



LEVEL ONE EARTHWORKS REPORT

**Residential Subdivision
13 Gerry Court,
Marsden**

JANUARY 31 2023

Nulla Contracting

Authored by: QUALTEST LABORATORY PTY LTD

REF: 5057

Ref: 5057
Job: 23-207
Author: R. Mitchell

31st January 2024

Nulla Contracting
P.O Box 5094,
Alger, Qld, 4115

ATTENTION: **MR PAUL CIESIOLKA**
Email: Paul.C@nullacontracting.com.au
Cc: Joseph.M@nullacontracting.com.au

Dear Sir,

RE: **LEVEL ONE EARTHWORKS REPORT**

PROJECT: **RESIDENTIAL SUBDIVISION
13 GERRY COURT
MARSDEN**

CLIENT: **NULLA CONTRACTING**

CONSULTANT: **URBAN ENGINEERING SOLUTIONS**

CONTRACTOR: **NULLA CONTRACTING**

Revision	Date	Author	Reviewer	Description
0	31/01/24	R. Mitchell	M. Morrison	For Review / Issue to Client

1.0 INTRODUCTION

1.1 General

This report presents results and documentation for the Level One Inspection and Testing of earthworks filling operations for the Residential Subdivision at 13 Gerry Court Marsden.

Qualtest Laboratory Pty Ltd was commissioned by Nulla Contracting (The Client) to provide Level 1 Earthworks Inspection and Testing services as defined in Section 8 of AS3798.

Filling operations covered by this report were constructed intermittently between June 2023 and January 2024.

The purpose of Level 1 commission and this report is to provide an opinion that the earthworks operations carried out by the Client have been carried out in accordance with AS3798, relevant project specifications and Local Authority requirements as appropriate.

This report has been carried out in general accordance with the following: -

- AS3798-2007 - Guidelines on Earthwork for Commercial and Residential Development
- Urban Engineering Solutions Pty Ltd Drawings and Notes
- Logan City Council Specifications

This report does not cover underground services, trench backfill, pavements, retaining walls, filling outside areas shown on Figure 2 or any other works after 24th January 2024.

1.2 The Project

The project comprises of a 6 Lot Residential Subdivision with associated infrastructure and underground services.

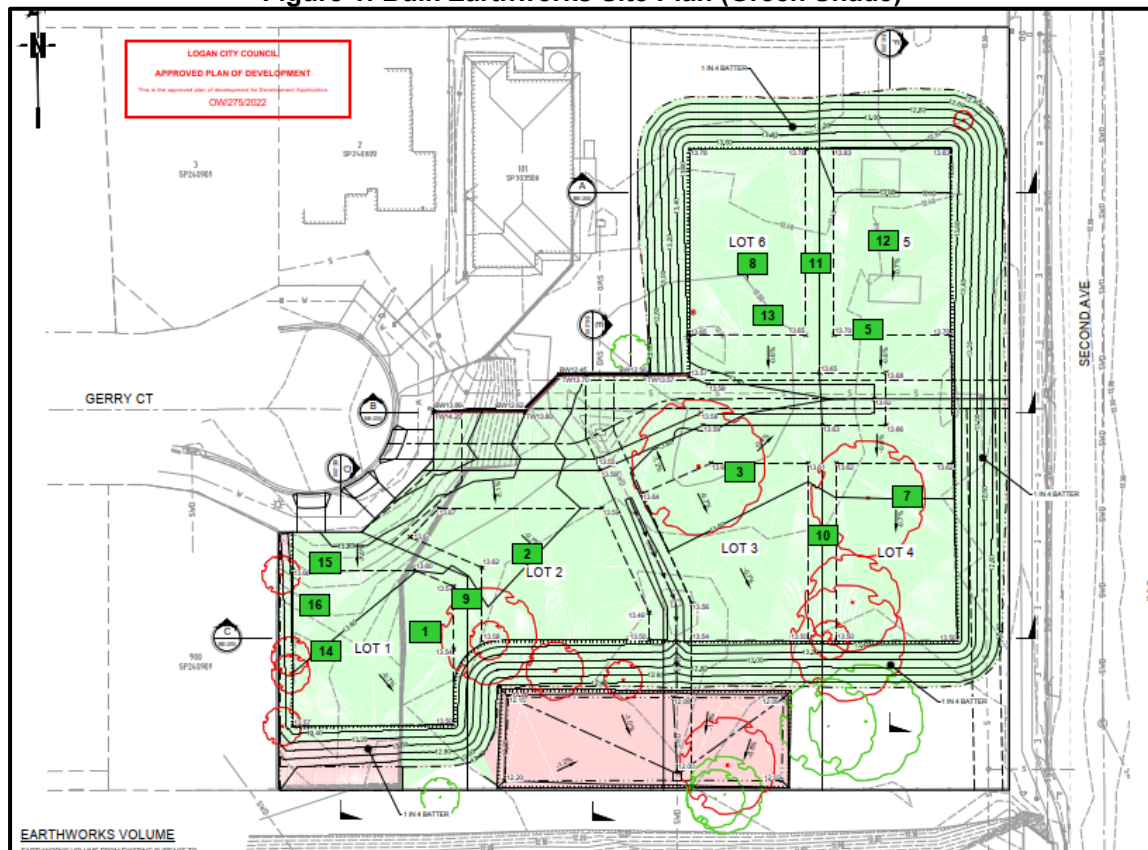
The Residential Lots are titled Lot 1, Lot 2, Lot 3, Lot 4, Lot 5 and Lot 6.

