JOB NO: ML20/105 **APRIL 2022**

HALL CONTRACTING PTY LTD
LEVEL ONE EARTHWORKS COMPLIANCE REPORT
EARTHWORKS FILLING OPERATIONS
NORTH HARBOUR PHASE 4B – STAGE 38

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Sunshine Coast Office
Job Number: ML20/105
Ref No: 3350
Author: H. Henderson

22nd April 2022

Hall Contracting Pty Ltd
PO Box 519
Buderim QLD 4006

ATTENTION: MR NELSON RIDDLE
Email: NelsonRiddle@hallcontracting.com.au

Dear Sir,

RE: LEVEL ONE COMPLIANCE REPORT FOR EARTHWORKS FILLING OPERATIONS NORTH HARBOUR PHASE 4B – STAGE 38

Table of Contents

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 filled residential building platforms and filled embankments below subgrade at the North Harbour Phase 4B (Stage 38) Development.

The work was commissioned by Mr. Nelson Riddle represented Hall Contracting (The Client).

Earthworks were carried out by The Client.

Earthworks filling operations were carried out between the following dates: -

- July 2020 and August 2020

The extent of fill covered by this report is presented on the site plan attached as Appendix A.

Picture 1: Aerial View of the Site (Image Source: Nearmap.com - dated 24th September 2020)

1.2 Previous Earthworks

Previous earthworks filling was present at The Site. The existing fill at The Site was constructed by Hall Contracting between May 2017 and September 2017. Details of the previous earthworks are contained in: -

"12052-DL17-006 – Hall Contracting – North Harbour Phase 3 dated October 2017.

The existing fill at this site is Controlled Fill as defined in AS2870 – Residential Slabs and Footings.

1.3 The Project

The Purpose for filling at The Site is to construct filled building platforms to support proposed residential dwellings and embankment fill supporting subgrades proposed pavements.

The approximate extent of fill covered by this report is presented on the attached marked up Site Plan.

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

The Site is bounded by existing developments to the North, West and South and undeveloped land to the 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.
- KN Group drawings and notes on drawings.

All other design requirements such as CBR and Quality of Materials, site classification, material, settlement assessments and existing filling were not included in the Brief and are therefore excluded from this Report.

3.0 METHODOLOGY

Earthworks Inspections 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 compaction testing.

3.1 Stripped Surface Assessment

The areas to be filled at The Site were observed to be stripped and cleared of all visible organic matter, deleterious, loose, unsuitable materials and sediments in an old dam to depths exposing natural soils suitable for the support of the construction of new fill.

The materials forming the fill foundation exposed after the stripping and clearing can be summarised as:

- Sandy Clay (CI-CH) at least very stiff, medium to high plasticity, fine to medium grained sands, orange grey brown and red brown

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

- Walk over assessments confirming that the competent natural ground was exposed.
- Proof roll testing an Articulated Dump Truck confirming no discernible movement of the exposed natural foundation.

On this basis, the compliant assessments in accordance with above indicate that the exposed natural ground forming the fill foundation is capable of supporting new fill materials.

3.2 Filling Operations

Fill material was sourced from onsite cuts within the North Harbour Development and Hastings Deering borrow pit.

Fill materials can be broadly summarised as:

- Onsite – Sandy Clay (CI - CH) medium to high plasticity, fine to medium grained sands, red grey brown and moist.

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

- Excavator
- Grader
- Articulated dump Trucks
- Water Cart
- 815 Compactor
- Pad Foot Roller

The fill materials were moisture conditioned at the 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 in layers appropriate for the above plant and compacted using the above plant carrying out multiple passes. Fill placed against slopes was placed on prepared benches and well as keyed into the slope with each lift.

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

Compaction Testing was carried out on the compacted 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.

4.0 STATEMENT OF COMPLIANCE

Our representative observed all the relevant earthworks operations including the stripped surfaces, filling operations and carried out compaction tests in accordance with the required standard.

It is confirmed that Level 1 Inspection has been carried out on the earthworks fill at this project.

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.

The fill can be deemed as “Controlled” in accordance with AS2870 (Residential Slabs and Footings).

5.0 EXCLUSIONS

This statement does not include any topsoil, which may be placed for use as dressing, backfill to services, fill outside the area shown on the attached site plan, fill constructed by others or any other subsequent earthworks after September 2020.

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, including soil or fill reactivity and soaked CBR values. We note that the fill materials used may result in unfavourable site classifications and low subgrade design strengths.

This report is not to be relied upon for settlement analysis and soft soils engineering advice. This is beyond the scope of this report and outside our engagement.

