393	6917387
Elevation (m)	40.5	40.4	42.4
Soil Description	Clayey Sandy Gravel. Orange	Clayey Sandy Gravel. Orange	Sandy Clay w/ Gravel. Orange
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	9	11	10
Field Wet Density (FWD) t/m <sup>3</sup>	2.16	2.19	2.06
Field Moisture Content %	8.0	7.2	9.1
Field Dry Density (FDD) t/m <sup>3</sup>	2.00	2.04	1.88
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.22	2.26	2.12
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	0.5	0.5	2.5
Hilf Density Ratio (%)	<b>97.5</b>	<b>96.5</b>	<b>97.0</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

**Report Number:** PG-4116-A-65  
**Issue Number:** 1  
**Date Issued:** 06/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1447  
**Date Sampled:** 30/05/2024  
**Dates Tested:** 30/05/2024 - 04/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Dave Trotman

Senior Geotechnician

NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1447A	G24-1447B	
Sample Number	G24-1447A	G24-1447B	
Client Sample #	**	**	
Date Tested	30/05/2024	30/05/2024	
Time Tested	10:05	13:15	
Test Request #/Location	Stage 4 & 5	Stage 4 & 5	
Easting	527508	527502	
Northing	6917436	6917435	
Elevation (m)	34.3	35.6	
Soil Description	Clayey Sandy Gravel. Brown	Clayey Sandy Gravel. Brown	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	37.5	37.5	
Percentage of Wet Oversize (%)	12	17	
Field Wet Density (FWD) t/m <sup>3</sup>	2.17	2.16	
Field Moisture Content %	7.9	6.8	
Field Dry Density (FDD) t/m <sup>3</sup>	2.01	2.03	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.19	2.20	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.5	2.0	
Hilf Density Ratio (%)	<b>99.0</b>	<b>98.5</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

**Report Number:** PG-4116-A-66  
**Issue Number:** 1  
**Date Issued:** 18/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1452  
**Date Sampled:** 31/05/2024  
**Dates Tested:** 31/05/2024 - 07/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	G24-1452A		
Client Sample #	**		
Date Tested	31/05/2024		
Time Tested	13:20		
Test Request #/Location	Stage 4 & 5		
Easting	527509		
Northing	6917432		
Elevation (m)	37.1		
Soil Description	Clayey Sandy Gravel. Orange Brown		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	37.5		
Percentage of Wet Oversize (%)	18		
Field Wet Density (FWD) t/m <sup>3</sup>	2.20		
Field Moisture Content %	8.7		
Field Dry Density (FDD) t/m <sup>3</sup>	2.02		
Peak Converted Wet Density t/m <sup>3</sup>	**		
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.20		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	2.0		
Hilf Density Ratio (%)	<b>100.0</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

**Report Number:** PG-4116-A-69  
**Issue Number:** 1  
**Date Issued:** 18/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1461  
**Date Sampled:** 04/06/2024  
**Dates Tested:** 04/06/2024 - 10/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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Senior Geotechnician

NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1461A	G24-1461B	G24-1461C	G24-1461D
Sample Number	G24-1461A	G24-1461B	G24-1461C	G24-1461D
Client Sample #	**	**	**	**
Date Tested	04/06/2024	04/06/2024	04/06/2024	04/06/2024
Time Tested	10:25	10:35	10:45	13:35
Test Request #/Location	Stage 4 & 5			
Easting	527551	527536	527503	527477
Northing	6917411	6917402	6917406	6917391
Elevation (m)	40.0	40.8	39.6	39.5
Soil Description	Sandy Clay w/ Gravel. Orange Brown			
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	3	0	2
Field Wet Density (FWD) t/m <sup>3</sup>	2.10	2.15	2.08	2.11
Field Moisture Content %	11.8	12.3	11.6	10.4
Field Dry Density (FDD) t/m <sup>3</sup>	1.88	1.91	1.86	1.91
Peak Converted Wet Density t/m <sup>3</sup>	2.17	**	2.11	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	2.19	**	2.14
Moisture Variation (Wv) %	2.5	**	0.0	**
Adjusted Moisture Variation %	**	2.5	**	2.5
Hilf Density Ratio (%)	<b>97.0</b>	<b>98.0</b>	<b>98.5</b>	<b>98.5</b>
Compaction Method	<b>Standard</b>	<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

**Report Number:** PG-4116-A-72  
**Issue Number:** 1  
**Date Issued:** 18/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1472  
**Date Sampled:** 06/06/2024  
**Dates Tested:** 06/06/2024 - 12/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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Approved Signatory: Dave Trotman