Earthworks to be constructed at the site is presented on Urban Engineering Solutions drawings, Bulk Earthworks Layout Plan, Drawing No. C0438-OW-BE-100, Revision A dated February 2023 reproduced below as Figure 1 below.

This plan is a reasonable indication of fill placed during our involvement.

The approximate extent of the fill covered by this report is presented below as Figure 1.

Figure 1: Bulk Earthworks Site Plan (Green Shade)



2.0 WORKS AND SPECIFICATIONS

All filling operations at the Site are to be placed and compacted in accordance with the following: -

- AS3798 – Type 1 Earthworks Operations.
- Logan City Council Specifications.
- Density Ratio Requirement – 95% Standard.

3.0 FILL FOUNDATION

Areas to be filled at the site were observed to be stripped of existing fill, vegetation, grass, redundant services, water affected ground, uncontrolled fill and topsoil to depths exposing competent natural ground.

Compliance of the fill foundation and approval to commence filling was on the basis of: -

- Adequate removal of topsoil and organics, uncontrolled fill, loose soils to depths exposing competent natural ground.
- Compliant proof roll testing of the stripped surface using onsite heavy earthworks plant.

A picture of the stripped surface prior to filling is presented below.

Picture 1: View of the Stripped Surface



4.0 FILLING OPERATIONS

Fill at the site was sourced from onsite cuts and imported to site from local borrow sources.

The materials used as fill can be broadly summarised as: -

- Import / Onsite - Gravelly Sandy Clay (SC), low to medium plasticity fines, fine to coarse sands and gravels with the occasional cobble sized particle, brown and moist.

Fill was constructed using the following plant: -

- 815 Compactor
- Pad Foot Roller
- Excavator
- Water Truck
- Body Trucks

Fill was observed to be placed in layers within the capacity of the above plant, appropriately moisture conditioned and compacted using several passes.

To the extent that was reasonably practicable, fill materials visibly containing excessive amounts of silts or deleterious materials such as sticks, oversize particles were sorted to remove the contaminants prior to placement, or rejected for use. Some cobble sized particles may remain in the body of the fill, however, are unlikely to be in sufficient quantities to adversely affect the performance of the new fill. Sloping areas requiring filling were benched and continually keyed into the slope prior to and during fill placement.

A picture of the filling operations is presented below.

Picture 2: View of Filling Operations



5.0 COMPACTION TESTING

Compaction testing was carried out on the compacted fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 and tested to AS1289 test methods. All test locations were selected by Qualtest at random and staggered over the fill area and depth. Test locations were not obtained by survey and on this basis, the locations should be considered as approximate only.

Compaction testing achieved the minimum compaction specification of 95% Standard at the test locations.

Areas where the compaction specification was not achieved were reworked and re-tested using random stratified location processes.

The location of the compaction tests and area of fill covered under this report are shown on the Site Plan contained in Appendix A. Compaction test reports are contained in Appendix B.

6.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations during our engagement including the stripped surface, new fill placement and compaction operations, and compaction testing.

As far as Qualtest could assess, the fill at The Site has been observed to be placed and compacted in accordance with the requirements outlined in Section 2.0.

The fill at The Site can be considered to be "Controlled" as defined in AS2870.

7.0 EXCLUSIONS

The compliance statement specifically excludes any topsoil, which may be placed for use as Lot dressing or any other subsequent earthworks after 24th January 2024. All trench backfill, landscaping fill, fill outside the area shown as Figure 1 and other fill placed without our knowledge is also excluded.

Assessments of batter stability, global stability, and material quality such as soaked CBR and site classifications are excluded from this commission. The stability of any fill batters in the long term must take account of the variable materials used for the construction of the fill platforms and all surface loads including traffic loads near the crest of all batters.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 - 2007, including soil or fill reactivity and soaked CBR values. We note that the fill materials comprise clay soils, which may result in unfavourable site classifications for individual lots and low subgrade design strengths for pavements.

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.

Controlled fill (Level 1 Fill) provides an overview that the Earthwork Specification has been met. There are instances where significant long-term settlements of controlled fill can occur. Large total and differential settlements can be expected where fill has been placed over soft and compressible soils and where the thickness of controlled fill varies significantly across a lot.

Should you require further information regarding the above please do not hesitate to contact this office.

Yours faithfully,



MICHAEL MORRISON

For and on behalf of

QUALTEST LABORATORY PTY LTD

Appendix A – Site Plan with Approximate Test Locations

Appendix B – Compaction Test Reports



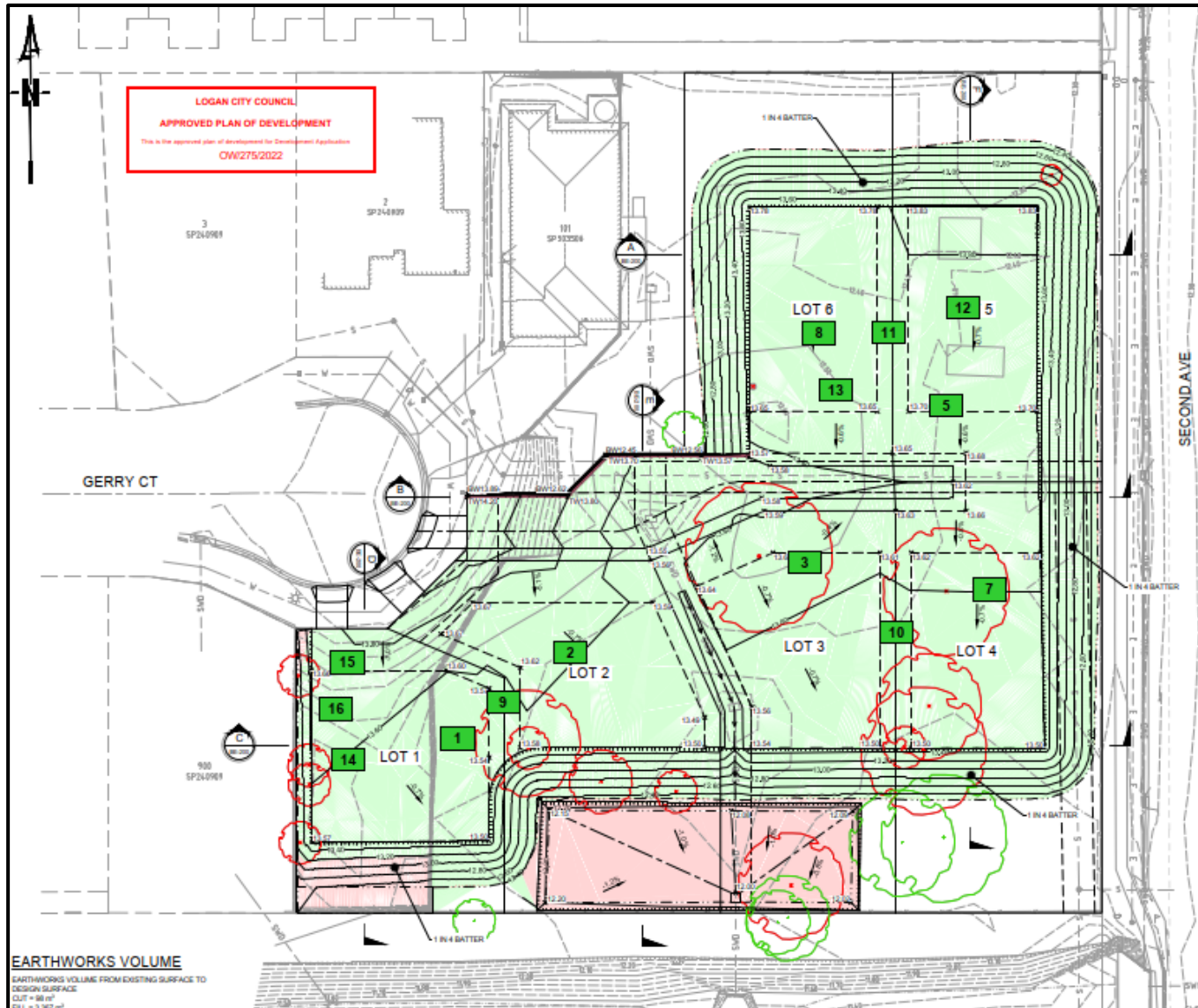
APPENDIX A

Site Plan and Compaction Test Locations



Qualtest Laboratory

Est. 1987



Qualtest Laboratory

Est. 1987

LEGEND:

Test Locations



CLIENT: Nulla Contracting

TITLE: COMPACTION TEST LOCATIONS

DRAWING NO: 23-207-01

LOCATION: 13 Gerry Court, Marsden

DATE: 31st January 2024

PROJECT NO: 23-207

CHECKED BY: GG



APPENDIX B

COMPACTION TEST REPORTS

Material Test Report

Report Number: 23-207-1
Issue Number: 1
Date Issued: 19/06/2023
Client: NULLA CONTRACTING PTY LTD
 63 ULINGA CRESCENT, PARKINSON QLD 4115
Contact: JOSEPH MARTIN
Project Number: 23-207
Project Name: LEVEL ONE & LEVEL TWO TESTING
Project Location: 13 GERRY COURT, MARSDEN
Work Request: 6109
Date Sampled: 07/06/2023
Dates Tested: 07/06/2023 - 15/06/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Earthworks - 13 Gerry Court - Marsden
Material: Allotment Fill
Material Source: uncontrolled / Imported



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 Email: greg@qualtestgeo.com

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Greg Gibson
ql-greg

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	S6109A	S6109B	S6109C
Test Number	1	2	3
Date Tested	07/06/2023	07/06/2023	07/06/2023
Time Tested	10:10	10:20	10:30
Test Request #/Location	Lot 1	Lot 2	Lot 3
Easting	6m From North Boundary	7m From West Boundary	5m From North Boundary
Northing	8m From East Boundary	6m From South Boundary	7m From West Boundary
Layer / Reduced Level	0.5m off Fill	0.5m off Fill	0.5m off Fill
Thickness of Layer (mm)	175	175	175
Soil Description	Sandy, Shaley, Clay	Sandy, Shaley, Clay	Sandy, Shaley, Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	1	0	0
Field Wet Density (FWD) t/m ³	2.08	2.01	2.06
Field Moisture Content %	14.8	17.1	13.5
Field Dry Density (FDD) t/m ³	1.81	1.72	1.81
Peak Converted Wet Density t/m ³	**	2.07	2.09
Adjusted Peak Converted Wet Density t/m ³	2.13	**	**
Moisture Variation (Wv) %	**	-2.5	1.5
Adjusted Moisture Variation %	0.0	**	**
Hilf Density Ratio (%)	97.5	97.0	98.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 23-207-2
Issue Number: 3 - This version supersedes all previous issues
Reissue Reason: Report Separation
Date Issued: 31/01/2024
Client: NULLA CONTRACTING PTY LTD
 63 ULINGA CRESCENT, PARKINSON QLD 4115
Contact: JOSEPH MARTIN
Project Number: 23-207
Project Name: LEVEL ONE & LEVEL TWO TESTING
Project Location: 13 GERRY COURT, MARSDEN
Work Request: 6129
Date Sampled: 08/06/2023 12:30
Dates Tested: 08/06/2023 - 09/06/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: 13 Gerry Court - Marsden
Material: Allotment Fill
Material Source: On Site



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Approved Signatory: Rhys Mitchell
 Field Technician

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6129B		
Test Number	5		
Date Tested	08/06/2023		
Time Tested	12:45		
Test Request #/Location	Lot 5		
Line / Offset	12m from East boundary		
Offset	6m from South boundary		
Layer / Reduced Level	0.5m of fill		
Thickness of Layer (mm)	175		
Soil Description	Clayey GRAVEL		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.08		
Field Moisture Content %	16.8		
Field Dry Density (FDD) t/m ³	1.78		
Peak Converted Wet Density t/m ³	2.05		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	0.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	101.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

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

Material Test Report

Report Number: 23-207-3
Issue Number: 1
Date Issued: 20/06/2023
Client: NULLA CONTRACTING PTY LTD
 63 ULINGA CRESCENT, PARKINSON QLD 4115
Contact: JOSEPH MARTIN
Project Number: 23-207
Project Name: LEVEL ONE & LEVEL TWO TESTING
Project Location: 13 GERRY COURT, MARSDEN
Work Request: 6141
Date Sampled: 09/06/2023
Dates Tested: 09/06/2023 - 16/06/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Earthworks - 13 Gerry Court - Marsden
Material: Allotment Fill
Material Source: Imported



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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	S6141A	S6141B	S6141C	S6141D	S6141E
Test Number	7	8	9	10	11
Date Tested	09/06/2023	09/06/2023	09/06/2023	09/06/2023	09/06/2023
Time Tested	13:43	13:50	14:00	14:10	14:20
Test Request #/Location	Lot 4 - Retest of WR 6129A	Lot 6 - Retest of WR 6129C	Lots 1/2	Earthworks - Lot3/4	Earthworks - Lot5/6
Easting	5m off East Boundary	7m from East Boundary	Common Boundary of Lots	Common Boundary of Lots	Common Boundary of Lots
Northing	4m off North Boundary	10m from North Boundary	6m from Front Boundary	7m from Front Boundary	8m from Front Boundary
Layer / Reduced Level	0.5m of Fill	0.5m of Fill	Final Level	Final Level	Final Level
Thickness of Layer (mm)	175	175	175	175	175
Soil Description	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	2	0	0	**
Field Wet Density (FWD) t/m ³	2.03	2.07	2.28	2.30	2.20
Field Moisture Content %	15.8	15.0	7.8	8.5	11.0
Field Dry Density (FDD) t/m ³	1.75	1.80	2.12	2.12	1.98
Peak Converted Wet Density t/m ³	2.12	**	2.24	2.22	2.20
Adjusted Peak Converted Wet Density t/m ³	**	2.11	**	**	**
Moisture Variation (Wv) %	0.0	**	3.0	3.0	0.5
Adjusted Moisture Variation %	**	0.0	**	**	**
Hilf Density Ratio (%)	95.5	98.0	102.0	103.5	100.0
Compaction Method	Standard	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: 23-207-4
Issue Number: 1
Date Issued: 27/06/2023
Client: NULLA CONTRACTING PTY LTD
 63 ULINGA CRESCENT, PARKINSON QLD 4115
Contact: JOSEPH MARTIN
Project Number: 23-207
Project Name: LEVEL ONE & LEVEL TWO TESTING
Project Location: 13 GERRY COURT, MARSDEN
Work Request: 6189
Date Sampled: 13/06/2023 13:40
Dates Tested: 13/06/2023 - 23/06/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and preparation of soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: Gerry Court - Marsden
Material: Allotment Fill
Material Source: On Site



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Approved Signatory: Rhys Mitchell
 Field Technician

NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S6189A	S6189B	
Test Number	12	13	
Date Tested	13/06/2023	13/06/2023	
Time Tested	13:45	13:50	
Test Request #/Location	Lot 5	Lot 6	
Latitude	4m from front boundary	6m from front boundary	
Longitude	7m from left boundary	4m from left boundary	
Layer / Reduced Level	Final level	Final level	
Thickness of Layer (mm)	175	175	
Soil Description	Gravelly CLAY	Gravelly CLAY	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	7	
Field Wet Density (FWD) t/m ³	2.14	2.31	
Field Moisture Content %	12.6	15.3	
Field Dry Density (FDD) t/m ³	1.90	2.00	
Peak Converted Wet Density t/m ³	2.09	**	
Adjusted Peak Converted Wet Density t/m ³	**	2.11	
Moisture Variation (Wv) %	2.0	**	
Adjusted Moisture Variation %	**	0.5	
Hilf Density Ratio (%)	102.5	109.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

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

Material Test Report

Report Number: 23-207-5
Issue Number: 1
Date Issued: 30/01/2024
Client: NULLA CONTRACTING PTY LTD
 63 ULINGA CRESCENT, PARKINSON QLD 4115
Contact: JOSEPH MARTIN
Project Number: 23-207
Project Name: LEVEL ONE & LEVEL TWO TESTING
Project Location: 13 GERRY COURT, MARSDEN
Work Request: 8655
Date Sampled: 24/01/2024
Dates Tested: 24/01/2024 - 25/01/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Specification: 95% Standard
Location: 13 Gerry Ct, Marsden
Material: General Fill
Material Source: Cut From Onsite



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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S8655A		
Test Number	16		
Date Tested	24/01/2024		
Time Tested	12:23		
Test Request #/Location	Lot 1		
Easting	3m From Western Boundary of Lot		
Northing	8m From Northern Boundary of Lot		
Layer / Reduced Level	Finish Level		
Thickness of Layer (mm)	175		
Soil Description	Sandy,Silty CLAY		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.12		
Field Moisture Content %	17.2		
Field Dry Density (FDD) t/m ³	1.81		
Peak Converted Wet Density t/m ³	2.11		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	-1.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	101.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

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

Material Test Report

Report Number: 23-207-6
Issue Number: 1
Date Issued: 30/01/2024
Client: NULLA CONTRACTING PTY LTD
 63 ULINGA CRESCENT, PARKINSON QLD 4115
Contact: JOSEPH MARTIN
Project Number: 23-207
Project Name: LEVEL ONE & LEVEL TWO TESTING
Project Location: 13 GERRY COURT, MARSDEN
Work Request: 8632
Date Sampled: 23/01/2024
Dates Tested: 23/01/2024 - 24/01/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Preparation Method: AS 1289.1.1 - Sampling and Preparation of Soils
Specification: 95% Standard
Site Selection: Selected by GTA
Location: 13 Gerry Ct. Marsden
Material: General Fill
Material Source: Cut From Onsite



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Approved Signatory: Greg Gibson
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NATA Accredited Laboratory Number: 2316

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	S8632A	S8632B	
Test Number	14	15	
Date Tested	23/01/2024	23/01/2024	
Time Tested	14:07	14:25	
Test Request #/Location	Lot 1	If Lot 1	
Easting	2.5m From Western Boundary of Lot	4m From Western Boundary of Lot	
Northing	8m From Southern Boundary of Lot	3m From Northern Boundary of Lot	
Layer / Reduced Level	1.0m From Finish Level	0.5m From Finish Level	
Thickness of Layer (mm)	175	175	
Soil Description	Silty CLAY	Silty CLAY	
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 ³	2.13	2.13	
Field Moisture Content %	16.4	16.4	
Field Dry Density (FDD) t/m ³	1.83	1.83	
Peak Converted Wet Density t/m ³	2.01	2.02	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	2.0	2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	106.0	106.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

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