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 **Hall Contracting** (**Client**), its designers, clients and relevant statutory authorities for the sole purpose of providing geotechnical advice and recommendations in respect of the Proposed Residential Development at North Harbour Phase 4B [Stage 38] **(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 the **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,

JOEL COCKRAM
For and on behalf of
MORRISON GEOTECHNIC PTY LIMITED

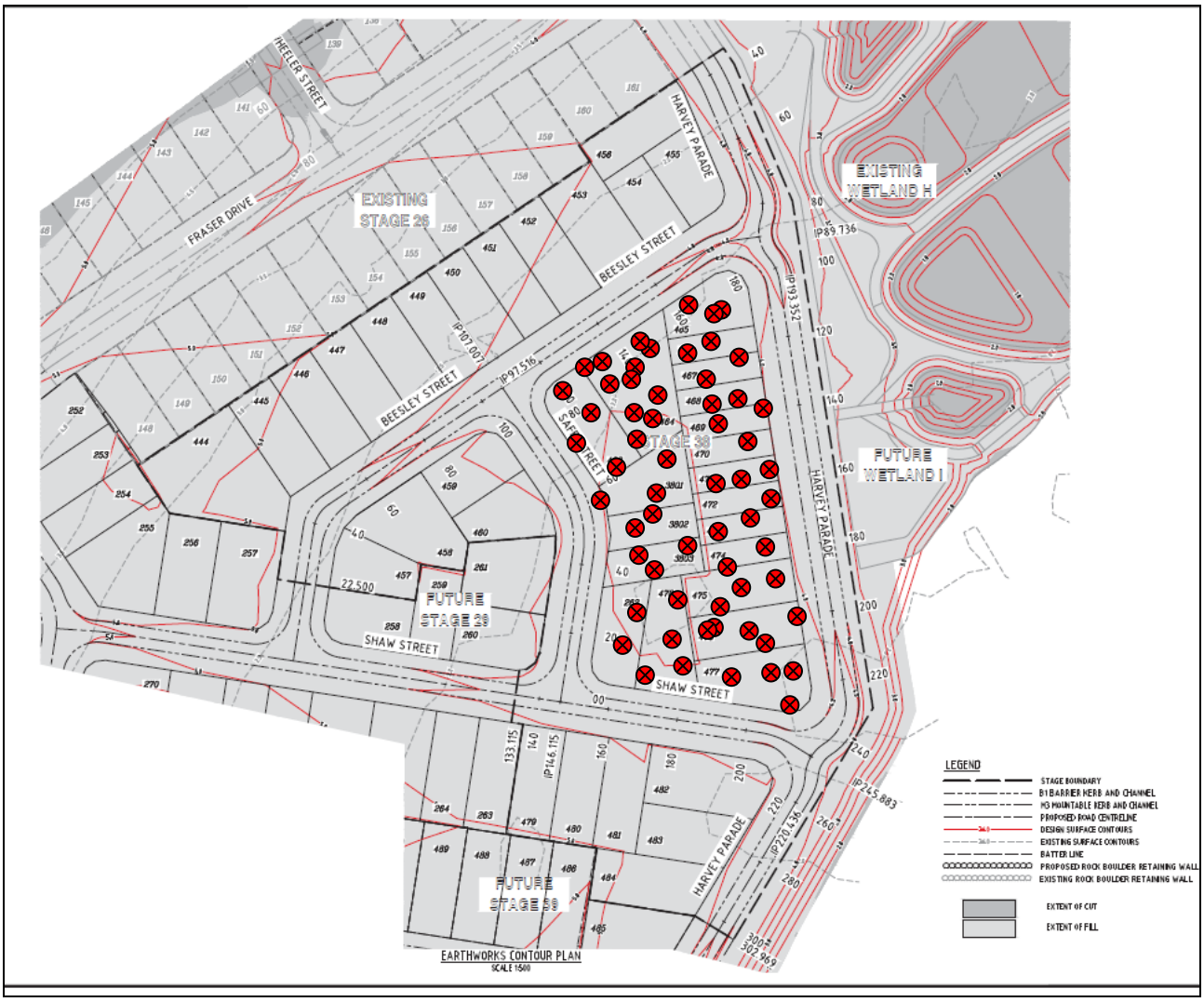
Reviewed by

HERBERT EHENDERSON
For and on behalf of
MORRISON GEOTECHNIC PTY LIMITED

Encl: Appendix A - Test Location Plans
Appendix B - Laboratory Test Reports

APPENDIX A

Site Plan Showing Test Locations



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Ph: 5443 9522 **Mob**: 0499 601506

Email: maroochydorelab@mgeo.com.au

Client :	Hall Contracting Pty Ltd		
Project :	Residential Development – Phase 4B (Stage 38) North Harbour, Burpengary		
Job No :	ML20/105	Drawing No:	ML20/105 (Stage 38)
Legend	Approx. Bulk Fill Test Location		Date: April 2022
	⊗		**Drawing Not To Scale**

APPENDIX B

Laboratory Test Certificates

Material Test Report

Report Number: **ML20/105-4**
Issue Number: 1
Date Issued: 24/07/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 375
Date Sampled: 20/07/2020 9:00
Dates Tested: 20/07/2020 - 24/07/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Material: Sandy Clay. Brown
Material Source: Onsite

MORRISON GEOTECHNIC
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Email: maroochydorelab@morrisongeo.com.au

NATA WORLD RECOGNISED ACCREDITATION
Accredited for compliance with ISO/IEC 17025 - Testing
Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	N20-375A	N20-375B	N20-375C	N20-375D	N20-375E
Test Number	41	42	43	44	45
Date Tested	20/07/2020	20/07/2020	20/07/2020	20/07/2020	20/07/2020
Time Tested	09:00	09:05	09:10	09:15	09:20
Test Request #/Location	Bulk Fill(Wetland G)	Bulk Fill(Wetland G)	Bulk Fill(Wetland G)	Bulk Fill(Wetland G)	Bulk Fill(Wetland G)
Easting	500093	500084	500071	500088	500078
Northing	7000065	7000079	70001010	7000077	7000092
Elevation (m)	-1.3	-1.2	-0.9	-0.6	-0.5
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.11	2.09	2.07	2.17	2.18
Field Moisture Content %	16.6	14.3	13.1	13.0	12.8
Field Dry Density (FDD) t/m^3	1.81	1.82	1.83	1.92	1.93
Peak Converted Wet Density t/m^3	2.13	2.12	2.09	2.18	2.19
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**99.0**	**98.0**	**99.5**	**100.0**	**99.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

Report Number: **ML20/105-4**
Issue Number: 1
Date Issued: 24/07/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 375
Date Sampled: 20/07/2020 9:00
Dates Tested: 20/07/2020 - 24/07/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Material: Sandy Clay. Brown
Material Source: Onsite

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Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	N20-375F	N20-375G	N20-375H	N20-375I	
Test Number	46	47	48	49	
Date Tested	20/07/2020	20/07/2020	20/07/2020	20/07/2020	
Time Tested	09:25	09:30	09:35	09:40	
Test Request #/Location	Bulk Fill(Wetland G)	Bulk Fill(Wetland G)	Bulk Fill(Wetland G)	Bulk Fill(Wetland G)	
Easting	500072	500064	500070	500087	
Northing	7000102	7000116	7000101	7000072	
Elevation (m)	-0.7	-0.3	F/L	F/L	
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	
Test Depth (mm)	200	200	200	200	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	**	**	**	**	
Field Wet Density (FWD) t/m^3	2.19	2.15	2.14	2.18	
Field Moisture Content %	13.6	11.1	11.0	13.2	
Field Dry Density (FDD) t/m^3	1.93	1.93	1.93	1.92	
Peak Converted Wet Density t/m^3	2.19	2.16	2.17	2.25	
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	
Moisture Variation (Wv) %	0.0	2.0	2.0	0.0	
Adjusted Moisture Variation %	**	**	**	**	
Hilf Density Ratio (%)	**100.0**	**99.5**	**98.5**	**97.0**	
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	

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

Material Test Report

Report Number: **ML20/105-6**
Issue Number: 1
Date Issued: 27/07/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 373
Date Sampled: 18/07/2020 9:00
Dates Tested: 18/07/2020 - 27/07/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Material: Sandy Clay. Brown
Material Source: Onsite

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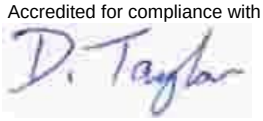

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	N20-373A	N20-373B	N20-373C	N20-373D	N20-373E
Test Number	21	22	23	24	25
Date Tested	18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020
Time Tested	09:00	09:05	09:10	09:15	09:20
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499758	499733	499707	499674	499635
Northing	6999733	6999704	6999679	6999642	6999586
Elevation (m)	-1.3m	-1.4m	-1.5m	-1.3m	-1.6m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	**
Field Wet Density (FWD) t/m^3	1.99	1.99	2.08	2.05	2.04
Field Moisture Content %	9.6	9.6	14.3	15.3	13.6
Field Dry Density (FDD) t/m^3	1.82	1.82	1.82	1.78	1.80
Peak Converted Wet Density t/m^3	2.06	2.06	2.02	2.01	2.03
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	4.0	3.0	2.5	1.0	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**96.5**	**96.5**	**103.5**	**102.0**	**101.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

Report Number: **ML20/105-6**
Issue Number: 1
Date Issued: 27/07/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 373
Date Sampled: 18/07/2020 9:00
Dates Tested: 18/07/2020 - 27/07/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Material: Sandy Clay. Brown
Material Source: Onsite

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Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	N20-373F	N20-373G	N20-373H	N20-373I	N20-373J
Test Number	26	27	28	29	30
Date Tested	18/07/2020	18/07/2020	18/07/2020	18/07/2020	18/07/2020
Time Tested	09:25	09:30	09:35	09:40	09:45
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499632	499659	499690	499709	499746
Northing	6999557	6999592	6999621	6999657	6999700
Elevation (m)	-1.4m	-1.5m	-1.6m	-1.5m	-1.4m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	0.0	**
Field Wet Density (FWD) t/m^3	2.04	2.03	2.04	2.05	2.02
Field Moisture Content %	13.0	16.5	17.9	17.2	10.2
Field Dry Density (FDD) t/m^3	1.80	1.74	1.73	1.75	1.83
Peak Converted Wet Density t/m^3	2.06	1.97	1.99	2.03	2.05
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.5	0.0	2.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**99.0**	**103.0**	**103.0**	**101.0**	**98.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

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Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Report Number: **ML20/105-9**
Issue Number: 1
Date Issued: 28/07/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 377
Date Sampled: 21/07/2020 10:30
Dates Tested: 21/07/2020 - 28/07/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: AS 1289.1.4.1
Material: Clayey Sand. Brown
Material Source: Onsite (Marina Burrow)

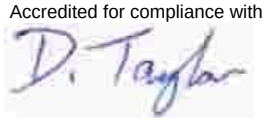
Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	N20-377A	N20-377B	N20-377C	N20-377D	N20-377E
Test Number	50	51	52	53	54
Date Tested	21/07/2020	21/07/2020	21/07/2020	21/07/2020	21/07/2020
Time Tested	10:30	10:35	10:40	10:45	10:50
Test Request #/Location	Bulk FillMarina Burrow)	Bulk FillMarina Burrow)	Bulk FillMarina Burrow)	Bulk FillMarina Burrow)	Bulk FillMarina Burrow)
Easting	499838	499841	499835	499825	499804
Northing	6999621	6999596	6999563	6999533	6999524
Elevation (m)	-1.6m	-1.5m	-1.6m	-1.7m	-1.5m
Soil Description	Clayey Sand. Brown	Clayey Sand. Brown	Clayey Sand. Brown	Clayey Sand. Brown	Clayey Sand. Brown
Test Depth (mm)	200	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.05	2.05	2.03	2.06	1.97
Field Moisture Content %	17.2	19.7	16.1	16.4	14.2
Field Dry Density (FDD) t/m^3	1.75	1.71	1.75	1.77	1.72
Peak Converted Wet Density t/m^3	2.13	2.14	2.12	2.15	2.07
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**96.0**	**95.5**	**95.5**	**96.0**	**95.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
Unit 4 / 81 Wises Road Maroochydore QLD 4558
Phone: (07) 5443 9522
Email: maroochydorelab@morrisongeo.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Report Number: **ML20/105-9**
Issue Number: 1
Date Issued: 28/07/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 377
Date Sampled: 21/07/2020 10:30
Dates Tested: 21/07/2020 - 28/07/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: AS 1289.1.4.1
Material: Clayey Sand. Brown
Material Source: Onsite (Marina Burrow)

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	N20-377F	N20-377G	N20-377H	N20-377I	N20-377J
Test Number	55	56	57	58	59
Date Tested	21/07/2020	21/07/2020	21/07/2020	21/07/2020	21/07/2020
Time Tested	10:55	11:00	11:05	11:10	11:15
Test Request #/Location	Bulk FillMarina Burrow)	Bulk FillMarina Burrow)	Bulk FillMarina Burrow)	Bulk FillMarina Burrow)	Bulk FillMarina Burrow)
Easting	499838	499831	499823	499815	499793
Northing	6999627	6999611	6999596	6999570	6999544
Elevation (m)	-1.6m	-1.5m	-1.5m	-1.6m	-1.4m
Soil Description	Clayey Sand. Brown	Clayey Sand. Brown	Clayey Sand. Brown	Clayey Sand. Brown	Clayey Sand. Brown
Test Depth (mm)	200	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	**
Field Wet Density (FWD) t/m^3	1.97	1.97	1.98	1.98	1.97
Field Moisture Content %	13.9	13.4	12.2	13.7	12.0
Field Dry Density (FDD) t/m^3	1.73	1.74	1.77	1.75	1.76
Peak Converted Wet Density t/m^3	2.07	2.06	2.07	2.09	2.07
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	2.0	0.0	2.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	**95.5**	**96.0**	**96.0**	**95.0**	**95.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
Unit 4 / 81 Wises Road Maroochydore QLD 4558
Phone: (07) 5443 9522
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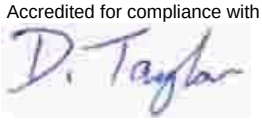
Report Number: **ML20/105-10**
Issue Number: 1
Date Issued: 11/08/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 379
Date Sampled: 22/07/2020 10:00
Dates Tested: 22/07/2020 - 08/08/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Material: Sandy Clay. Brown
Material Source: Onsite

NATA WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-379A	N20-379B	N20-379C	N20-379D	N20-379E	N20-379F
Test Number	60	61	62	63	64	65
Date Tested	22/07/2020	22/07/2020	22/07/2020	22/07/2020	22/07/2020	22/07/2020
Time Tested	10:00	10:05	10:10	10:15	10:20	10:25
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499771	499733	499709	499685	499671	499655
Northing	6999722	6999711	6999699	6999682	6999660	6999646
Elevation (m)	-.6m	-.7m	-.6m	-.8m	-.8m	-.7m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	1.95	1.99	1.99	1.90	1.94	1.92
Field Moisture Content %	15.8	15.0	15.9	11.3	14.5	15.5
Field Dry Density (FDD) t/m^3	1.68	1.73	1.72	1.71	1.69	1.66
Peak Converted Wet Density t/m^3	2.04	2.07	2.07	1.96	2.02	2.01
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	0.0	2.5	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**95.5**	**96.0**	**96.0**	**97.0**	**95.5**	**95.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

Report Number: **ML20/105-10**
Issue Number: 1
Date Issued: 11/08/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 379
Date Sampled: 22/07/2020 10:00
Dates Tested: 22/07/2020 - 08/08/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Material: Sandy Clay. Brown
Material Source: Onsite

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
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Phone: (07) 5443 9522
Email: maroochydorelab@morrisongeo.com.au

NATA WORLD RECOGNISED ACCREDITATION
Accredited for compliance with ISO/IEC 17025 - Testing
Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-379G	N20-379H	N20-379I	N20-379J	N20-379K	N20-379L
Test Number	66	67	68	69	70	71
Date Tested	22/07/2020	22/07/2020	22/07/2020	22/07/2020	22/07/2020	22/07/2020
Time Tested	10:30	10:35	10:40	10:45	10:50	10:55
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499641	4999677	499677	499700	499717	499732
Northing	6999644	6999609	6999636	6999641	6999652	6999668
Elevation (m)	-.9m	-1.0m	-.9m	-.7m	-.9m	-.7m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.08	2.01	2.00	2.06	1.92	1.93
Field Moisture Content %	15.4	16.0	16.0	15.1	14.5	12.8
Field Dry Density (FDD) t/m^3	1.80	1.73	1.72	1.79	1.68	1.71
Peak Converted Wet Density t/m^3	2.08	2.10	2.05	2.09	2.01	1.93
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0	0.0	2.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**100.0**	**95.5**	**97.5**	**98.5**	**95.5**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

Report Number: **ML20/105-10**
Issue Number: 1
Date Issued: 11/08/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: (N4B1 / F20C
Work Request: 379
Date Sampled: 22/07/2020 10:00
Dates Tested: 22/07/2020 - 08/08/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Material: Sandy Clay. Brown
Material Source: Onsite

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
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NATA WORLD RECOGNISED ACCREDITATION
Accredited for compliance with ISO/IEC 17025 - Testing
Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-379M	N20-379N	N20-379O			
Test Number	72	73	74			
Date Tested	22/07/2020	22/07/2020	22/07/2020			
Time Tested	11:00	11:05	11:10			
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill			
Easting	499747	499762	499784			
Northing	6999686	6999688	6999707			
Elevation (m)	-.8m	-.6m	-.5m			
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown			
Test Depth (mm)	200	200	200			
Sieve used to determine oversize (mm)	19.0	19.0	19.0			
Percentage of Wet Oversize (%)	**	**	**			
Field Wet Density (FWD) t/m^3	1.94	1.96	1.95			
Field Moisture Content %	12.8	10.1	13.6			
Field Dry Density (FDD) t/m^3	1.72	1.78	1.72			
Peak Converted Wet Density t/m^3	2.00	2.02	2.04			
Adjusted Peak Converted Wet Density t/m^3	**	**	**			
Moisture Variation (Wv) %	2.0	2.0	0.0			
Adjusted Moisture Variation %	**	**	**			
Hilf Density Ratio (%)	**97.5**	**97.0**	**95.5**			
Compaction Method	**Standard**	**Standard**	**Standard**			

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
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Phone: (07) 5443 9522
Email: dtaylor@mgeo.com.au

Report Number: **ML20/105-21**
Issue Number: 1
Date Issued: 28/09/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 395
Date Sampled: 15/08/2020 10:00
Dates Tested: 15/08/2020 - 28/09/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: AS 1289.1.4.1
Material: Sandy Clay. Brown
Material Source: Onsite

NATA WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-395A	N20-395B	N20-395C	N20-395D	N20-395E	N20-395F
Test Number	185	186	187	188	189	190
Date Tested	15/08/2020	15/08/2020	15/08/2020	15/08/2020	15/08/2020	15/08/2020
Time Tested	07:00	07:05	07:10	07:15	07:20	07:25
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499627	499622	499609	499605	499612	499623
Northing	6999579	6999565	6999563	6999552	6999544	6999555
Elevation (m)	-.2m	-.2m	-.4m	-.4m	-.2m	-.3m
Soil Description	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.10	2.10	2.10	2.10	2.09	2.06
Field Moisture Content %	16.0	15.6	16.2	15.0	16.3	16.5
Field Dry Density (FDD) t/m^3	1.81	1.82	1.81	1.83	1.80	1.77
Peak Converted Wet Density t/m^3	2.17	2.19	2.15	2.18	2.16	2.15
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**97.0**	**96.0**	**98.0**	**96.5**	**97.0**	**95.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
Unit 4 / 81 Wises Road Maroochydore QLD 4558
Phone: (07) 5443 9522
Email: dtaylor@mgeo.com.au

Report Number: **ML20/105-21**
Issue Number: 1
Date Issued: 28/09/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 395
Date Sampled: 15/08/2020 10:00
Dates Tested: 15/08/2020 - 28/09/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: AS 1289.1.4.1
Material: Sandy Clay. Brown
Material Source: Onsite

NATA WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-395G	N20-395H	N20-395I	N20-395J	N20-395K	N20-395L
Test Number	191	192	193	194	195	196
Date Tested	15/08/2020	15/08/2020	15/08/2020	15/08/2020	15/08/2020	15/08/2020
Time Tested	07:30	07:40	07:45	07:50	08:01	08:10
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499644	499651	499644	499735	499724	499710
Northing	6999569	6999553	6999534	6999555	6999540	6999519
Elevation (m)	-.5m	-.2m	-.2m	-1.0m	-1.0m	-.8m
Soil Description	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.11	2.08	2.10	2.10	2.10	2.02
Field Moisture Content %	16.5	17.9	15.2	16.2	14.6	14.7
Field Dry Density (FDD) t/m^3	1.81	1.76	1.82	1.81	1.83	1.76
Peak Converted Wet Density t/m^3	2.15	2.13	2.17	2.18	2.15	2.12
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**98.0**	**97.5**	**96.5**	**96.5**	**97.5**	**95.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

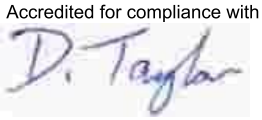
Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
Unit 4 / 81 Wises Road Maroochydore QLD 4558
Phone: (07) 5443 9522
Email: dtaylor@mgeo.com.au

Report Number: **ML20/105-21**
Issue Number: 1
Date Issued: 28/09/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 395
Date Sampled: 15/08/2020 10:00
Dates Tested: 15/08/2020 - 28/09/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: AS 1289.1.4.1
Material: Sandy Clay. Brown
Material Source: Onsite

NATA WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-395M	N20-395N	N20-395O	N20-395P	N20-395Q	N20-395R
Test Number	197	198	199	200	201	202
Date Tested	15/08/2020	15/08/2020	15/08/2020	15/08/2020	15/08/2020	15/08/2020
Time Tested	08:15	08:20	08:25	08:30	08:38	08:42
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499694	499707	499709	499695	499699	499692
Northing	6999518	6999540	6999557	6999558	6999540	6999525
Elevation (m)	-.6m	-.7m	-1.0m	-1.1m	-.8m	-.9m
Soil Description	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.08	2.09	2.08	2.01	2.14	2.15
Field Moisture Content %	14.9	16.4	16.0	17.0	14.6	15.6
Field Dry Density (FDD) t/m^3	1.81	1.79	1.80	1.72	1.87	1.86
Peak Converted Wet Density t/m^3	2.15	2.17	2.13	2.09	2.17	2.16
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**96.5**	**96.0**	**97.5**	**96.0**	**99.0**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

Report Number: **ML20/105-21**
Issue Number: 1
Date Issued: 28/09/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 395
Date Sampled: 15/08/2020 10:00
Dates Tested: 15/08/2020 - 28/09/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: AS 1289.1.4.1
Material: Sandy Clay. Brown
Material Source: Onsite

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
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Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-395S	N20-395T	N20-395U	N20-395V	N20-395W	N20-395X
Test Number	203	204	205	206	207	208
Date Tested	15/08/2020	15/08/2020	15/08/2020	15/08/2020	15/08/2020	15/08/2020
Time Tested	08:50	08:55	09:00	09:10	09:15	09:20
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499692	499691	499687	499680	499678	499674
Northing	6999543	6999557	6999543	6999530	6999546	6999559
Elevation (m)	-.6m	-.5m	.-4m	-.6m	-.4m	-.7m
Soil Description	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.	Sandy Clay.
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.11	2.08	2.14	2.12	2.10	2.11
Field Moisture Content %	12.4	14.7	16.2	16.3	15.8	14.7
Field Dry Density (FDD) t/m^3	1.88	1.81	1.84	1.82	1.82	1.84
Peak Converted Wet Density t/m^3	2.16	2.15	2.18	2.18	2.15	2.13
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	2.0	0.0	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**97.5**	**96.5**	**98.0**	**97.5**	**98.0**	**99.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

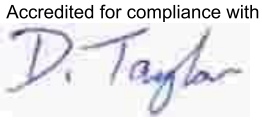
Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
Unit 4 / 81 Wises Road Maroochydore QLD 4558
Phone: (07) 5443 9522
Email: dtaylor@mgeo.com.au

Report Number: **ML20/105-21**
Issue Number: 1
Date Issued: 28/09/2020
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 395
Date Sampled: 15/08/2020 10:00
Dates Tested: 15/08/2020 - 28/09/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Site Selection: AS 1289.1.4.1
Material: Sandy Clay. Brown
Material Source: Onsite

NATA WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-395Y					
Test Number	209					
Date Tested	15/08/2020					
Time Tested	09:25					
Test Request #/Location	Bulk Fill					
Easting	499666					
Northing	6999536					
Elevation (m)	-.4m					
Soil Description	Sandy Clay.					
Test Depth (mm)	200					
Sieve used to determine oversize (mm)	**					
Percentage of Wet Oversize (%)	**					
Field Wet Density (FWD) t/m^3	2.09					
Field Moisture Content %	15.4					
Field Dry Density (FDD) t/m^3	1.81					
Peak Converted Wet Density t/m^3	2.14					
Adjusted Peak Converted Wet Density t/m^3	**					
Moisture Variation (Wv) %	0.0					
Adjusted Moisture Variation %	**					
Hilf Density Ratio (%)	**98.0**					
Compaction Method	**Standard**					

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
283-307 Buckley Road Burpengary East QLD 4505
Phone: (07) 5443 9522
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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Report Number: **ML20/105-23**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Amended Locations*
Date Issued: 15/12/2021
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 383
Date Sampled: 30/07/2020 8:00
Dates Tested: 31/07/2020 - 02/10/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Bulk Fill
Material: Sandy Clay. Brown
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-383A	N20-383B	N20-383C	N20-383D	N20-383E	N20-383F
Test Number	75	76	77	78	79	80
Date Tested	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020
Time Tested	08:00	08:05	08:10	08:20	08:25	08:30
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499791	499762	499750	499738	499719	499716
Northing	6999752	6999729	6999724	6999711	6999700	6999683
Layer / Reduced Level	-1.0	-.8m	-.9m	-1.1m	-1.0m	-1.2m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.11	2.12	2.12	2.10	2.07	2.12
Field Moisture Content %	20.6	18.2	21.3	22.5	21.8	20.8
Field Dry Density (FDD) t/m^3	1.75	1.79	1.75	1.72	1.70	1.76
Peak Converted Wet Density t/m^3	2.02	2.04	2.06	2.00	2.00	2.04
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	1.0	1.0	2.5	0.0	1.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**105.0**	**103.5**	**103.0**	**105.0**	**103.5**	**104.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

MORRISON GEOTECHNIC
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Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Report Number: **ML20/105-23**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Amended Locations*
Date Issued: 15/12/2021
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 383
Date Sampled: 30/07/2020 8:00
Dates Tested: 31/07/2020 - 02/10/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Bulk Fill
Material: Sandy Clay. Brown
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-383G	N20-383H	N20-383I	N20-383J	N20-383K	N20-383L
Test Number	81	82	83	84	85	86
Date Tested	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020
Time Tested	08:34	08:39	08:50	08:55	09:00	09:05
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499693	499683	499630	499630	499628	499639
Northing	6999678	6999665	6999648	6999643	6999623	6999614
Layer / Reduced Level	-.9m	-1.1m	-.9m	-.8m	-.8m	-1.3m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.07	2.11	2.09	2.11	2.10	2.08
Field Moisture Content %	20.4	20.2	21.2	18.6	21.3	24.1
Field Dry Density (FDD) t/m^3	1.72	1.75	1.72	1.78	1.73	1.67
Peak Converted Wet Density t/m^3	1.99	2.07	2.00	2.10	2.04	2.02
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	1.0	0.5	0.0	1.5	2.5	0.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**104.0**	**102.0**	**104.5**	**101.0**	**103.0**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Report Number: **ML20/105-23**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Amended Locations*
Date Issued: 15/12/2021
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 383
Date Sampled: 30/07/2020 8:00
Dates Tested: 31/07/2020 - 02/10/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Bulk Fill
Material: Sandy Clay. Brown
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-383M	N20-383N	N20-383O	N20-383P	N20-383Q	N20-383R
Test Number	87	88	89	90	91	92
Date Tested	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020
Time Tested	09:10	09:16	09:20	09:25	09:30	09:35
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499645	499657	499674	499695	499707	499721
Northing	6999631	6999647	6999656	6999655	6999648	6999681
Layer / Reduced Level	-1.1	-.6m	-.9m	-.7m	-.9m	-1.4m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.11	2.08	2.07	2.07	2.03	2.02
Field Moisture Content %	19.7	22.4	18.0	17.0	16.0	19.5
Field Dry Density (FDD) t/m^3	1.76	1.70	1.76	1.77	1.75	1.69
Peak Converted Wet Density t/m^3	2.07	1.99	2.09	2.05	2.04	2.01
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	1.5	1.0	0.5	0.0	0.0	2.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**101.5**	**104.5**	**99.0**	**101.0**	**99.5**	**100.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Report Number: **ML20/105-23**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Amended Locations*
Date Issued: 15/12/2021
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 383
Date Sampled: 30/07/2020 8:00
Dates Tested: 31/07/2020 - 02/10/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Bulk Fill
Material: Sandy Clay. Brown
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-383S	N20-383T	N20-383U	N20-383V	N20-383W	N20-383X
Test Number	93	94	95	96	97	98
Date Tested	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020
Time Tested	09:40	09:47	09:52	09:59	10:10	10:16
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499733	499764	499777	499784	499800	499817
Northing	6999679	69999702	6999715	6999726	6999721	6999719
Layer / Reduced Level	-.1.0	-.8m	-1.1m	-.9m	-1.3m	-1.1m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.08	2.07	2.06	2.04	2.05	2.06
Field Moisture Content %	17.1	20.5	20.6	20.7	20.5	19.1
Field Dry Density (FDD) t/m^3	1.77	1.72	1.71	1.69	1.70	1.72
Peak Converted Wet Density t/m^3	2.14	2.01	2.12	2.11	2.14	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**97.0**	**103.0**	**97.0**	**97.0**	**96.0**	**98.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
North Harbour Annex Facility No:24234
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Phone: (07) 5443 9522
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Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Report Number: **ML20/105-23**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Amended Locations*
Date Issued: 15/12/2021
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 383
Date Sampled: 30/07/2020 8:00
Dates Tested: 31/07/2020 - 02/10/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Bulk Fill
Material: Sandy Clay. Brown
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-383Y	N20-383Z	N20-383AA	N20-383AB	N20-383AC	N20-383AD
Test Number	99	100	101	102	103	104
Date Tested	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020	30/07/2020
Time Tested	10:24	10:30	10:35	10:40	10:45	10:50
Test Request #/Location	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill	Bulk Fill
Easting	499822	499805	499788	499779	499768	499745
Northing	6999712	6999700	6999690	6999681	6999665	6999653
Layer / Reduced Level	-.7m	-.9m	-.8m	-1.2m	-1.0m	-1.0m
Soil Description	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown	Sandy Clay. Brown
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	**	**	**	**	**	**
Percentage of Wet Oversize (%)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.09	2.05	2.06	2.06	2.05	2.05
Field Moisture Content %	19.0	20.1	20.2	12.3	21.5	20.7
Field Dry Density (FDD) t/m^3	1.75	1.70	1.71	1.83	1.68	1.70
Peak Converted Wet Density t/m^3	2.11	2.10	2.09	2.06	2.15	2.12
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0	2.5	-2.5	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**99.0**	**97.0**	**98.0**	**100.0**	**95.5**	**97.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**

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

Material Test Report

MORRISON GEOTECHNIC
Morrison Geotechnic Pty Ltd
Base Facility No:17071
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Accredited for compliance with ISO/IEC 17025 - Testing

NATA WORLD RECOGNISED ACCREDITATION

Approved Signatory: David Taylor
Senior Technician
NATA Accredited Laboratory Number: 1169

Report Number: **ML20/105-23**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason: *Amended Locations*
Date Issued: 15/12/2021
Client: HALL CONTRACTING PTY LTD
PO BOX 519, BUDERIM QLD 4556
Contact: Greg Busse
Project Number: ML20/105
Project Name: Phase 4B - Level 1 Bulk Earthworks
Project Location: North Harbour, Burpengary
Client Reference: N4B1/F20C
Work Request: 383
Date Sampled: 30/07/2020 8:00
Dates Tested: 31/07/2020 - 02/10/2020
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Bulk Fill
Material: Sandy Clay. Brown
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	N20-383AE					
Test Number	105					
Date Tested	30/07/2020					
Time Tested	11:00					
Test Request #/Location	Bulk Fill					
Easting	499723					
Northing	6999638					
Layer / Reduced Level	-1.1m					
Soil Description	Sandy Clay. Brown					
Test Depth (mm)	200					
Sieve used to determine oversize (mm)	**					
Percentage of Wet Oversize (%)	**					
Field Wet Density (FWD) t/m^3	2.05					
Field Moisture Content %	20.3					
Field Dry Density (FDD) t/m^3	1.70					
Peak Converted Wet Density t/m^3	2.11					
Adjusted Peak Converted Wet Density t/m^3	**					
Moisture Variation (Wv) %	0.0					
Adjusted Moisture Variation %	**					
Hilf Density Ratio (%)	**97.0**					
Compaction Method	**Standard**					

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