Senior Geotechnician

NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1472A	G24-1472B	G24-1472C	G24-1472D
Sample Number	G24-1472A	G24-1472B	G24-1472C	G24-1472D
Client Sample #	**	**	**	**
Date Tested	06/06/2024	06/06/2024	06/06/2024	06/06/2024
Time Tested	09:15	09:30	13:15	13:25
Test Request #/Location	Stage 4 & 5	Stage 4 & 5	Stage 4 & 5	Stage 4 & 5 (Retest G24-1423-A)
Easting	527565	527590	527612	527632
Northing	6917369	6917350	6917335	6917304
Elevation (m)	44.6	47.3	50.0	51.9
Soil Description	Sandy Clay. Orange Brown	Sandy Clay. Orange Brown	Sandy Clay w/ Gravel. Brown	Sandy Clay w/ Gravel. Orange Brown
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	4	2	4	6
Field Wet Density (FWD) t/m <sup>3</sup>	2.03	2.04	2.14	2.15
Field Moisture Content %	11.5	12.5	12.6	15.7
Field Dry Density (FDD) t/m <sup>3</sup>	1.82	1.82	1.90	1.86
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.11	2.13	2.17	2.14
Moisture Variation (Wv) %	**	**	**	**
Adjusted Moisture Variation %	0.0	0.0	2.5	2.5
Hilf Density Ratio (%)	<b>96.0</b>	<b>96.0</b>	<b>99.0</b>	<b>100.5</b>
Compaction Method	<b>Standard</b>	<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

**Report Number:** PG-4116-A-74  
**Issue Number:** 1  
**Date Issued:** 18/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1474  
**Date Sampled:** 07/06/2024  
**Dates Tested:** 07/06/2024 - 14/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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Approved Signatory: Dave Trotman

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NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1474A	G24-1474B	G24-1474C
Sample Number	G24-1474A	G24-1474B	G24-1474C
Client Sample #	**	**	**
Date Tested	07/06/2024	07/06/2024	07/06/2024
Time Tested	08:45	09:40	09:55
Test Request #/Location	Stage 4 & 5	Stage 4 & 5	Stage 4 & 5
Easting	527563	527572	527586
Northing	6917370	6917361	6917344
Elevation (m)	45.0	46.0	48.2
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	4	6	3
Field Wet Density (FWD) t/m <sup>3</sup>	2.00	2.04	2.03
Field Moisture Content %	10.7	10.8	10.7
Field Dry Density (FDD) t/m <sup>3</sup>	1.81	1.84	1.84
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.09	2.13	2.12
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	2.5	2.0	2.5
Hilf Density Ratio (%)	<b>96.0</b>	<b>96.0</b>	<b>96.0</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

**Report Number:** PG-4116-A-76  
**Issue Number:** 1  
**Date Issued:** 18/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1476  
**Date Sampled:** 10/06/2024  
**Dates Tested:** 10/06/2024 - 17/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1476A	G24-1476B	
Sample Number	G24-1476A	G24-1476B	
Client Sample #	**	**	
Date Tested	10/06/2024	10/06/2024	
Time Tested	09:10	09:20	
Test Request #/Location	Stage 4 & 5	Stage 4 & 5	
Easting	527558	527581	
Northing	6917366	6917345	
Elevation (m)	46.4	48.8	
Soil Description	Sandy Clay w/ Gravel. Brown	Sandy Clay w/ Gravel. Brown	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	13	13	
Field Wet Density (FWD) t/m <sup>3</sup>	2.20	2.17	
Field Moisture Content %	9.8	7.8	
Field Dry Density (FDD) t/m <sup>3</sup>	2.00	2.02	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.18	2.17	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.0	2.5	
Hilf Density Ratio (%)	<b>101.0</b>	<b>100.0</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

**Report Number:** PG-4116-A-80  
**Issue Number:** 1  
**Date Issued:** 19/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1493  
**Date Sampled:** 13/06/2024  
**Dates Tested:** 13/06/2024 - 18/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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Approved Signatory: Rob Sharpe

Senior Geotechnician

NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	G24-1493A		
Client Sample #	**		
Date Tested	13/06/2024		
Time Tested	10:45		
Test Request #/Location	Stage 4 & 5		
Easting	527522		
Northing	6917392		
Elevation (m)	42.6		
Soil Description	Clayey Sand w/ Gravel. Orange Brown		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	20		
Field Wet Density (FWD) t/m <sup>3</sup>	2.08		
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>	**		
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.18		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	2.0		
Hilf Density Ratio (%)	<b>95.5</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

**Report Number:** PG-4116-A-84  
**Issue Number:** 1  
**Date Issued:** 20/06/2024  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1485  
**Date Sampled:** 11/06/2024  
**Dates Tested:** 11/06/2024 - 18/06/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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Approved Signatory: Dave Trotman

Senior Geotechnician

NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	G24-1485A	G24-1485B	
Sample Number	G24-1485A	G24-1485B	
Client Sample #	**	**	
Date Tested	11/06/2024	11/06/2024	
Time Tested	13:00	13:10	
Test Request #/Location	Stages 4 & 5	Stages 4 & 5	
Easting	527484	527537	
Northing	6917392	6917385	
Elevation (m)	40.20	42.05	
Soil Description	Sandy Clay, brown	Clayey Sandy Gravel, brown	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	2	16	
Field Wet Density (FWD) t/m <sup>3</sup>	2.00	2.19	
Field Moisture Content %	16.9	9.1	
Field Dry Density (FDD) t/m <sup>3</sup>	1.71	2.00	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.01	2.24	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.5	2.5	
Hilf Density Ratio (%)	<b>99.5</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

**Report Number:** PG-4116-A-90  
**Issue Number:** 1  
**Date Issued:** 05/07/2024  
**Client:** HB QLD Pty Ltd  
c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 1517  
**Date Sampled:** 24/06/2024  
**Dates Tested:** 24/06/2024 - 04/07/2024  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	G24-1517A		
Client Sample #	**		
Date Tested	24/06/2024		
Time Tested	08:40		
Test Request #/Location	Stage 4 & 5		
Easting	527413		
Northing	6917460		
Elevation (m)	37.3		
Soil Description	Clayey Sandy Gravel. Brown		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	37.5		
Percentage of Wet Oversize (%)	18		
Field Wet Density (FWD) t/m <sup>3</sup>	2.20		
Field Moisture Content %	8.4		
Field Dry Density (FDD) t/m <sup>3</sup>	2.03		
Peak Converted Wet Density t/m <sup>3</sup>	**		
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.29		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	0.0		
Hilf Density Ratio (%)	<b>96.0</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

**Report Number:** PG-4116-A-110  
**Issue Number:** 1  
**Date Issued:** 12/02/2025  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 2025  
**Date Sampled:** 07/02/2025  
**Dates Tested:** 07/02/2025 - 07/02/2025  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	G25-2025A		
Client Sample #	**		
Date Tested	07/02/2025		
Time Tested	09:45		
Test Request #/Location	Stage 4		
Easting	527462		
Northing	6917345		
Elevation (m)	42.2		
Soil Description	Sandy Gravelly Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	6		
Field Wet Density (FWD) t/m <sup>3</sup>	2.02		
Field Moisture Content %	9.0		
Field Dry Density (FDD) t/m <sup>3</sup>	1.85		
Peak Converted Wet Density t/m <sup>3</sup>	**		
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.12		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	0.5		
Hilf Density Ratio (%)	<b>95.5</b>		
Compaction Method	<b>Standard</b>		
Remarks	**		

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** PG-4116-A-112  
**Issue Number:** 1  
**Date Issued:** 13/03/2025  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 2074  
**Date Sampled:** 28/02/2025  
**Dates Tested:** 28/02/2025 - 12/03/2025  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	G25-2074A	G25-2074B	
Client Sample #	**	**	
Date Tested	28/02/2025	28/02/2025	
Time Tested	10:05	13:10	
Test Request #/Location	Stage 4	Stage 5	
Easting	527445	527505	
Northing	6917432	6917355	
Elevation (m)	36.5	46.5	
Soil Description	Sandy Clay w/ Gravel	Sandy Clay w/ Gravel	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	11	
Field Wet Density (FWD) t/m <sup>3</sup>	2.01	2.11	
Field Moisture Content %	14.0	11.3	
Field Dry Density (FDD) t/m <sup>3</sup>	1.76	1.90	
Peak Converted Wet Density t/m <sup>3</sup>	2.12	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	2.19	
Moisture Variation (Wv) %	-1.0	**	
Adjusted Moisture Variation %	**	0.0	
Hilf Density Ratio (%)	<b>95.0</b>	<b>96.5</b>	
Compaction Method	<b>Standard</b>	<b>Standard</b>	
Remarks	**	**	

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** PG-4116-A-113  
**Issue Number:** 1  
**Date Issued:** 14/03/2025  
**Client:** HB QLD Pty Ltd  
 c/o 3 Jowett Street, Coomera Qld 4209,  
**Project Number:** PG-4116-A  
**Project Name:** Residential Development  
**Project Location:** Stage 4 & 5 Courtney Drive, Upper Coomera  
**Work Request:** 2081  
**Date Sampled:** 03/03/2025  
**Dates Tested:** 03/03/2025 - 13/03/2025  
**Sampling Method:** AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** Minimum 95% Standard Compaction  
**Site Selection:** Selected by GTA  
**Location:** Upper Coomera  
**Material:** Earthworks Fill  
**Material Source:** Onsite

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NATA Accredited Laboratory Number: 21130

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	G25-2081A	G25-2081B	
Client Sample #	**	**	
Date Tested	03/03/2025	03/03/2025	
Time Tested	09:25	13:05	
Test Request #/Location	Stage 4	Stage 5	
Easting	527451	527495	
Northing	6917438	6917340	
Elevation (m)	37.4	47.1	
Soil Description	Clayey Sandy Gravel	Clayey Sandy Gravel	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	37.5	37.5	
Percentage of Wet Oversize (%)	18	15	
Field Wet Density (FWD) t/m <sup>3</sup>	2.18	2.21	
Field Moisture Content %	6.1	3.6	
Field Dry Density (FDD) t/m <sup>3</sup>	2.06	2.14	
Peak Converted Wet Density t/m <sup>3</sup>	**	**	
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.22	2.29	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	0.0	2.0	
Hilf Density Ratio (%)	<b>98.5</b>	<b>96.5</b>	
Compaction Method	<b>Standard</b>	<b>Standard</b>	
Remarks	**	**	

### Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC